Municipal Solid Waste Management in Delhi and London:
a Comparison of Institutional Capacity for Environmental
Policy Reform

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Declaration of original work

The thesis entitled 'Municipal Solid Waste Management in Delhi and London: a comparison of institutional capacity for environmental policy reform' submitted for the degree of PhD is my own work, based on extensive research in the field and review of existing literature.

Geeta Kulshrestha

Abstract

This thesis investigates the explanatory value of Martin Jänicke's model of capacity for environmental policy reform by empirically applying it to the context of Municipal Solid Waste (MSW) management in the cities of Delhi and London, mainly during the period 1990 and 2003. The research included a critical review of the existing literature, extensive interviews and secondary sources. The analysis also draws on policy networks theory to analyse interactions between the range of state and non-state actors influencing the environmental policy process.

The investigation suggests that, while it is a powerful explanatory tool when applied to MSW policy reform in Delhi and London, Jänicke's model underestimates the predominant role played by institutional factors in determining capacity for environmental policy reform. This predominance is established by an examination of how institutional conditions, characterised by particular types of policy networks, mediate the relationship between pressure for environmental protection and *effective* policy reform. Interactions reflecting the entrenched interests of dominant actors in the policy network influence the alternatives considered for MSW policy reform in both cases in ways that constrains the drive for more environmental sustainability. The thesis concludes that effective policy reform is unlikely to be achieved without institutional change aimed at increasing institutional capacity.

The thesis, in its comparative institutional analysis of MSW management in Delhi and London, contributes to the scholarship in the field of capacity building as well as wider international efforts towards sustainable development. It is of immediate relevance to both academic and policy debates.

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List of Abbreviations

ADB	Asian Development Bank
ALG	Association of London Government
BATNEEC	Best Available Techniques Not Entailing Excessive Costs
BJP	Bharatiya Janata Party (India)
BMW	Biodegradable Municipal Waste
BPEO	Best Practicable Environmental Option
BRTF	Better Regulation Task Force
BV	Best Value
CBO	Community-based Organisation
CIPFA	Chartered Institute of Public Finance and Accountancy (UK)
CO	Cabinet Office
Cong I	Congress Party of India
COPA	Control of Pollution Act (UK)
CPCB	Central Pollution Control Board
CSD	Commission on Sustainable Development (UN)
CSE	Centre for Science and Environment
DCB	Delhi Cantonment Board
DEFRA	Department of Environment, Food and Rural Affairs (2001-)
DETR	Department of the Environment, Transport and the Regions (1997-2001)
DG-Environment	Directorate-General of the Environment (European Commission, formerly DG XI)
DoE	Department of Environment (Delhi State government)
DPCC	Delhi Pollution Control Committee
DTI	Department of Trade and Industry
DTLR	Department of Transport, Local Government and the Regions (2001-02)
DUEIIP	Delhi Urban Environment and Infrastructure Improvement Project
EA	Environment Agency (UK)
EC	European Commission
ECT	Ealing Community Transport
EfW	Energy from Waste
EIA	Environmental Impact Assessment
ENDS	Environmental Data Services Ltd.
ENTRUST	Environmental Trust Scheme Regulatory Body (UK)
EPA	Environment Protection Act (India & UK)
ESA	Environmental Services Association (UK)
ESART	Environmental Services Association Research Trust Ltd. (UK)
ETBPP	Environment Technology Best Practice Programme
EU	European Union
EU-25	European Union comprising of 25 member states
FoE	Friends of the Earth
GA	Green Alliance
GDP	Gross Domestic Product
GLA	Greater London Authority
GLC	Greater London Council
GNP	Gross National Product
HC	High Court (India)
HMSO	Her Majesty's Stationery Office (UK)
HUDCO	Housing and Urban Development Corporation Ltd. (Delhi)
IEMA	Institute of Environmental Management and Assessment (UK)

IPC	Integrated Pollution Control
IPPC	Integrated Pollution Prevention and Control
IWM	Integrated Waste Management
LAWDC	Local Authorities Waste Disposal Company
LEAP	Local Environment Agency Plan
LPAC	London Planning Advisory Committee
LPWAP	London Pride Waste Action Programme
LTCS	Landfill Tax Credit Scheme (UK)
MAFF	Ministry of Agriculture, Fisheries and Food (UK)
MCD	Municipal Corporation of Delhi
MNES	Ministry of Non-Conventional Energy Sources (India)
MoEF	Ministry of Environment and Forests (India)
MRFs	Material Recycling Facilities
MSW	Municipal Solid Waste
NCEPC	National Committee on Environmental Planning and Co-ordination (India)
NCR	National Capital Region (India)
NCT	National Capital Territory (India)
NDMC	New Delhi Municipal Committee
NEERI	National Environmental Engineering Research Institute (India)
NGO	Non-governmental Organisation
NWAI	National Waste Awareness Initiative
ODPM	Office of the Deputy Prime Minister
PFI	Private Finance Initiative (UK)
PLIA	Public Liability Insurance Act (1991, India)
PPG	Planning Policy Guidance
RWA	Resident Welfare Association
SACEP	South Asia Co-operative Environment Programme
SC	Supreme Court (of India)
SDC	Sustainable Development Commission
SELCHP	South East London Combined Heat and Power Ltd.
SERPLAN	London and South East Regional Planning Conference
SU	Strategy Unit
SWAP	Save Waste And Prosper
SWM	Solid Waste Management
SWMA	Strategic Waste Management Assessment
TERI	The Energy Research Institute (India, formerly Tata Energy Research Institute)
UA	Unitary Authorities
ULBs	Urban Local Bodies (India)
UN	United Nations
UNCHS	United Nations Centre for Human Settlements
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WCAs	Waste Collection Authorities
WCED	World Commission on Environment and Development
WDAs	Waste Disposal Authorities
WEEE	Waste Electrical and Electronic Equipment
WEN	Women's Environmental Network
WIP	Waste Implementation Programme (UK)
WRA	Waste Regulation Authority (UK)
WRAP	Wastes and Resources Action Programme
WTE	Waste-to-Energy

Chapter 1

Municipal Solid Waste management: issues and approaches

1.1 Of garbage and bins: defining Municipal Solid Waste

1.2 Sustainable development: is Municipal Solid Waste management a good showcase?

> ➤ The management of Municipal Solid Waste: towards an environmental policy

> ➤ Waste: a problem for the North and the South

1.3 Approaches to studying Municipal Solid Waste policy

> ➤ Capacity for environmental policy reform

Fifteen percent of the world's population, in the high-income countries account for 56% of total consumption while the poorest 40% in low-income countries account for only 11% of total consumption.

Commission on Sustainable Development (2002)

Environmentally sound waste management must go beyond the mere safe disposal or recovery of wastes that are generated and seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption. This implies the application of the integrated life cycle management concept, which presents a unique opportunity to reconcile development with environmental protection.

United Nations (Chapter 21, *Agenda 21*, 1992)

In 2002, the Earth Summit in Johannesburg concluded with a much diluted action plan to confront the world's environmental problems. However, it did highlight two aspects of relevance to this research: the continuing divisions between the North and the South and the link between environment and development.[1] Since environmental policy continues to respond to the negative impacts of economic development, the *integration* of the agendas of development[2] and

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[1] The terms 'North' and 'South' are used broadly to indicate developed and developing countries respectively, defined mainly on the basis of comparable economic (Holm, 1990) and political situation.
[2] Developmental agenda includes social concerns (like health, education, social equality) and economic concerns (like industrialisation). In this thesis it refers primarily to economic development unless stated otherwise. The environmental agenda includes 'green' (for instance, restoring biodiversity) and 'brown' (for instance, reducing pollution) issues. See Mannion and Bowlby (1996), MoEF (1992b), *Chapter 8 of Agenda 21* of the United Nations (UN, 1992) for a detailed analysis of the need for integration of development and environment agendas. Also see Gouldson and Murphy (1998), Gouldson and Roberts (2000), Jänicke (1997), Chapman (2003), Arrow *et al.* (1995), Gibbs (1996). *Agenda 21* also provides a list of objectives of environmental policy (UNCED – *Agenda 21*, Chapter Eight, p. 85).

environment has the potential to secure sustainable development.[3] The policy on Municipal Solid Waste (MSW) in both developed and developing countries is a good example of where and how such integration could take place in moving towards sustainable development. Sustainable waste management is not only about efficient waste collection and disposal services, but also includes waste minimisation (or reduction), converting waste into a resource, reducing its potential to pollute, and treating and disposing waste in keeping with the widely accepted concept of 'waste hierarchy'. The waste hierarchy is an ordered set of preferences: reduce (waste minimisation/prevention), reuse and recycle (including composting), incineration with energy recovery (Energy from Waste, EfW), incineration without energy recovery and landfill of any residues as a last resort.[4] However, as emphasised by Jänicke (1997), domestic waste management is an area where both developed and developing countries often fall short in meeting the objectives of environmental sustainability. This is substantiated by the existing literature on the cities of Delhi and London[5] and also the empirical evidence gathered in the present research, which shows that MSW policy in both cities fails to meet criteria of environmental sustainability.

The thesis brings together a range of concerns and debates regarding the environment, on the one hand, and analyses of environmental policy formulation and implementation on the other. However, this is not the first time these have been drawn together. Notably, Martin Jänicke has developed a model that links diverse factors which constitute the capacity for environmental policy reform.[6] His approach aims to look beyond specific kinds of action undertaken to resolve environmental problems and examines broader structural conditions.[7] According to the model, policy outcomes are influenced by the following factors that together indicate the capacity for environmental policy reform: actors, strategies, in the broad context of a systemic (structural) framework with three dimensions (cognitive-informational, political-institutional and economic-technological) and the immediate situative context, with the character of the problem also playing a major role. Jänicke (and others) have used the model to analyse capacities for environmental

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[3] See Meyer (2000) for an alternative perspective since he questions the belief that environmental controls strangle the economy and economic competitiveness.

[4] The main options are discussed briefly in Annex 1. Often a distinction is made between EfW (indicating energy recovery from waste residue after recycling) and Waste to Energy (implying combustion of municipal solid waste in bulk). However, the fieldwork for this research and policy documents did not reveal this distinction clearly, hence, both are used interchangeably unless specified otherwise.

[5] It is important to note that there were unavoidable overlaps between national and city policies for waste, given their capital status.

[6] Jänicke's model refers to 'capacity for environmental policy'; however, its application in most of the 30 cases (and various studies using his model) are in situations of environmental policy *reform*, especially moving from environmental protection measures to sustainable development.

[7] As explained in Jänicke (1995, 1997, 2002) and Jänicke and Weidner (1997, 2002).

policy reform in 30 developed and developing countries. These analyses range from evaluation of specific policies, like reduction in waste water emissions in the Austrian pulp and paper industry (Jänicke, 1995), to broader national profiles for environmental policy (Jänicke and Weidner, 1997; 2002). Weale (in Jänicke, 1997) studies the complex interaction of these factors in determining the capacity of Great Britain for environmental protection, focusing on pollution control. Agrawal and Yokozuka (2002), on the other hand, profile India's national capacity for environmental policy in general.

In this thesis, Jänicke's model is applied in a comparative analysis of MSW policy in Delhi and London. The reasons for choosing this model were not only that it comprehensively encapsulates diverse factors influencing environmental policy formation and that it specifically addresses the comparative position of developed and developing countries but also because, as noted above, issues of domestic waste management are identified as an area where both developed and developing countries often fall short in meeting the objectives of environmental sustainability. However, it is contended that, although Jänicke's model does indeed provide much insight in explaining MSW policy failure in the two cases of Delhi and London, it does not adequately capture the role of institutional capacity. Further, it is suggested that the issues concerning institutional capacity are not limited to the two cases and thus the thesis contributes to the broader debate about capacity for environmental policy reform. Articulating these concerns, this thesis hypothesises that: (1) where there is increasing pressure in the situative context for environmental protection in MSW policy, the institutional capacity to respond to pressure is negatively influenced by entrenched interests of dominant actors in the policy network (i.e. institutional embeddedness); (2) that institutional change aimed at decreasing institutional embeddedness would increase the institutional capacity to respond to pressure; and (3) that the more institutional embeddedness there is, the greater the need for institutional change along with policy reform to increase the possibility of *effective* policy reform. The effectiveness of policy reform, in the context of achieving environmental sustainability in MSW management, is defined here according to the waste hierarchy as pursuing the option of recycling more strongly and minimising the options of landfill and incineration.[8]

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[8] The term 'recycling' may cover just reprocessing secondary materials into new goods or more broadly it may include waste reduction, re-use, recycling and/or composting, i.e. any process which diverts waste from landfill (Thurgood, 1999). Here it is used in the broader sense. See Annex 1 for a brief outline of the different options.

Thus, the central focus of the thesis is on the role of institutional capacity in shaping MSW policy reform in the two cities. The thesis examines whether limitations in institutional capacity could explain the evidenced MSW policy failure to be environmentally sustainable in Delhi and London; and whether there is a potential need for institutional change to introduce more environmentally sustainable practices like recycling in order to ensure sustainable MSW management. In analysing institutional capacity, this thesis has also employed a key additional resource to supplement Jänicke's analysis: the policy networks approach. The institutional framework is thus investigated in terms of a network of actors, asking how this network mediates the relationship between pressure for environmental protection and MSW policy reform. Can the cities achieve *effective* MSW policy reform by pursuing institutional change along with policy reform?

The first section of this chapter defines MSW and outlines the main methods to deal with waste, including the 'waste hierarchy'. The second section locates MSW policy within the broader discourse of sustainable development and considers the key debates: regulation vs. deregulation; public sector vs. privatisation; centralisation vs. decentralisation; and political modernisation that impact on MSW policy. Further, the reasons why both developed and developing countries face the problem of waste are discussed. Section three summarises the different approaches to studying MSW policy and outlines Jänicke's model of capacity for environmental policy reform.

1.1 Of garbage and bins: defining Municipal Solid Waste

In general, wastes are classified in terms of source, type and nature. Chapter 21 of *Agenda 21* (United Nations, 1992) defines solid wastes as including all domestic refuse and non-hazardous wastes such as commercial wastes, street sweepings and construction debris.[9] Wastes may be labelled 'soft' or 'hard' by virtue of their longevity or degradability in the environment. Wastes can be liquid or solid, hazardous or non-hazardous. However, these categories may often overlap.[10]

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[9] Sometimes solid waste management in some countries includes handling human wastes such as night soil, ashes from incinerators, septic tank sludge and sludge from sewage treatment plants (*Agenda 21*, United Nations, 1992). Sewage is not included as a component of MSW here.

[10] See Thurgood (1999) and Marx (1971).

More broadly, Huysman and Baud (1994) list the average level of income, the population, social behaviour, climate, industrial pollution and the market for waste materials as factors that influence the quantities and composition of waste. There are differences in the source-based definitions of waste used in India and the United Kingdom (UK). In India, municipal waste includes commercial (from local businesses) and residential waste generated by a community (CPCB, 2000).[11] In the UK, parks and gardens waste, beach cleansing waste, rubble, abandoned vehicles and waste resulting from the clearance of fly-tipped materials, along with household waste, comprises municipal waste (DEFRA, 2002; 2004).[12] Municipal Solid Waste, in this thesis, is defined as waste generated by households, including waste from civic amenity sites and waste collected for recycling or composting.[13] The research concentrates on urban households only.[14]

MSW is composed of a variety of materials. Paper, plastics, cardboards and other packaging materials, bottles, drink cans, fabric (clothes), organic waste (biodegradables, like vegetable and garden waste), electronic goods etc. all comprise waste.[15] There is a need for careful consideration of disposal options because these materials have both production and disposal implications. For instance, plastics are primarily produced from non-renewable oil and gas, involve four times the energy than manufacturing glass, have greater pollution emissions, and are replacing materials that can be much more easily recycled, such as glass and metals (Gandy, 1993). The Waste Electrical and Electronic Equipment Directive of the EU addresses concerns regarding production and disposal implications when it restricts the use of certain hazardous substances (heavy metals like lead, mercury, cadmium) in electrical and electronic equipment, and makes producers of these equipment responsible for taking back and recycling them by July 2006.[16] Wastes also generate greenhouse gases, like carbon dioxide and methane, raising

[11] Overall, the residential sector contributes most to the generation of solid waste in the city (Ghose, 1998).
[12] According to Waste Watch (1999), the UK government distinguishes waste based on collection whereas the European Union's (EU) distinction is based on composition. Fly tipping is the act of dumping rubbish illegally. Defined as waste in the wrong place caused by human agency, littering is a huge issue in both India and the UK. However, it is treated as a peripheral issue in this research. See ENCAMS (2003) for details about costs and the law on both issues in the UK.
[13] Available statistics for 'MSW' were used to compare the cases, despite the differences in the definitions of MSW in India and the UK.
[14] The term 'municipal' refers to urban local government.
[15] Biodegradable waste is defined as waste that can undergo anaerobic or aerobic decomposition (EU Landfill Directive 99/31/EC).
[16] European Commission – Directives 2002/95/EC and 2002/96/EC. This also complements other EU measures on landfill and incineration.

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concerns of climate change.[17] In addition, waste can be highly mobile and commute indiscriminately between land, air and water.[18]

Strategies to manage waste vary. There is increasing acceptance that integrated waste management, implying a combination of options, but based on the waste hierarchy is regarded as environmentally sustainable.[19] Constraints, such as pressures on land, decreasing landfill capacity, transport issues, existing technology and demographic considerations, like the density of population around potential landfill (and consequent health impacts); noise levels and NIMBYism can influence the strategy adopted.[20] Besides, there are diverse aspects associated with providing waste services, making it a complex and often expensive undertaking for the government. It includes collection, handling (encompassing health and safety), transportation and disposal of waste, in addition to issues like public-private partnerships in service delivery, finance and staffing. In sum, each option of waste management requires careful consideration of various factors.[21]

By contrast, some authors question the viability, especially economic feasibility, of sustainable approaches to waste management in general and the waste hierarchy in particular. Some dispute the contention that certain resources possess inherent values that exceed their apparent market value. At another level, there are disputes of fact and efficacy. Wiseman (1992) states that landfills are an environmentally sound and cost-effective means of disposing MSW. Further, he argues that recycling paper will not save trees, but only divert the forests to agricultural uses, and that recycling programmes are being operated at levels in excess of the optimum, which

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[17] See DEFRA 'Climate change and Waste Management: The Link' for details (www.defra.gov.uk/environment/waste/wip/newtech/advice.htm accessed 20 March 2003). One tonne of biodegradable waste produces between 200-400m3 of landfill gas; landfill gas methane emissions contributed around 25% of total UK methane emissions in 2001 and about 2% of greenhouse gas emissions (DEFRA). In 1997, landfill emissions were India's third largest greenhouse gas contributors, equivalent to burning 11.6mt of coal (Gupta et al., 1998).
[18] See Marx (1971) and Thurgood (1999).
[19] See Thurgood (1999). It is linked to sustainability because it balances what is economically/technologically feasible with what is environmentally desirable.
[20] For supporters of landfill, like Wiseman (1992), the political difficulties encountered in siting new landfills are the crux of the MSW disposal problem. There is a huge body of literature on the broader aspect of planning for sustainability, for instance, Kenny and Meadowcroft (1999), Gandy (1994), Davoudi (2001a). NIMBYism represents 'Not In My Back Yard' where local residents oppose plans to locate waste facilities in close proximity to their properties/neighbourhoods.
[21] See authors like Isaac and Patel (1999), Curzio et al. (1994), Haynes and El-Hakin (1979) for a detailed analysis of technological considerations for waste management. This thesis restricts itself to analysing the reasons behind the options chosen in Delhi and London, and only makes general reference to the technological debates.

consequently wastes society's resources.[22] However, Wiseman focuses exclusively on the economics of waste management to the neglect of other dimensions like the environmental issues (for instance, groundwater pollution); he also fails to consider the *growing* levels of waste. This thesis supports the view that environmental sustainability is critical to ensure sustainable development and, consequently that sustainable waste management is a worthwhile goal to pursue.

The following section briefly introduces the concept of sustainable development and some of the ` debates surrounding it. It profiles the four main explanations of environmental policy failure, namely, market failure, property rights failure, ethical failure and the failure of the state or intervention failure. In addition, it explains how MSW policy offers a good example of strategies to achieve sustainable development. While mapping the diverse implications of MSW, it also makes general connections with the associated broad theoretical debates, which provide a background context to the research. It also clarifies that cities in both developed and developing countries have environmental problems, like MSW that require attention.[23]

1.2 Sustainable development: is Municipal Solid Waste management a good showcase?

Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Commission, 1987).[24] According to Doyle and McEachern (1998), sustainable development is thus in itself not a radical environmental or green concept, since it accepts dominance of human welfare over the needs of the environment *and* the prime need for economic growth; and it conceives the relationship between humans and nature in terms of the use of the environment by and for humans.[25] Similarly, the European Community's Fifth Action Programme, *Towards*

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[22] He regards these views (for recycling, in particular, that favour the use of highly valued inputs of labour in order to avoid using lesser valued amounts of land or natural resources) based on other than economic considerations as a serious misreading of the facts.

[23] Only the environmental issues resulting from different levels of economic growth are highlighted here, without going into a detailed analysis, for instance, of the 'vicious circle of poverty and environment' (poverty degrades the environment which strengthens the grip of poverty, Pearson and Pryor, 1978). Cities are defined loosely as urbanised conglomerations.

[24] The World Commission on the Environment and Development (1987) is also known as Brundtland Commission.

[25] For Haughton (1994) the concept has three principles at heart. Firstly, inter-generational equity: in considering any human activity, the effects on the ability of future generations to meet their needs and aspirations must be considered. Secondly, social justice: where poverty is seen as a prime cause of

Sustainability (1992), states that sustainable development 'is intended to reflect a policy and strategy for continued economic and social development without detriment to the environment and the natural resources on the quality of which continued human activity and further development depend'. The World Development Report (1992) states that 'sustainable development is development that lasts'. Dwivedi (1997) notes that the Brundtland definition contains two key concepts: need (in particular the essential needs of the world's poor, to which over-riding priority should be given) and the limitations imposed by the state of technology and social organisation on the environment's ability to meet the present and future needs. For him, as for most writers on the subject, the concept of sustainable development implies a fusion of two imperatives: the right to develop, and the need to sustain the environment. However, as Dwivedi maintains, it is not clear who – North or South – will determine the 'needs' of present generations, or how the nature of future needs will be ascertained.

What is important to stress is that, even as a non-radical commitment, moving towards sustainable development has consequences for many aspects of individual lifestyles and patterns of behaviour and for the responsibilities of local, national and international governments (Williams and Haughton, 1994). As Blowers (1997, p. 846) puts it sustainable development 'is at once a scientific principle, a political goal, a social practice and a moral guideline'. Given this wide spectrum of interpretation, sustainable development has not only been difficult to understand but also difficult to implement.[26]

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degradation, and more even distribution of resources is required to be exercised, taking account of basic needs and common aspirations. Finally, transfrontier responsibility: at the broad level, stewardship of the global environment is required in particular the full costs of environmental impacts need to be incorporated into market pricing and fiscal mechanisms.

[26] In particular, it is the relationship between economy/society and the environment that has become central to many approaches. The three main perspectives with a focus on this relationship are ecological modernisation, risk society and deep ecology. Ecological modernisation places firm belief in technological advances that would allow both economic development and conservation of the environment by reducing consumption of resources through increased efficiency. Jänicke is strongly associated with the ecological modernisation approach. In some circles, see Davoudi (2000a), he is credited with initiating ecological modernisation. Risk society, introduced by Ulrich Beck in the early 1990s, 'suggests that there is an irreconcilable conflict between the contemporary mode of production and ecological needs', and that protection of ecosystems has priority over any other demands (Davoudi, 2000a, p. 128-129). Deep ecology based on a belief in the sacredness of nature is a recent philosophy that calls for a profound shift in human attitudes and behaviour towards voluntary simplicity and intimate contact with nature (Cunningham *et al.*, 1999; Church, 1999). It seeks fundamental societal change to improve the environment and does not recognise any need to make concessions for economic growth or development. These three perspectives recommend different strategies to decrease environmental degradation. See Blowers (1997) and Davoudi (2000a) for a good comparison of ecological modernisation and the risk society approach. In reference to integration of development and environment agendas, Blowers (1997, p. 866) maintains that, though both aim for this integration, neither 'has much to say about the form of institutional adaptation or change required to inaugurate sustainable development'. See Dryzek *et al.* (2002) who study ecological

The management of Municipal Solid Waste: towards an environmental policy

MSW policy has gradually transformed from a policy of urban service provision to one of environmental policy.[27] As the quote from United Nations (Chapter 21, *Agenda 21*, 1992) at the start of this chapter states, environmentally sound waste management must go beyond the mere safe disposal or recovery of wastes that are generated, and seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption.[28] This policy of resource management has ecological, economic, political and social implications stemming from the production, consumption and disposal aspects of waste. These implications make it a good example where the broad objectives of sustainable development or the integration of economic development and environment in particular, could be achieved.

Of particular interest to this investigation is the understanding of environmental policy failure. The four main arguments include: market failure, property rights failure, ethical failure and the failure of the state or intervention failure. In brief, market failure refers to market imperfections that do not reflect the true environmental costs of production and consumption. Property rights failure analysis sees the problem as social arrangements without clear ownership rights to environmental goods which are treated as open access resources resulting in, often, unaccountable over-exploitation. The ethical failure stems from ecocentric arguments which claim that ecological systems and processes have rights. Ethical failure occurs because existing social and economic systems do not produce a fair distribution of welfare over space and time. State failure refers to the inability of the state to make urgent economic and political decisions to cope with the increasing need for environmental protection measures (Jänicke, 1990).[29] For the purposes of this research, market failure and state failure arguments are given most consideration.

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modernisation in the context of the USA, Norway, Germany and the UK. Also see Fisher and Freudenburg (2001).

[27] See the *Green Capital* report (GLA, 2003b) of the Mayor of London, and various publications by India's Ministry of Environment and Forests (1997, 1998, 2000); also corroborated by the interviews in the field.

[28] *Agenda 21* is the programme of action for the 21st century developed by the United Nations Conference on Environment and Development (or the Earth Summit held in Rio de Janeiro) in 1992. The UNDP consequently embarked on a major international effort to promote environmental capacity building called Capacity 21 (now Cap2015) designed to support the professional and institutional development needs identified in *Agenda 21* (Keohane and Levy, 1996).

[29] Here the term 'state' (often interchanged with the term 'government') implies all public organisations comprising government. However, where relevant, a distinction between elected political actors and administrative actors is made.

In posing questions about policy failure, it is necessary to consider the criteria for measuring success of a policy. For Kickert *et al.* (1997, p. 9) a 'successful criterion for policy is the realisation of collective action in order to establish a common purpose or avert common threats'.[30] Gunningham (1998) cites a report by the Australian Manufacturing Council Best Practice Environmental Regulation (1993) that lists ten criteria: certainty, communication, consultation, cost-effectiveness, efficiency, flexibility, integrity, practicality, responsibility and transparency. [31] While these criteria depend on the goal to be accomplished to a large extent, it is vital that the policy includes re-evaluative features, and the possibility of reform. Jänicke (1997) includes the criteria of lasting effect, bonus effect and efficiency. In this research, the extent of environmental sustainability achieved in MSW policy is the measure of success, i.e. pursuing more recycling and less of landfill. It is this goal that makes MSW policy reform 'effective'. As with sustainable development, the MSW policy requires consideration of various debates which are explored in the following sub-sections.

Ecological implications and the regulation vs. deregulation debate

Frequently, recourse is made to the general environmental media (land, air, water) to absorb waste. Often, waste from either production or consumption activities enters the environment and impairs beneficial use of the resources (ambient air pollutants, acid run off from mine tailing, downstream siltation of irrigation channels from upstream erosion, etc.).[32] As Holmberg (1992) emphasises, the availability of these sink functions sets limits to growth, and frequently these open-access resources are grossly misused.[33] This misuse is heightened further because the costs of environmental deterioration are treated as an externality by firms or individuals engaged in economic activity, with the costs borne elsewhere in society (Atkinson *et al.*, 1999). Thus, problems of pollution can occur in a different location/media from the original source of the waste. The increased interest in the waste hierarchy and on specific materials in the domestic waste stream, such as, electronic waste, plastics and batteries, is an attempt to counteract this occurrence. Disposing of specific waste material most appropriately (with least environmental

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[30] See, for instance, Nagel (1991) who lists net benefits, effectiveness (extent to which a policy achieves its intended goals), efficiency, equality, public participation, freedom (of minority viewpoints to convince the majority), predictability and procedural fairness (application of policy in a manner that allows the deserving to defend themselves against accusations of being undeserving) as various goals of public policy.

[31] Some, like de Beus (1991), require optimal environmental policy to have transparent efficiency and equity dimensions.

[32] See Atkinson *et al.* (1999).

[33] Also see Cobb and Cobb (1994).

damage) and identifying production, consumption and disposal cycles as possible avenues for policy intervention are encouraging trends, which turns the discussion to the regulation debate.[34]

The extent and mode of regulation pursued in and by a state is influenced by the nature of governance.[35] This study is done in the general context of a reappraisal of the nature of contemporary government wherein traditional forms of government are seen as in transition, moving away from and blurring the old firm boundary between state and outside organisations (Rydin, 1998; Gouldson, 2002). It involves moving away from regulation in the form of the introduction, application and enforcement of rules, typically by a public agency, commonly in the form of rule-based command and control regulation.[36] The command and control approach is being replaced by broader, more indirect, forms of governance (Rydin, 1998; Gouldson, 2002) whose success is a product of the prevailing inter-relationships between the various networks of actors, including those involved in monitoring and enforcement.[37] The shift towards these new, more indirect, forms of governance is closely related to the view that regulation, while still imposing restrictions on the undesirable aspects of private activity through hierarchical control, increasingly seeks to enable and facilitate more desirable forms of private activity through more flexible mechanisms such as public-private partnerships or cooperation.[38] This may occur in both policy formulation and policy implementation, though the distinction between the two is rarely as clear-cut as presented in recent studies.[39] Gunningham and Grabosky (1998, p. 9) maintain that command and control 'can only be overcome by invoking a broader vision of regulation and the pursuit of broader policy mixes, utilising combinations of instruments and actors and taking advantage of the synergies and complementarities between them'. In addition, they suggest designing efficient and effective 'optimal' policy mixes, which they term 'smart' regulation. On the other hand, authors like Ayres and Braithwaite (1992) try to transcend the classic regulation

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[34] Classically, regulation was initially posed in terms of state 'interference' in the market place. For some, like Kraan (1991), it is an infringement for the sake of interests that are supposed to require public protection.

[35] See Jha and Raghupathi (1995). Governance, in its new form, can roughly be described as directed influence of social processes; it covers all kinds of guidance mechanisms which are connected with public policy processes and is not restricted to public actors (Kickert *et al.*, 1997).

[36] See Gouldson (2002).

[37] Cohen (1999) studies the monitoring and enforcement aspects of environmental policy, and identifies two bodies of reason why firms comply with the law: a) incorporating social norms, community pressure and firm reputation, and b) opening up the firm's 'black box' and incorporating incentives within the organisation. These, he reiterates, require an understanding of diverse literature like corporate governance, principal-agency theory and economic models of social norms.

[38] See Gouldson (2002), Afsah *et al.* (1996), Pearson and Pryor (1978).

[39] Smith (1997) defines a policy process as the series of patterns of related decisions to which many circumstances and personal, group and organisational influences have contributed, and involves the stages of policy issue, policy formulation and policy implementation.

vs. deregulation debate and argue for 'responsive regulation', that is enforced self-regulation (regulatees develop their own compliance programme which is then subject to approval by regulatory authorities) and 'regulatory republicanism' (where enlightened private sector and the public, through deliberative and constructive participation, contribute productively to the regulatory process).

Further, as Gouldson (2002) states, regulators, when faced with limited resources, can use their discretion to find ways of operationalising regulations within practice constraints. Discretion can be exercised both by the implementing agency as a corporate body and by the 'street-level bureaucrats' within the agency who enact policy on a day-to-day basis (Lipsky, 1980).[40] It can be exercised in the way the key principles and objectives of a regulation are interpreted, prioritised and delivered, which can influence the provision of support and the level of sanction applied in cases of non-compliance (Gouldson, 2002). It can also allow actors to change the substance of regulation or the style of its delivery. Discretionary elements in the implementation process, therefore, enable the potential for actors to alter their strategies or styles in response to the conditions or incentives that they encounter. The exercise of discretion in the implementation process may generate some benefits but it can also reduce the democratic basis for decision-making, the accountability of the regulatory agency and the rationality, transparency, predictability, consistency and fairness of regulatory decision-making (Baldwin, 1996). For Hutter (1997) both consensual and conflict theories accept that implementation is an inherently negotiated process and that the practical substance of environmental regulation is determined by the nature of interaction between regulators, the targets of regulation and in some, but not all cases, other third parties. This highlights the need for a responsive approach that involves various public interest groups (Ayres and Braithwaite, 1992) in the policy process.[41] Though they have considerable faith in cooperation, flexibility and the exercise of discretion in the implementation and enforcement process, they are aware of the possibility of corruption and capture, and suggest empowerment and wider involvement of public interest groups in the regulatory process as a possible remedy. As Gouldson (2002, p. 15) maintains 'institutional contexts, incentive structures and power relations therefore become significant factors in the regulatory decision-making process.' This is closely related to the concept of network management supported by Kickert *et al.* (1997). For them, network management implies the management of interaction processes amongst the actors within networks or changing the structural and cultural characteristics of the

[40] See Bennis (1993) for a good list of the dimensions of bureaucracy and its criticisms.
[41] At a broader level, these groups include civil society/non-governmental organisations.

network, which could be the way to improve the conditions for collective action. Thus, according to them, applying the approach to questions of public policy-making and governance opens new perspectives on governmental steering. Such new perspectives can have significant impact in the area of sustainable development.

Economic implications and the public sector vs. privatisation debate

The influence of economics has intensified in areas like waste management mainly because of its multi-sectoral implications.[42] There are three main aspects of this influence: firstly, as mentioned earlier, the nature and composition of waste generated has been linked with income.[43] In addition, the economic orientation of countries also impacts on urban service provision, like waste services. The new economic policies of the Government of India in the 1990s, for instance, aimed at stepping up economic growth and improving market efficiency and competitiveness. This had significant repercussions for all the different sectors of the economy, placing heavy demands on all types of urban infrastructure.[44]

Secondly, efforts to deal with waste include strategies to promote sustainable production and consumption patterns.[45] Industries frequently face calls for Corporate Social Responsibility (CSR) that includes adoption of environmental technologies. The loss of employment (in the packaging industry, for example) is repeatedly cited as one reason for not adopting sustainable waste management practices like sustainable production methods and recycling. Various reports and studies also discuss the bottlenecks in developing markets for recyclables.[46] The main bottlenecks listed are economic: high costs of processing recyclables; costs of collection of recyclables; uncertainty in supply of, and contamination of, recyclables with other waste. These factors deter firms from investing in technologies using recyclables.[47] However, recent and a growing body of research (Gandy, 1993; Waste Watch, 1999) shows that there is a huge potential for job *creation* in the waste management sector, including recycling, although recycling markets in particular are

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[42] See for instance, Fullerton and Kinnaman (2002) for detailed economic analysis of municipal waste and recycling behaviour; Saha and Rajgopal (2001) for the impact of urbanisation on waste generation and disposal.

[43] See World Resources Institute *et al.* (1996).

[44] See Mathur (1997), Jha and Raghupathi (1995), Viswas (1996), Joardar (1998).

[45] The choice and behaviour of consumers and consumer goods industries are the most critical variables for the development of MSW (Curzio *et al.*, 1994) and its management.

[46] Fullerton and Kinnaman (2002), AEA Technology (1999).

[47] Letsrecycle.com *Local Authorities News: Councils to face restrictions in wake of paper contamination fears* (11 March 2002) (www.letsrecycle.com/localauth/news.jsp?story=1089 accessed 16 August 2002).

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often nascent (for example, in London) and/or employ environmentally harmful and unsustainable technologies (for example, in Delhi). In addition, supportive economic instruments, like the landfill tax, could encourage recycling by making it more economically feasible.[48]

Thirdly, waste collection and disposal services typically account for a huge share of the budgets of local governments, usually responsible for waste services in cities.[49] Specifically, waste collection involves more expenditure than waste disposal (Gandy, 1993) as it requires investment in capital equipment, like transport vehicles, transfer stations, and in operational costs, such as labour, including health and safety issues for the staff. Local governments collect tax (council tax in the UK and property tax in India) from households as a means of direct revenue. Also, there are national funds available, sometimes competitively, for sustainable waste management, like the Recycling Fund in the UK.

The growing inclination towards privatisation of waste services in both the cities redefines the roles of the state and the private sector in MSW management. The debate has ranged from rolling back the state entirely to bringing it back to its former glory. Displacing these traditional alternatives, the debate has also raised, with increasing frequency, the question of the *nature* of its role. Some authors, like Osborne and Gaebler (1992) move beyond the market-state and the classic regulation-deregulation dichotomy to offer a third option of transforming how governments can labour against political and fiscal constraints to provide services. The question, according to them, is not one of how much government we have but of what kind of government, reiterating that better government is the goal. Public policy of any significance is the result of interactions between public and private actors, and is made and implemented in networks of interdependent actors (Kickert et al., 1997). Certainly, as Kickert et al. (1997) confirm, new policy problems, such as environmental pollution, call for government involvement.[50]

In the hope of cutting the costs of solid waste management while improving services, many cities are experimenting with public-private partnerships and informal, community-based approaches (World Resources Institute et al., 1996), because there are distinct advantages to bringing in the

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[48] Recycling markets are complex and need careful consideration before introducing new legislation especially using economic instruments (see AEA Technology, 1999).
[49] Establishment expenses which mainly include salary of staff and wages of labour, account for the maximum share of total revenue expenses of Urban Local Bodies (Bagchi, 1999).
[50] Also see Tullock (1991) who maintains that the choice between market and government institutions, usually, will fall on the side of government but we must not expect too much from it.

private sector, in service delivery in particular.[51] As discussed in the earlier section on regulation, there are different ways of involving the private sector in service provision.[52] The Private Finance Initiative in London is a good example. Contracting out is assumed to improve efficiency but with 'Best Value'.[53] According to the National Institute of Urban Affairs (NIUA, 1997), there could be 15-70% of cost savings achieved in India through contracting out different services; most of the examples can be found in the management of solid waste.[54] The privatisation drive in Delhi is part of this effort. In 2003, tenders were invited (finalised in 2004) for the collection and disposal of Delhi's waste.[55] This is also in line with the central government understanding that inviting tenders is the 'first step towards privatisation pending legal reforms and institutions of a regulatory framework' (NIUA, 1998a, p. 194). Occasionally, the 'private' sector includes community organisations and NGOs, and in some cases, the users of services, who actively engage in its provision. For example, Ealing Community Transport (ECT) is the largest community organisation responsible for recycling services in six London boroughs. Nevertheless, the state is still regarded as the main service provider, even though the actual delivery is contracted out, as the state retains overall responsibility.

However, contracting out has its pitfalls. A UN Working Paper highlights the dangers associated with private sector involvement, especially with an inefficiently run public service, as is often the case in waste collection.[56] The service is susceptible to becoming a private monopoly over which the municipal council has little control. The use of competitive tendering, retaining several different companies for the service needed and monitoring of contractor's performance, are some ways to overcome the pitfalls. As one UK Member of Parliament summarised, 'there are instances of good public service provision and bad private initiatives, and it is not a question of

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[51] See Sundakov and Yeabsley (1999).

[52] For instance, contracting out, Build-Operate-Transfer, Build-Own-Operate-Transfer, Franchise, Concession, Leasing, Cooperatives and Vouchers (provided to certain groups to purchase services from the private sector). See Mathur (1997), NIUA (1997) and Jha and Raghupathi (1995) for details.

[53] 'Best Value' is the local authorities' duty of continuous improvement as set by the Local Government Act 1999 (Office of the Deputy PM, UK – www.bvpi.gov.uk/pages/glossary.asp accessed 18 November 2003).

[54] The existing legislation on private sector involvement permits the use of 'any person' for delivering specific services, removing any legal constraints on involving the private or voluntary sector in the service provision role of local government (NIUA, 1997).

[55] Nationally, the New Economic policy calls upon municipal governments 'to involve private initiatives in provision of municipal services with the municipal governments playing a facilitating role' (Jha and Raghupathi 1995, p. 118-119).

[56] Commission on Sustainable Development (1996).

getting efficiency at least cost but that quality should be the necessary consideration' [15].[57]

Besides, the under-pricing of waste disposal (Wiseman, 1992) and collection services and the inability to introduce the system of variable charging or similar initiatives to minimise waste (DEFRA, 1998; Stanton, 1995) highlight the difficulties of managing the complexities of MSW management.

It is important to point out that, while the relationship between private and public spheres has evolved, there is also a state of flux *within* the two sectors. Administrative reforms have been initiated in various countries in an attempt to streamline resources towards efficiency. This has largely taken two overlapping approaches: first, to clearly demarcate political and administrative accountability and second, to increase political control over the bureaucracy, i.e. administration (Pierre, 1995). Pierre asserts that while these appear mutually inconsistent, they may in fact reflect a general desire among the elected politicians to increase their broad influence over the bureaucracy while at the same time avoiding responsibility for the bureaucrats' actions. My field work in Delhi found that Pierre's analysis held true and that the resulting high level of uncertainty caused huge resentment and an 'attitude of appeasement' amongst the bureaucrats towards the political elites. Within the private sector, increasing calls for CSR along with a spate of regulations, resulting from public interest litigation in India and the European Union Directives applicable in the UK, has fragmented the waste industry along various waste management strategies. For instance, those focusing on waste disposal methods of landfill, recycling, incineration.

Political implications and centralisation vs. decentralisation

The policy area of waste also highlights other political-administrative issues, like the central-local government relations. The national governments of India and the UK are empowered to legislate on environmental issues, like waste management, while the implementation is left to local governments. For instance, in complying with various EU Directives, the UK government usually places the onus on local authorities to deliver.[58] The Hazardous Wastes Management Rules Act (1989) in India contained some of the provisions of the Basel Convention.[59] It is the State

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[57] Also see Mathur (1997), NIUA (1997), Commission on Sustainable Development (1996). Interviewee no. 15 in the UK interview index (Annex 3b).
[58] Local and national government officials interviewed in London.
[59] The Indian government eventually ratified the Basel Convention (1989) on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in 1992.

Pollution Control Boards throughout India that are required to implement these Rules. While the national governments endeavour to provide resources (especially financial) to ensure implementation, they are often inadequate.

In this context, the debate about centralisation vs. decentralisation is of interest. Decentralisation is defined as the assignment of fiscal, political and administrative responsibilities to lower levels of government (Litvack et al., 1998), with centralisation being the opposite. Numerous studies list the significance and repercussions of decentralisation on resource mobilisation and its allocation, service delivery and the assurance of local accountability and equity.[60] Often a distinction is made between local government as a unit of government, as service provider and as agent of the higher level of government.[61] Municipal governments, located close to the citizenry, derive their strength from the democratic process, allowing the local community to participate in deliberations for finding appropriate local solutions (Jha, 1996). However, in many cases, local governments lack the ability to manage the process of urban development.

A major constraint on metropolitan (city) local governance has been political (although not party political): the unwillingness of existing central authorities to relinquish powers (Rondinelli, 1984).[62] Quite frequently central governments tend to provide resources to create local agencies under their own direct control (Mohan, 1996).[63] Central Development Authorities are usually made responsible for capital investment works and planning, relegating the urban local bodies to maintenance tasks, like waste management. In addition, the local governments are not only frequently stigmatised as inefficient but are treated as miniaturised battlegrounds for national scale political issues (Anand, 1998; Biswas, 1982; Mohan, 1996). For instance, in India, two national commissions (the Sarkaria Commission and the Balkrishnan Committee) recommended that the functions of the local government in Delhi be brought under the control of the state Legislative Assembly. However, the Government of India did not follow the recommendation on the grounds that the directly elected local councillors function independently of both the state and national governments in their areas of jurisdiction. Furthermore, the 74th Amendment (1992) to

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[60] See for instance, Anand (1998), Biswas (1982), Jha and Raghupathi (1995), Marvin and Guy (1999), Litvack et al. (1998), NIUA (1998a) and Atkinson et al. (1999).

[61] See Anand (1998), NIUA (1998a), Estache and Martimort (1999).

[62] There is a tendency to regard 'municipal matters [as] too important to be left to municipal councillors only' (Biswas, 1982, p. 16).

[63] Biswas (1982) states that the comparative cost of creating an urban Development Authority and facilitating it with necessary resources, manpower and commitment vis-à-vis the same for urban local government, has not really been worked out.

the Indian Constitution, which aims to strengthen local self-government in cities and seeks to transform the structure of urban services, cannot be realised without the support of the national and state governments (Mohanty, 1997; Viswas, 1996).

In the UK, Marvin and Guy (1999) reason that *Agenda 21* and environmentalism have been embraced, largely as a response to the vacuum created by shifts in local governance resulting from increasing centralisation. Hence, local authorities sought to carve out a new niche by adopting and redefining environmental issues for their own purposes.[64] Therefore, it is important to match fiscal, political and administrative arrangements to achieve the potential benefits of decentralisation (Litvack *et al.*, 1998), because the responsibility for the urban environment cannot rest solely with one tier of government, either local or national.[65]

Social implications (including health) and political modernisation

Waste has huge implications for public health, especially for the poor. Waste not collected and properly disposed of contributes to the pollution of the entire environment: air, water and soil (Mathur, 1997). The plague outbreak in 1994 in Surat (India) was a consequence of the mismanagement of waste. Uncontrolled productivity and population growth generates waste loads that turn life-support systems into a dangerous dump (Wesley, 1971), raising considerable health concerns.[66] Furthermore, better levels of waste services in rich neighbourhoods, in both Delhi and London, raises issues of equity in service provision.[67]

Interestingly, the current research found MSW policy not to be influenced by party ideologies in either India or the UK. Rather it was environmental disasters or international obligations that often provided a common platform.[68] The UK's Labour government claimed to be a 'green government' but the fiasco of not including the then Environment Minister, Michael Meacher, in the original list of UK delegates attending the Johannesburg Earth Summit in 2002 clearly

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[64] Also, Marvin and Guy state that financial stringency measures introduced by central government in 1976 ended the era of apparent bargaining with local governmental associations. As a result, the structure of local government, privatisation of service delivery as well as key issues in education and transport, were made non-negotiable (Page, 1992).

[65] Also see Estache and Martimort (1999) for ways to optimally utilise decentralised structures.

[66] Some cities have experienced epidemics due to poor waste management, resulting in substantial human and economic losses (Commission on Sustainable Development, 2002). Also see Singh (2001a) and Mathur (1997).

[67] Various interviewees (government and NGOs) in both the cities.

[68] Various interviews (mainly government and NGOs) in both the cities.

undermined the credibility of this claim. In India, the position on environmental issues *per se* adopted by the two main political parties, the Congress Party and the Bharatiya Janata Party (BJP) is *ad hoc* and reactive. However, there are a few related areas where environmental policy can be traced *indirectly* to party ideologies. For instance, the Private Finance Initiative in the UK was a direct consequence of the Conservative Party's general drive to 'contract out', which allowed for more private sector involvement in waste services.

Questions of democracy and participative democracy are important for environmental decision-making. Jänicke relates the concept of capacity for environmental policy reform to political development or modernisation. Active participation in political processes increases the possibility for legislators to ascertain the priorities of the populace. The social issues also include public perceptions of society's role in waste management and levels of environmental awareness.[69] These impact on schemes, like the separation of waste for collection and recycling, that require active participation from households. However, there can sometimes be disunity and contradictions in the popular voices.[70] For instance, the planning process in the UK consults people on individual cases, such as demolition of local buildings and parks renovation. While people can often be clear in expressing their displeasure/discontent with plans to build incinerators/recycling facilities in their neighbourhood, they remain relatively unclear and consequently not so vocal about *how* waste should otherwise be disposed of, and the role of their lifestyle (i.e. consumption decisions), in generating waste. For some like Ritzen *et al.* (2000) social cohesion, which they define as the inclusiveness of a country's communities, is essential for generating the trust needed to implement reforms: citizens have to trust that the short-term losses that inevitably arise from reform will be more than offset by the long term gains.[71] In general, participative democracy would enable more responsive approaches to environmental protection measures.

Waste: a problem for the North and the South

The prevailing international practices of environmental management of the world's resources exhibit discrepancies and divergent levels of commitment from developed and developing nations, as evidenced at the Earth Summits.[72] Though environmentalism has gained strength at

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[69] Ecofeminism and the implications of the environment on gender relations are not explored here.
[70] See Bentley and Stedman-Jones (2000), Dasgupta and Wheeler (1996).
[71] Also discussed by Jänicke (1997), see the following section.
[72] See Mol (1995) and Gandy (1993) for different interpretations of the rise of environmentalism.

various points over the last few decades, overall trends with respect to sustainable development are worse than they were in the early 1990s (United Nations, 1997). The Brundtland Report of 1987, while known more for its definition of sustainable development, *also* aimed to secure global equity by committing more resources to poorer nations and encouraging their economic growth.

The North is frequently blamed for the deteriorated environmental conditions of the world, with international calls for it to provide the technology and/or finance for the solutions necessary to counter the environmental malaise (Keohane and Levy, 1996; Mannion and Bowlby, 1996).[73] However, aid from developed countries in fact often increases North-South inequity. Loans and interest have to be repaid and the aid usually sustains Northern construction contractors at the expense of the South's environment and poor communities, as well as promoting the exploitation and destruction of natural resources (Chatterjee and Finger, 1994).[74] In addition, the developing countries of Africa and Asia are also treated as dumping grounds for the waste from the North.[75]

The causes of environmental degradation in the North and the South, however, often differ.[76] Developed countries subject the environment to the 'effluents of affluence' (Pearson and Pryor, 1978), including growing levels of waste. According to the World Resources Institute *et al.* (1996), with increased wealth, the composition of wastes changes from primarily biodegradable organic materials to plastics and other synthetic materials that take much longer to decompose. Together with increasing levels of waste generation, waste management becomes a major challenge for city governments of the North. The northern cities are beset with environmental problems which require an urgent revision of the way these cities are managed (Atkinson and Davila, 1999). For Reed (1992), mismanagement and degradation of the environment are associated with both poverty and growth, because of the institutional shortcomings that encourage

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[73] Carraro and Filar (1995) study the North-South debate in a game theoretic model. See also Chatterjee and Finger (1994) who assert that the North-South conflict stems from the fact that both share exactly the same aspirations and ideology of industrial development. Others, like Copeland and Taylor (1994) focus on these relations in the context of international trade. See also Harris (2000) for a good account of the politics behind conservation issues, and Carraro and Siniscalco (1992) for summary of the international dimension of environmental policy.

[74] They quote the British Overseas Development Agency's figures that, for every pound the government puts into multilateral banks, it makes a 20% profit. For example, in 1985, Britain 'gave' Southern countries £531 million but, on the back of this 'aid', British companies won £637.2 million in contracts.

[75] See Vidal (2004). Also see Ganjoo (2005) for a study of similar traffic from the US.

[76] For some authors like Pearson and Pryor (1978) environmental differences or similarities between the North and South are based as much on regional climatic and geologic characteristics as on regional economic and demographic structures. For them, rich countries have greater waste disposal problems than poor countries.

open access to resources and the negative externalities, which is the main stay of the property rights failure and market failure mentioned earlier. At the same time, however, according to Jänicke and Weidner (1997, p. 299), 'wealthier nations both need and can afford more environmental protection'.[77]

Though waste disposal problems in these countries have increased the desirability of recycling and resource recovery; there is increasing evidence that, a number of northern cities are more committed to economic development than environmental and social issues.[78] Accumulated pollution in their environments is higher in comparison to developing countries, with 'success usually restricted to certain specific forms of pollution while many relevant environmental problems remain unresolved' (Jänicke and Weidner, 1997, p. 300). Although the relationship between affluence and environmentalism is significant, it can also be contradictory.[79]

Significant concern has been expressed regarding the link between poverty and environmental sustainability as the cause and consequence of environmental degradation in the South. Atkinson et al. (1999) maintain that, with respect to the urban environment, the urgency of environmental sustainability appears to be a luxury that Southerners cannot afford until they have overcome poverty.[80] Coupled with increasing population pressure, rapid urbanisation and mismanagement of scarce resources, poverty accentuates environmental degradation and its impacts.[81] Various

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[77] Weidner (2002, p. 1364) maintains that 'economically advanced countries have often achieved impressive environmental improvements....[but]....certain problems have increased rather than abated....Even environmental front-runners display major shortcomings if, from the perspective of concepts such as ecological modernisation and sustainable development, evaluation takes account of general resource consumption, biodiversity, and inter- and intra-generational environmental equity and equality'.

[78] Pearson and Pryor (1978). According to Atkinson et al. (1999), the evidence in Europe is that commitment to economic development is taking priority over environmental, natural hazards and social issues at the local level. For them, this jostling for economic development is at least partly a consequence of the enhanced economic competition resulting from European integration. See also Elster (1997).

[79] See also Cooper (cit. in Atkinson et al., 1999) who demonstrates this when comparing recycling options initiated in Copenhagen and the poverty of the former Communist countries. Further, he states that the correlation between higher per capita Gross Domestic Product (GDP) and rising waste generation levels is hard to break.

[80] Pearson and Pryor (1978), putting environmental concerns under the umbrella of poverty diverts attention from the real and pressing issues of preserving the productivity of environmental resources and minimising the adverse environmental consequences of growth, i.e. the full sense of sustainability. This is in contrast to the views of the authors like Peritore (1999) who suggest no serious conflict between government, business and environmentalists in the South.

[81] Authors like Ostrom, Feeny and Picht (1993) argue that even if allowances are made for the detrimental impact of global and external events (for instance, declining primary commodity prices, increasing protectionism, fluctuations in oil prices and the vagaries of weather) on developing countries, it is clear that many of these countries are enduring the consequences of inappropriate institutional and policy choices

phenomena contribute to 'over-urbanisation', meaning that the pace of urbanisation outstrips the rate of growth of economic development in the developing countries.[82] Over-urbanisation not only puts immense strain on the environment, it can also lead to the unsatisfactory provision of public services.[83] Thus, provision of basic infrastructural services becomes a complex issue in the developing world.

Certain traits appear to transcend the level of development. Fragmentation of responsibilities (and the consequent complexity) among different agencies charged with urban management is a feature common to both developed and developing countries.[84] Further, expanding local government mandates without adequate finances and appropriate control over revenues (World Resources Institute et al., 1996), inadequate infrastructure and 'regulatory realities' (Rees, 1990; Gouldson and Murphy, 1998) seem to exist in the developed and developing world alike.[85] Consequently problems and solutions may be similar for cities in developed and developing countries.

Municipal Solid Waste management

Three perspectives emerge from the existing evidence on MSW in a developed and developing country context. Firstly, that solid waste generation is comparatively higher in developed than in developing countries. According to the World Resources Institute et al. (1996), while per capita solid waste generation is still low in cities of developing countries, the vast levels of production in developed countries creates problems of waste disposal.[86] The production of MSW is still highly correlated with the growth of economic activity, showing a stable or growing ratio with

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made in the past. Besides, the socio-economic conditions in the South often necessitate judicious use of resources and provide an enormous incentive to re-use and recycle (Malik, 1999; Agarwal et al., 2002).

[82] In order to provide the economies of scale appropriate to the most modern sectors of the economy and culture, the size of cities in many non-western countries is much larger than was the case in the early stages of European industrialisation....Another factor contributing to the large size of cities in developing areas is the degree of urban unemployment, underemployment and employment in low productivity service industries (Harris et al., 1995).

[83] Atkinson et al. (1999) state that structures of urban governance are difficult to change and particularly difficult to establish especially in a rapidly changing world. Further that fundamental issues remain of who should be doing what. Besides, as mentioned earlier, some regard governance as broader than government covering non-state actors (see Kickert et al., 1997).

[84] See World Resources Institute et al. (1996).

[85] Also see Commission on Sustainable Development (2002).

[86] It maintains that a wealthy city can more easily afford the public finance and administration needed to regulate the more perceptible forms of pollution. Further that the resources consumed and greenhouse gases emitted to support even the cleanest cities in developed countries are, on a per capita basis, far greater than those associated with the poorer cities of developing regions.

respect to Gross National Product in almost all the industrialised countries (Curzio *et al.*, 1994; World Resources Institute *et al.*, 1996). However, 'the amount of waste produced is a result of both the goods produced and consumed, and the inefficient use of materials' (Environment Agency, 2001, p. 40). Household waste in the UK is growing at a rate of 3% each year, faster than economic growth as a whole, with people on average producing about seven times their own weight in waste a year.[87] For nearly half a tonne of waste produced by each person in London, a further two tonnes is produced by businesses and industry by building homes and other facilities and producing goods for consumption (GLA, 2003b).[88] In India, the amount of waste generated per capita is estimated as increasing at a rate of 1–1.33% annually (4.89% for Delhi), with estimates of total waste quantity generated in 2047 being above 260 million tonnes, more than five times the present level (Singhal and Pandey, 2001). This rapid increase in solid waste has become a major problem in developed and developing countries.

Secondly, the provision of waste collection and disposal services to match the growth and projected growth in waste is an issue of concern for both. Inefficient and ineffective collection of wastes and inappropriate waste disposal methods also create environmental problems. In developing countries, the environmental impact of improper solid waste disposal is especially severe because many cities manage to collect only 30-50% of solid waste, the rest being either burned or dumped in unregulated landfills (World Resources Institute *et al.*, 1996). A report on waste management by the International Solid Waste Association states that the vast majority of countries are busy struggling with basic services, such as ensuring sufficient collection services and implementing a minimal degree of control at disposal sites, at the same time as they are facing increasing amounts of waste due to urbanisation trends.[89] Though most MSW management schemes in India spend 90% of their budget on collection and transportation of waste, less than 50% of the population is served (Huysman and Baud, 1994), with only 30% to 40% of the waste actually being collected and sent to disposal site on the same day (Planning Commission, 1995). In England, at current rates of growth, the amount of household rubbish will double by 2020 and cost £3.2bn per year to dispose of, which would mean spending an extra £1.6bn a year on waste management.[90] In 2002/03, 65% of household waste in England was collected from regular

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[87] Tony Blair's foreword in Strategy Unit's (SU) Report *Waste Not, Want Not* (2002).
[88] For every tonne of goods consumed by the British economy, some ten tonnes of raw materials and natural resources are used (Secrett and Jenkins, 2001).
[89] International Solid Waste Association and UNEP (2002).
[90] Tony Blair's foreword in SU's Report *Waste Not, Want Not* (2002).

household collections (excluding recycling collections, civic amenity sites or bulky waste collection).[91]

Thirdly, there are huge differences in the nature of waste generated by developed and developing countries. Urban solid waste in the cities of developing countries differs from waste in industrialised countries in that waste densities and moisture content are much higher in the former (Huysman and Baud, 1994). For instance, the recyclable content of Delhi's waste is between 13% and 20% (UNEP *et al.*, 2001), an organic (fermentable) component of almost 60% with very high moisture content (Planning Commission, 1995).[92] In London, the range of materials included in this waste is large, but the indications are that household waste typically comprises paper and card (32%), putrescible wastes (21%), glass (9%), miscellaneous combustible wastes (8%), dense plastics (6%), textiles (2%) and other materials (22%) (DEFRA, 2000).[93]

In sum, ensuring environmental sustainability of MSW management strategies is not straightforward. For instance, though nearly 100% (Srishti, 1998) of municipal waste in India is recyclable, average disposal by landfill is 91% (Central Pollution Control Board, 1997). Thus, low per capita solid waste generation in cities of developing countries, along with the predominantly biodegradable composition of waste, could in themselves be insufficient criteria to ensure sustainable MSW management. While at least 80% of household waste[94] can be reused, recycled or composted in the UK, the recycling average was only about 14.5% in 2002/2003 (DEFRA, 2004), which the Government aims to increase to just 30% by 2010.[95] Since 1996/1997, though the proportion of waste sent to landfill has declined from 84% to 75%, the actual amount increased every year except 2002/2003 (DEFRA, 2004). Landfill, therefore, remains the predominant waste disposal strategy in the UK, clearly failing to meet environmental sustainability in MSW management.

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[91] Waste online (www.wasteonline.org.uk/resources/InformationSheets/WasteDisposal.htm accessed 20 January 2005).

[92] The moisture content is subject to seasonal variation – it varies from 25% to 45% according to the season, with the organic content of solid waste ranging from 30% to 40%, indicating its suitability for biological processing (National Productivity Council, 1997).

[93] Putrescible waste is defined as household waste that can decompose easily, for instance, kitchen and garden waste.

[94] Household waste arisings accounted for 88% of municipal waste in 2002/03 (DEFRA, 2004).

[95] FoE (www.foe.co.uk/Templates/have_your_say.jsp accessed 12 January 2003).

1.3 Approaches to studying Municipal Solid Waste policy

Diverse approaches attempt to explain the field of MSW policy. They focus mainly on policy process (rationalism, incrementalism and public choice) or sheer number of groups influencing policy (pluralist including issue networks and elitist). Systems theory draws on both process-oriented and pluralist understandings of policy studies and seeks a holistic understanding, especially in comparative case studies. However, its critics argue that, while providing a set structure for constructing theory, which allows the researcher to develop a general typology of actor and system types, it ignores impacts of domestic political and societal variables and hence the full complexities of decision-making processes (Volgy and Kenski, 1982). Therefore, while systems theory plays an important explanatory role in providing a multi-dimensional framework,[96] it falls short of capturing the intricate details of interrelationships between the actors and their varied resources, constraints and incentives for action or inaction.[97] Game theory, on the other hand, helps to explain the field of environmental policy by investigating the differences in the solutions of different game models (for example, non-cooperative, cooperative or bargaining) between individual 'players'.[98] However, it fails to capture the dynamics of an entire network and often raises questions of reliability.[99]

Earlier studies on waste management policy have focused on: economic options (Broom et al., 2000), technological options (Curzio et al., 1994), on one level of government (Joardar, 1998), social aspects considered highly relevant for waste management (Nilsson-Djerf, 1999), planning for waste management (Davoudi, 2000) or specific policy options/alternatives, like recycling (Gandy, 1993, 1994; Agarwal et al., 2002). Gandy, looking at London, compares the city with other developed cities (New York and Hamburg) and attempts to extend 'the waste management debate to the political and historical arena' (1994, p.111). In particular, he studies the impact on recycling of the shift towards more market-orientated patterns of public policy since the 1970s. His conclusion (1993) that any reversal of current trends to reduce production of waste would require a wider shift within public policy towards a more active role for government in

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[96] See Clayton and Radcliffe (1996) for a detailed analysis of sustainability using the systems approach.
[97] Further, urban systems theory is not helpful here since it was designed as a general approach to understand the shape and structure of city systems, particularly the development of their private sectors, and was not intended to explain public policy and service provision (Aiken et al., 1987).
[98] See Carraro and Filar (1995) for more details.
[99] According to Martin (1978), game theory lends itself to perspectives and applications that do not question the assumptions underlying existing structures or institutions in society. For Grant and Quiggin (1994), it is more a study of 'selfishness'. Also see Lim (1999).

environmental protection at local, national and international levels is relevant and consequential. However, he does not address the issue of the 'whys' and 'wherefores' of the current waste management policy nor the constraints on and resources of government's role, especially in relation to other actors.

Davoudi (2000), on the other hand, examines the response of the UK's planning system to the shifts in government policy agenda from landfill to one based on the waste hierarchy. Of especial interest here are the findings based on the examination of three cases (West Midlands, Kent and Lancashire). Firstly, that whilst under the EU-led regulatory pressures, all three sought to move away from landfill, the selection of alternatives was diverse, reflecting the influences of locally specific factors. Secondly, that, while the consultation processes embedded in the British planning system went some way towards opening up the debate on strategic waste management to a wider range of stakeholders, the sectoral nature of the system and the 'end-of-pipe' approach to participation largely undermined potential achievements. However, the complex network of the interactions between the different actors involved and their influence on the policy of waste management remains unexamined.

The UK continues to be at the bottom of the recycling league in the European Union, using 17,746 landfill sites in England and Wales (Small Area Health Statistics Unit, 2001) to dispose of its waste.[100] A 2001 report on the state of the environment in London affirms that recent changes in indicators suggest that London's waste production and management has seen unfavourable progress and even deterioration (Environment Agency).[101] The report also asserts that London will need to reduce the overall quantity of municipal waste by 3.7 million tonnes each year by 2020. In India, the Ministry of Non-Conventional Energy Sources (MNES) supports and subsidises waste-to-energy plants at huge losses, despite official National Environmental Engineering Research Institute (NEERI) studies that show such thermal treatment methods are not feasible due to the low calorific value of the MSW generated. The Danish incinerator installed in Delhi in the 1980s, at a cost of Rs. 44 crore, ran for only a week because the waste was unsuitable for burning.[102] Since then it remains idle, incurring maintenance costs.[103] The report on Solid Waste Management in Class I Cities (including Delhi) in India (1999) of the Barman

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[100] Letsrecycle.com (28 January 2002). Any comparison within EU refers to the Western European nations primarily, unless stated otherwise.
[101] Over recent years growth in population coupled with the reducing size of household units has increased the amount of household waste generated in London (p. 15).
[102] One crore = 10 million Rupees.
[103] Further details in Chapter Five.

Committee set up by the Supreme Court concluded that the entire system of waste management in the country is out-dated, unscientific and highly inefficient. Clearly then, there is need for a wider investigation into the field of MSW in Delhi and London. Jänicke's model of capacity for environmental policy reform provides one avenue for conducting such an investigation.

Capacity for environmental policy reform

Jänicke's model of capacity for environmental policy reform, explaining the likelihood of success or failure, allows for a comparison of MSW management in Delhi and London, one developed and the other developing. The fieldwork for this thesis was constructed in the light of Jänicke's model. The model also provides categories to explain policy outcomes and helps assess the capacities of the two cities for MSW policy reform.

A proponent of the ecological modernisation approach, with his book *State failure: the impotence of politics in industrial society* in 1990, Jänicke also established himself as an advocate of the state failure argument. However, Jänicke (2002, p. 7) goes further and utilises the capacity building approach to conclude that 'capacity defines the necessary structural conditions for successful environmental policy as well as the upper limit beyond which policy failure sets in even in the case of skilful, highly motivated and situatively well-placed proponents'. Success is a result of complex interaction of factors which make up the capacity for environmental policy of a nation; none on its own is capable of ensuring attainment of environmental protection. Rejecting the 'mono-factorial' view, Jänicke (2002, p. 5) maintains that successful environmental protection is brought about by a complex interaction of influences and not by a single, isolated factor, nor a favourite instrument, nor a single type of actor, nor a particular framework condition or institution.

Jänicke's model identifies five factors that constitute capacity: actors, strategies, structural framework (cognitive-informational, political-institutional, and economic-technological), the situative context, and the character of the problem.[104] Policy outcome is influenced by these five main 'fundamental conditions', placed in an international context. According to Jänicke, the character of problems as well as the capacity to respond to them is strongly influenced by economic performance (see Figure 1.1).

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[104] The order of presentation of these factors is in keeping with Jänicke (1997, 2002).

Actors refer to both the proponents and opponents of special issues (including their support groups and third parties). While personal motivation and skills determine the degree of influence and impact they can have, competence and the structural framework conditions are important as well. Jänicke sees individual actors as representing organisations and as forming coalitions of interests. The proponents are environmental policy organisations (for integrated environmental planning), green interest organisations, media and the green business sector (ecologically innovative firms). The proponents are entrusted with the objective of utilising the capacity for environmental policy reform while the opponents (mainly identified by Jänicke as the target group of polluters) are treated as a restrictive factor and part of the problem. For instance, it makes a difference if the polluter is economically relevant and has strong influence on society.

Figure 1.1: Jänicke's model of capacity for environmental policy reform
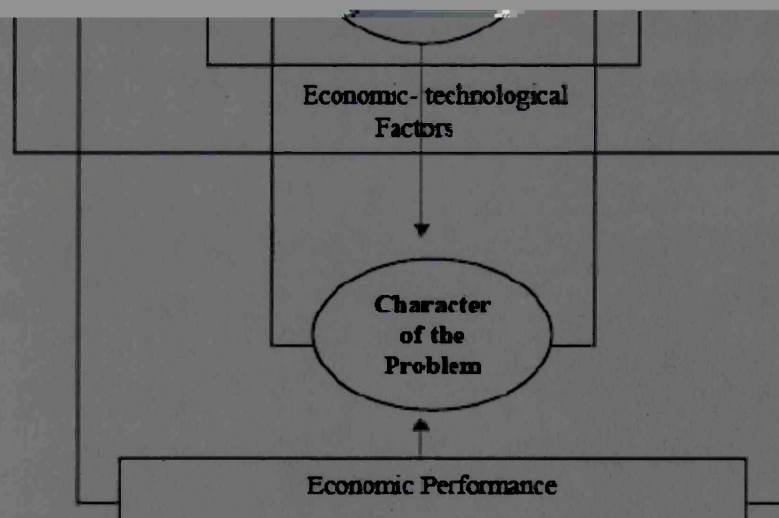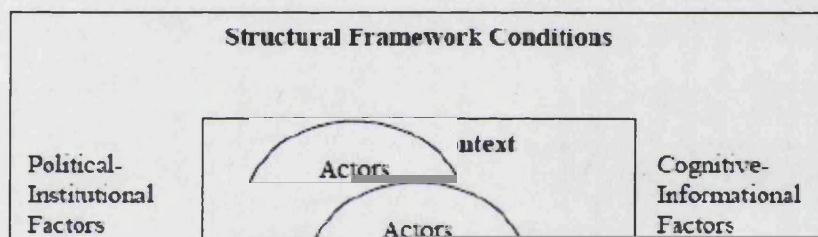
Source: adapted from Jänicke (1997)

The 'general approach to the problem', what Jänicke calls *strategies*, is listed as a factor in the model. Strategies include the necessary sub-goals, as well as the means, the application of instruments over time, and the 'purposive improvements of capacities'. Potentially successful strategies are characterised not only by 'stable, long-term action orientation, but also flexibility towards changing situations' (Jänicke, 1997, p. 6). He regards this capacity of policy actors for planned and coordinated action as a necessary pre-condition. For example, available knowledge helps to determine which strategy can be adopted and allows for the coordination of instruments and timing (i.e. when a particular instrument would be feasible to use).

Structural framework conditions consist of three separate framework conditions. The *cognitive-informational framework* conditions include circumstances under which environmental knowledge is produced, distributed, interpreted and applied. Culture provides the background to prevalent environmental consciousness and perceptions of threats and options amongst the public, making it an important initiator of the policy process. The *political-institutional framework* conditions take account of the constitutional, institutional and legal structure, the institutionalised rules and internalised norms constituting the framework for interaction.[105] It has three aspects: participative capacity, integrative capacity and capacity for strategic action. Participative capacity refers to the openness of input structures of the policy process, for example decentralisation and strong local communities which are regarded as favourable conditions for participation. Integrative capacity implies intra-policy cooperation (including coordination of environmental policy at different levels of the political system), inter-policy coordination (cross-sectoral integration of conflicting policies), and external integration of environmental policy institutions and non-governmental actors. For Jänicke, capacity for strategic action is defined as the ability to implement long-term common policy objectives against short-term special interests. It is the highest stage of institutional capacity-building in environmental policy and management, where environmental policy goals are anchored in a broad consensus, thereby making implementation easier and more successful.

The final set of structural framework conditions is the *economic-technological framework*, which concerns the economic capacity of a nation; that is, the performance, technological standard, sectoral composition or general availability of raw materials. *Economic performance* has a strong

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[105] Weidner (2002, p. 1365) specifies that, 'institution in this context is not confined to organisations with a physical structure and a defined mandate but includes formalised principles of conduct that shape human interaction, stabilise expectations, and help resolve collective disputes'.

and contradictory impact on the environment, influencing both the structure of problems and the capacity to solve them. Jänicke considers the gross national product of a country as an important determinant of existing capacities.

The *situative* context is the short-term variable conditions for action, which form the fourth factor of the model: the immediate settings in which the actors act. For example, an important situative change would be the discovery of win-win constellations for both environmental and economic interests, leading to support of the environmental measure. According to Jänicke (1997), situative changes can sometimes have an immediate influence on the direction and nature of environmental protection measures. The *character of the problem*, for example, whether it is relatively easy or hard to solve, is the fifth factor. Solutions would vary according to the urgency of the problem, that is, whether it is experienced by the public or latent and if it threatens future generations.

Jänicke's model, thus, provides a comprehensive list of factors that can influence environmental policy outcomes. Jänicke acknowledges that there are a range of environmental policy failures in waste reduction, nuclear waste disposal, soil and ground water protection, road traffic volume stabilisation, sustainable land use and absolute reduction of resource inputs into the production process. Can Jänicke's model provide an explanation for Delhi's and London's failure to achieve environmental sustainability in their policies on MSW? Does his encapsulation of the different factors correspond with the two cases? Can a few factors be placed more in the foreground than in the background?

Conclusion

The management of MSW, defined here as waste generated by urban households, including waste from civic amenity sites and waste collected for recycling or composting, is a problem for both Delhi and London. Furthermore, both face similar constraints on developing environmental protection measures, notably achieving environmental sustainability in MSW management which has significant ecological, social, political and economic implications. Given the context of existing diverse approaches to MSW policy, Jänicke's model offers a comprehensive encapsulation of the various factors impacting on the policy process. It is applied to study MSW policy in Delhi and London in a comparative analysis. It is contended that the model does not

adequately capture the role of institutional capacity in explaining the lack of environmental sustainability in MSW policy in both Delhi and London.

Chapter outline

Chapter Two explains why an institutional analysis of MSW policy is especially important. It provides the definition of institutions, institutional change, institutional embeddedness and institutional capacity as employed in the thesis. It also describes the policy networks approach used as a tool to understand the institutional framework for MSW policy in the two cities. In addition, it identifies the actors impacting on the policy formation grouped broadly into the state, non-governmental organisations, industries, international organisations and the public.

Chapter Three explains the research design and methodology adopted in this research. The choice of the case study approach and the reasons for selecting the two cities are also discussed. Data was collected from primary (semi-structured interviews and questionnaires) and secondary sources. Statements of interviewees are primarily used for data analysis.

In Part II, Chapter Four profiles the national context of MSW policy, including the national organisational background and identifies the various governmental, non-governmental and industrial actors relevant to MSW policy in India as highlighted by the interviews. It also outlines the principles and nature of environmental policy making and implementation, and elaborates on the organisational set up in Delhi. Chapter Five applies Jänicke's model to the city and, in particular, studies the institutional framework utilising the policy networks approach. Chapters Six and Seven mirror Chapters Four and Five but with respect to the UK and London. In sum, the Chapters Four to Seven present the empirical findings of the research. The final chapter elucidates the shortcomings of Jänicke's model when applied to the MSW policy reform in the two cities. Based on this research it is concluded that institutional capacity needs adequate consideration in situations of environmental policy reform. Further, it analyses and compares the two cases in terms of institutional capacity for introducing environmental sustainability in MSW policy and reiterates the findings of the research in respect to the hypotheses articulated in Chapters One and Two.

Chapter 2

Effective Municipal Solid Waste policy reform: a question of institutional capacity

2.1 Institutional capacity

2.2 The hypotheses

2.3 Policy networks

2.4 Categories of actors

Someone benefits from every rule, and finding out how to overcome resistance by those who benefit is the first step in effective reform.

Commission on the Private Sector and Development (2004, p. 24)

Environmentalism has manifested itself at various points over the last few decades. Mol (1995) recognises three waves of environmental concern. The first, at the outset of the twentieth century, focused mainly on the degradation of nature areas without questioning the foundations of the industrial society. The second wave started in the 1960s and early 1970s and centered around the notion that a fundamental reorganisation of the social order was the required basis for an ecologically sound society: this wave resounded only to a limited extent in the institutions of industrial society. The third wave, launched in the late 1980s, marked by the Brundtland Report in 1987, Mol claims, resulted in more actual, environmentally oriented transformations of the institutional order. One of the most important concepts associated with the greater impact of the third wave environmentalism was 'capacity', understood, for example in *Agenda 21*, as the institutional capabilities and networks that enable countries to integrate development and environmental policies. Institutional capacity is what this chapter sets out to address.

In testing the explanatory value of Jänicke's model in a comparative analysis, the thesis attempts to ascertain if institutional capacity could explain the evidenced MSW policy failure in Delhi and London. According to the model, the outcomes are influenced by the following factors: actors, strategies, systemic (structural) framework (cognitive-informational, political-institutional and economic-technological) in a situative context, with the character of the problem playing a major role. Of course, Jänicke includes institutional capacity in relation to the 'political-institutional' framework and in situations of policy failure however this is a limited understanding of its role. It

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is contended that institutional capacity plays a more important role in ensuring effective MSW policy, than credited in the model when applied to the two cases

This chapter defines the key concepts required for an institutional analysis of MSW policy and lists my hypotheses. The policy networks approach is used as a tool to identify and understand the existing institutional framework. A brief outline of what the policy network approach entails is provided. The actors of MSW networks are categorised into broad divisions of: state, non-governmental organisations (NGOs), industries, international organisations and the public.

2.1 Institutional capacity

The term 'capacity' has various and often vague interpretations in the field of sustainable development and environmental protection.[1] Without attempting to profile this diversity in definitions, I look at those adopted by some international organisations and by Jänicke.[2] The OECD (1999, p. 8) definition of capacity states that 'capacity in the environment represents the ability of individuals, groups, organisations and institutions in a given setting to address environmental issues as part of a range of efforts to achieve sustainable development'. Further that the key underlying principles of the 'capacity development in environment' concept are that it integrates environment and development concerns at all levels, aims to strengthen institutional pluralism, belongs to, and is driven by, the community in which it is based and involves a variety of management techniques, analytical tools, incentives and organisational structures in order to achieve a given policy objective'. The UNDP has adopted a similar definition of 'capacity' or 'capacity-building' for sustainable development.[3] According to *Agenda 21* (Chapter 37: 37.1):

> The ability of a country to follow sustainable development paths is determined to a large extent by the capacity of its people and its institutions as well as by its ecological and geographical conditions. Specifically, capacity building encompasses the country's human, scientific, technological, organisational, institutional and resource capabilities. A fundamental goal of capacity building is

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[1] See Honadle (1981) for a good brief on the various interpretations.

[2] Others, like Elton Consulting (2002, p.4) state that capacity 'is about the relationships between different organisations and stakeholders', and involves breadth of networks and effectiveness of liaison, scope of inclusiveness and effectiveness of participatory inputs at all levels, openness of processes, and sustainability of networks throughout planning, implementation and evaluative processes.

[3] 'The process by which individuals, organisations, institutions and societies develop abilities (individually and collectively) to perform functions, solve problems....and achieve objectives' (UNDP, 2002).

to enhance the ability to evaluate and address the crucial questions related to policy choices and modes of implementation among development options, based on an understanding of environmental potentials and limits and of needs as perceived by the people of the country concerned. As a result, the need to strengthen national capacities is shared by all countries'.

According to the GEF (2003), effective capacity building is based on the following eleven broad principles: ensure national ownership and leadership; ensure multi-stakeholder consultations and decision-making; base capacity building efforts in self-needs assessment; adopt a holistic approach to capacity building; integrate capacity building in wider sustainable development efforts; promote partnerships; accommodate the dynamic nature of capacity building; adopt a learning-by-doing approach; combine programmatic and project-based approaches; combine process as well as product-based approaches; combine process as well as product; and promote regional approaches. While the emphasis on institutions and roles of partners/stakeholders at one level or another is clear in these definitions, what are the indicators of or what constitutes capacity itself is quite broadly interpreted (or left implicit), which is where Jänicke's classification of capacity becomes useful.

As mentioned in Chapter One, for Jänicke (2002, p. 7), capacity is defined as 'the necessary structural conditions for successful environmental policy as well as the upper limit beyond which policy failure sets in, even in the case of skilful, highly motivated and situatively well-placed proponents'. For him, the process of capacity-building might be defined in general as 'institutionalisation and internalisation of new stages of problem-solving capacities in reaction to (or anticipation of societal challenges or crises' (p. 3).[4] According to Jänicke, the capacity for environmental policy of a nation is a result of a complex interaction of factors: actors, strategies, structural framework conditions (cognitive-informational, political-institutional, economic-technological), situative context and the character of the problem. By studying these specific factors in the two cases, it became clear that factors categorised as actors/political-institutional framework had a more significant role in the policy process, confirming the importance of institutional capacity. Before defining institutional capacity for environmental policy reform, it is important to clarify the terms of institutions, institutional change and institutional embeddedness.

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[4] For Jänicke, institutionalisation includes the internalisation of new routines of cognition and policy action.

Institutions

Institutions are important because they ensure stability and facilitate cooperation, reduce transaction costs, mediate disputes and generate information. Institutions are defined in a variety of ways in the social sciences, as: products of and constraints (rules) on human actions (Grafstein, 1988; North, 1990; Ostrom *et al.*, 1993); recurring patterns of human behaviour (Huntington, 1965; Crawford and Ostrom, 1995; Stevis and Assetto, 2001) or in terms of collective action (Commons, 1936; Bernauer, 1995).[5] In the context of capacity for environmental policy reform, Weidner (2002, p. 1365) specifies that institution 'is not confined to organisations with a physical structure and a defined mandate but includes formalised principles of conduct that shape human interaction, stabilise expectations, and help resolve collective disputes'. Thus, according to Jänicke (1992), institutional framework conditions are highly relevant for the policy outcome.[6] For the purposes of this research, institutions are defined as the humanly devised (formal and informal) constraints that shape human exchange, whether political, social or economic (North, 1990).[7] They constitute the framework in which interaction between actors takes place.[8] Institutions may change in response to endogenous and exogenous pressures. Institutional change can become necessary in the field of sustainable development broadly, and environmental sustainability in particular, as the following sub-section explains.

Institutional change

Often integration of environment and development objectives towards achieving sustainable development requires changes in institutional frameworks. The Brundtland report presents institutional change as the *sine qua non* of sustainable development (O'Riordan and Jordan, 1998). For instance, introducing recycling as the main option of waste management would alter not only funding patterns but also the relevance (and obsolescence) of other alternatives and the

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[5] Various authors (see Grafstein 1988; Runge 1984) study the question of why individuals conform to institutions, including problems of free riding, which is beyond the purview of this thesis. They also distinguish between formal (for example, enforcement of laws regarding marriage) and informal (based more on social and human psychology leading to subjective and personal preferences for marriage, hence more difficult to explain) institutions.

[6] There are many theoretical approaches that study how institutions influence political outcomes. For instance, the three different analytical approaches of historical institutionalism, rational choice institutionalism and sociological institutionalism, often clubbed under new institutionalism.

[7] Also see North (1991), Ostrom *et al.* (1993), Baumgartner and Jones (2002), and Grafstein (1988).

[8] The implicit assumption of neo-classical theory that institutions do not matter and can be ignored in policy prescription is itself a prescription for disaster (North, 1991). See Annex 2 for Weaver and Rockman's (1993) list of determinants of government policy-making capabilities.

actors associated with them. Therefore, changing institutions can face resistance from the actors with an entrenched interest in ensuring *status quo*: what is often referred to as institutional embeddedness. Indeed, institutional embeddedness may be the very feature most in need of change.

Institutional change (or reform) implies a change in the formal and/or informal rules to better enable sustainable development. The problem of consistency in change between formal and informal is compounded by the fact that very little is known about how informal norms evolve (North, 1991).[9] Formal rules are relatively easier to map and change. For instance, the enactment of the Environment Protection Act (1986) in India raised the status of the Department of Environment to the Ministry of Environment and Forests however that did not ensure higher priority was accorded to the environment in policy circles.

Different authors give different reasons for why institutions arise and change. New challenges from the environment cause different organisations, like pressure groups and families, to actively seek new ways to be effective and efficient (North, 1990). Alternatively, the recognition that existing arrangements leave potential gains un-captured and/or that new opportunities could lead to institutional change (Ostrom *et al.*, 1993; Dwivedi, 1997).[10] Aoki (2001) states that institutional change comes about when patterned choices become problematic because of environmental and internal changes, an 'institutional crisis' in the cognitive sense may be triggered: the 'taken-for-grantedness' of an institution, i.e. shared beliefs regarding the ways in which the game is played, begins to be questioned and the agents are driven to re-examine their own choice-rules based on new information embodied in the existing institutions.[11] Goodin

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[9] Informal norms have different enforcement characteristics, hence two societies with similar formal rules will have different performances (North, 1990).

[10] See also O'Riordan and Jordan (1999), Baumgartner and Jones (2002), Mayer (1982). Clemens and Cook (1999) analyse the components of institutional change.

[11] Aoki (2001) states that a new institution emerges only when agents' action-choice rules become mutually consistent in a new way and their summary representation induces convergent beliefs among them. The transition may not be a simple move from one equilibrium to another for a given structure of the game, rather may involve a novelty, characterised by a move from an equilibrium under given sets of action-choice rules of agents to an equilibrium under other sets of action-choice rules. Further that understanding the process of institutional change may be tantamount to understanding the ways in which the agents revise their beliefs in a coordinated manner, and from this perspective one needs to analyse the roles of technological and other environmental changes, political program and discourses, enactment of statutory laws, entrepreneurial experiments, cultural legacies and so forth.

(1996) meanwhile surveys the broader picture, identifying three kinds of, possibly overlapping, reasons for institutional change: accident, evolution and intention.[12]

According to North (1995, p.24), 'change is typically incremental, reflecting ongoing ubiquitous and evolving perceptions of the entrepreneurs in the context of an institutional matrix that is characterised by network externalities, complementarities and economies of scope among the existing institutions'. Thus, institutions change incrementally rather than in a discontinuous fashion (except where revolutions occur). To constitute institutional change, the alteration in question must become part of the standard operating procedures and must persist over time (Mayer, 1982). Therefore, institutional change is part of the way societies evolve through time (North, 1990).[13] Alteration in the relations among tiers of government, the role of judicial activism and a more explicit recognition of the role of stakeholders and civil society in the decision-making process, provide good examples of institutional change.[14]

Who or what initiates institutional change? Organisations and individual entrepreneurs can be the initiators of institutional change (North, 1990). According to North, institutions will be stable only if they are supported by organisations with an interest in their perpetuation. Consequently, he regards political institutions (both formal and informal) as the main source of institutional change, as they can provide a hospitable framework for evolutionary change, which is in keeping with the enabling role of the state envisaged under new forms of governance explained in Chapter One.[15] The political and economic costs and benefits to the ruling elites are key to explaining the

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[12] Hall and Taylor (1996 in O' Riordan and Jordan, 1999) differentiate between the three main variants: historical institutionalism, rational choice institutionalism and sociological institutionalism with each regarding institutional change differently. Historical institutionalism considers institutions as stabilising politics, while only certain forms create change. Rational choice institutionalism traces institutional change to changes in actor preferences in order to restore equilibrium. Sociological institutionalism regards institutions as shaping world-views, giving actors the option of choice from a series of templates when designing new institutions. Institutional change, however, is not restricted to any one of them alone.

[13] Mol (1995) maintains that institutional restructuring is not a new phenomenon, and is a continuous process, with the distinctive feature of the present drive towards environmentalism being the increasing emphasis on environment in institutional transformations.

[14] On the basis of what is regarded as essential, effectiveness (or not) of institutional change can be determined by the following criteria, regarded as three broad indicators of significant progress made towards good urban governance – good urban governance (namely, to promote decentralisation and strengthen local authorities); to encourage participation and civic engagement; and to ensure transparent, accountable and efficient governance of cities (United Nations Report 2001, March (E/CN.17/2001/PC/9).

[15] Some authors, like Papadakis (1996), regard established political organisations as better placed than new ones both to take advantage of and influence the institutional framework including possibilities for institutional change and innovation. He thus explains the ability of established political organisations to adapt to shifts in values, while newer green parties remain minor parties.

nature and scope of change (Ostrom *et al.*, 1993).[16] Therefore, since the institutional framework frequently has perverse incentives (North, 1990), institutional change will not necessarily be productive. With new forms of governance and what Kickert *et al.* (1997) call 'network management', this process of institutional change can be better managed in keeping with the goal of sustainable development.

Institutional embeddedness

Institutions often exhibit an inertia which restricts attempts to modify policy, even where more effective (in this case environmentally sustainable) alternatives exist.[17] Defined narrowly, embeddedness refers to entrenched preferences and the determined efforts of the dominant actors to preserve the *status quo* with its constituent inter-relationships, incentives/disincentives and known costs.[18] They do this by 'structuring options, defining what are to be considered relevant data, and ruling out the consideration of alternatives from the outset' (Hoben, 2000, pp. 165-166).[19] In other words, the policy space is controlled and restrictively defined.[20] These constraints can be historically traced, and they embody, preserve and impart differential power resources to different individuals and groups, which then persist over time with the actors on cautious guard (and risk averse) against possible change.[21] Differential power and the benefits it endows create an interest in preserving the *status quo*.[22] Other factors which directly or indirectly contribute to institutional embeddedness include the design of the system of administration as argued by the

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[16] They give an example of Thailand, where when the government officials were to be the main beneficiaries of public investments, the demands for interventions to improve land productivity were met; but when harmful, the demands were left unmet. This failure thus had important repercussions for Thai agricultural and economic development.

[17] See North (1990) who uses the term path dependency to explain circumstances where policies persist despite the availability of more efficient alternatives.

[18] See Shepsle (1979), Hinich (1991), Jones *et al.* (1997), Baumgartner and Jones (2002) and Macleod (2002).

[19] Therefore, according to Hoben, the influence and durability of a dominant policy narrative is not necessarily related to its economic, social or environmental consequences.

[20] Some authors believe that as a consequence policy can be reformed only incrementally. See Lindblom (1979), Lindblom and Woodhouse (1993). An important aspect of the policy process is the way that issues are defined and debated, because issue definition largely determines and structures the coalitions of actors and their policy benefits/disadvantages (Macleod, 2002; Kickert *et al.*, 1997).

[21] Risk aversion presents a powerful barrier to any institutional change that goes beyond short-term winners and losers (Weaver and Rockman, 1993).

[22] The resources for this differential power are briefly outlined in the section on policy networks in this chapter.

models of rent seeking, bureau shaping and budget maximising in particular.[23] Of particular interest, is Jones *et al.* (1997), who integrate transaction cost economics and social network theories to argue that the network form of governance is itself a response to exchange conditions of asset specificity, demand uncertainty, task complexity and frequency that drive firms towards structurally embedding their transactions.[24] As mentioned earlier institutions include informal as well as formal norms, and that the informal constraints, which are mainly culturally derived, will not change immediately in reaction to changes in the formal rules (North, 1990). As a result, the tension between altered formal rules and the persisting informal constraints amounts to a form of embeddedness that becomes crucial to address when aiming towards sustainable development, or in this case, MSW policy reform.

Institutional embeddedness, on one level, determines, and on the other, indicates the nature of the institutional framework, for instance, restricted access (Jones *et al.*, 1997), rules for information and knowledge sharing, problem definitions, common understanding of roles and intentions and preferences of different actors in the network. Furthermore, institutional embeddedness also influences who initiates institutional change and the level of institutional change which can severely constrain efforts to alter institutions towards more environmental sustainability. Institutional embeddedness is largely seen as hindering initiatives towards sustainable development. However, the embeddedness of certain relationships and resource dependencies amongst the actors could also possibly enable such initiatives. Thus, effective policy reform may require significant changes to existing institutions.[25]

Institutional capacity

What is institutional capacity for environmental policy reform? Institutional capacity is 'broader than adequate organisational, financial and legal capacities' (Joardar, 1998, p. 333). Institutional capacity comprises the inter-relationships between these different actors, their resources, inter-dependencies and, importantly, the ability of the institutional framework to overcome institutional embeddedness and ensure effective policy reform. Institutional capacity is determined by the

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[23] See Doyle and McEachem (1998). See also Huntington (1965) who equates the capacity to create political institutions with the capacity to create public interests, though he admits that governmental institutions have reasonably concrete interests of their own.

[24] Asset specificity implies that resources are relevant but only for a particular use.

[25] Mayer (1982) makes a distinction between planned and unplanned institutional change. He lists ideology, social structural perspective and interpersonal relations as the keys to planned institutional change.

conditions or features of the institutional framework, including the type and nature of policy network.

According to Jänicke, (1992; 1997), institutional capacity can be evaluated based on the following: extent of awareness amongst the public regarding a specific problem (which could lead to pressure for inclusion of other actors etc.); the extent to which the public (and proponents) can exert direct pressure, and influence decision-making, i.e. the openness of the decision making process; the number of actors existing, interested and able to influence policy choices; the role of governmental organisations (in relation to the specific problem), and their legal foundations (including an assessment of their responsibility, accountability and the network of interrelationships between them); the main initiators of action (which raises questions of the pro-activeness of the private sector versus the public sector) informing not only responses to problems but also in initiating institutional change; and the type of policy generally preferred.[26] In effect, these features suggest overcoming institutional embeddedness. For instance, openness of the decision-making process would imply a low possibility of entrenched interests in the institutional framework.

Institutional capacity is important in the context of environmental policy reform in particular because it determines the possibility, extent and direction of, firstly, policy reform and, secondly, institutional change. Institutional capacity is important because: the institutional framework influences not only the form and style of policy making (Weale, 1992) but also explains differences in the results of policy implementation (Jänicke, 1997). As explained earlier, institutions change. However, they can change with different momenta, with several factors influencing its direction and nature (Baumgartner and Jones, 2002).[27] Ostrom, Feeny and Picht (1993) assert that the path of institutional change is determined not only by the demand for institutional change, but also by its supply which is conditioned by various actors, cultural endowments, and the stock of knowledge concerning institutional arrangements. For them supply

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[26] For MacDonald (1998), institutional capacity also usually depends on available knowledge and the ability to adapt and act upon this knowledge where it is needed; it is usually achieved through training, public participation, network building and exchange programmes.

[27] The actual course of institutional development is the product of the complex interaction of social, political, economic and ideological forces (Huntington, 1982). According to Baumgartner and Jones (2002), change is dependent on positive (self-reinforcing processes that accentuate a trend) and negative (self-correcting processes which counterbalance, rather than reinforce, any changes coming in from the environment) feedback processes, which lead alternately to the creation, destruction and evolution of the institutions of public policy. For instance, positive feedback would be increasing levels of attention and growing number of actors opposed to the *status quo*.

depends on the capability and willingness of the political order to provide new arrangements. As a corollary, the existing set of basic rules of the political order and set of institutional arrangements will have a profound effect on both the capability and the willingness of the political order to respond to shifts in the demand for particular institutional arrangements.

In this thesis, institutional capacity for MSW policy reform comprises the inter-relationships between these different actors, their resources, inter-dependencies and, importantly, the ability of the institutional framework to overcome institutional embeddedness and ensure effective policy reform. This latter ability is investigated as the ability to recognise pressure and respond to it either as reform of policy and/or institutional change. The institutional conditions, studied using the policy networks approach, therefore, are regarded as mediating the role between pressure for environmental protection measures and policy reform. Institutional capacity is identified by the following factors: awareness/recognition of the MSW problem, ability to respond to pressure, extent of representation, mutual perceptions and extent of cooperation amongst actors, degree of insulation from other influences (autonomy) and the level of embeddedness (flexibility/adaptability). The factors are derived from the international organisations' and Jänicke's understanding of what constitutes features of institutional capacity. These criteria serve as a basis for comparing levels of institutional capacities in the two cities.

2.2 The hypotheses

The thesis evaluates Jänicke's model in the MSW policy context of Delhi and London. It contends that Jänicke's model, despite its comprehensive list of factors, does not sufficiently explain the reasons for lack of success in achieving environmental sustainability in MSW management. The thesis maintains that the institutional factor is not given adequate consideration in the model. In order to ascertain the role of the institutions and the way they operate, the thesis examines the ways in which the institutional framework, characterised by policy networks, mediates the relationship between pressure for environmental protection and *effective* policy reform. *Effective* policy reform implies reforming policy to achieve environmental sustainability in waste management, by pursuing the options like recycling that can require alternative institutional frameworks.

The thesis hypothesises that:

1. where there is increasing pressure in the situative context for environmental protection on the existing institutional framework to reform the MSW policy, then;

2. the institutional capacity to respond to pressure is negatively influenced by entrenched interests of dominant actors in the policy network (i.e. institutional embeddedness);

3. institutional change aimed at decreasing institutional embeddedness increases the institutional capacity to respond to pressure for environmental protection;

4. the more institutional embeddedness there is, the more the need for institutional change along with policy reform to increase the possibility of *effective* policy reform.

The Figure 2.1 maps out the hypotheses.

Figure 2.1: Explaining the hypotheses
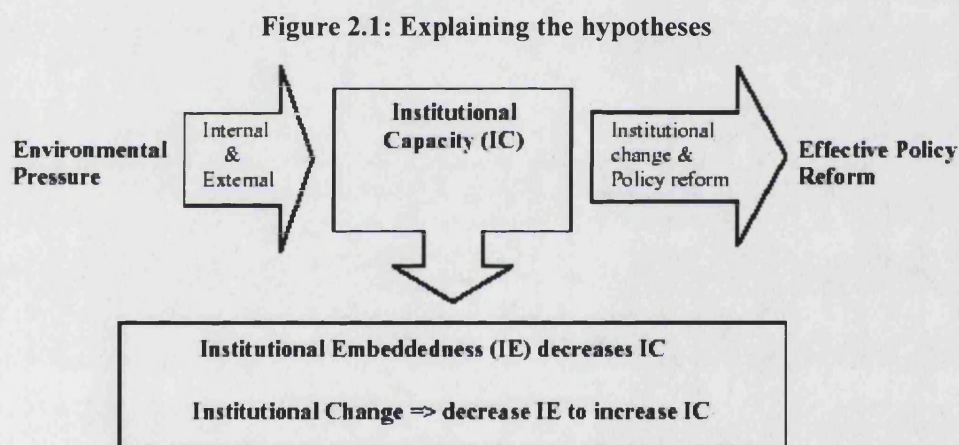
Institutions, comprising both formal and informal processes, mediate the relationship between any pressure for environmental protection and policy reform by determining the kind and degree of response to the pressure. Institutional capacity for environmental policy reform is interpreted as the ability to recognise pressure and respond to it as reform of policy and/or institutional change. Policy reform can range from modifying objectives to introducing new ones. Institutional change here is interpreted as a change in the constitution of the policy community.[28] However, the embeddedness of certain relationships and resource dependencies amongst the actors of the network could possibly (in the best case scenario) enable or (in the worst case scenario) constrain the possibility of institutional change and therefore, *effective* policy reform. In other words, an

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[28] Institutional change can also be a revamp of existing ones or the creation of new institutions.

inverse relationship between institutional embeddedness and institutional change would inhibit *effective* policy reform.

Responsiveness to pressure, therefore, can be conditioned firstly, by the degree to which the current MSW management strategy is embedded in the existing institutional structure; secondly, by the extent to which the new approach requires alternative institutional arrangements; and thirdly, by the general capacity of the system to accommodate environmental policy reform, including immediate stimulus as identified by Jänicke. Responsiveness starts with recognition of the problem of MSW, recognition of the difficulties in introducing environmental sustainability in MSW, and various organisational and policy initiatives.[29]

In sum, three main features are studied here for a rounded institutional analysis of MSW policy. The first feature involves how institutions determine the objectives and the conditions for interaction amongst actors. The second feature studied is the potential of existing institutions to meet the challenges of complex environmental protection measures, such as MSW management. The final feature explores the capacity of institutions not only to induce change, but also to undergo change. Using the case study as a methodology, the hypotheses are tested on the existence of pressure for environmental protection measures, ability to recognise and respond to the pressure, and the organisational and policy initiatives introduced, in the context of the prevailing policy network and the constituent inter-relationships amongst the actors. The policy networks approach helps structure and assess the two cases on these criteria. The approach is also used as a tool for understanding the political-institutional framework in Jänicke's model. Interviewee statements confirm that responsiveness is to a large extent constrained by the existing institutional framework comprised of strong and influential core actors versus the peripheral and relatively less influential actors in each case. The entrenched preferences of these core actors towards a less environmentally sustainable option of MSW management dominates the policy process.

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[29] Cost considerations were left largely in the background on the assumption that with the intervention of the state (either to introduce landfill tax/variable charging/subsidies on compost) certain degree of control could be exerted on the cost of each alternative.

2.3 Policy networks

The policy networks approach offers a valuable way of exploring the way in which pressure for reform is mediated in the process of policy formation. In this thesis the policy networks approach serves as an analytical tool to investigate the actors and their inter-relationships. It brings together actor-centred and power dependence approaches and helps account for the varying importance of a multitude of actors placed at different locations.[30] In addition, it allows for bringing both formal and informal institutions to scrutiny. Policy networks are increasingly used to study environmental policy reform and policy process frameworks.[31]

As noted in Chapter One, governance has acquired new dimensions, with an increase in state, quasi-state and non-state actors (Rydin, 2003). This means that considerable amounts of time, effort and resources go into maintaining links between different actors and policy networks of all kinds (Dowding, 1995). The policy networks approach has become increasingly useful in understanding these links and in analysing the policy process.[32] It is highly appropriate to analyse the complex interactions between policy actors crossing the state/non-state boundary that are the defining characteristic of modern policy-making (Smith, 1997), including policy reform.[33]

Policy networks are more or less stable patterns of social relations between interdependent actors which take shape around policy problems and/or policy programmes (Klijn, 1997, p. 30). The basic premise is that it is resource interdependency that brings actors together in networks which, in turn, constrain and influence the policy process (Smith, 1997; Rhodes, 1988; Kickert *et al.*, 1997). 'At the heart of the policy networks concept is the notion that resource interdependent policy actors deploy, withhold and exchange resources in order to influence decisions during the policy process' (Smith, 1997, p. 38). The assumption, therefore, is that there are many actors

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[30] See Danson *et al.* (2000).

[31] See Neilson (2001) for further details. Also see Keeley and Scoones (1999), who maintain that change reflects the actions of actor-networks. Though policy networks can be studied from a network participant's perspective, here it is studied in its entirety as the unit of analysis to gain insights into what outcomes such a network produces or prevents.

[32] For a sociological analysis of networks, see Sewell (1992), Riley (1983) and Turner (1986). According to Parsons (1996, p. 185), 'in the case of policy-making it has clear attractions in that it draws attention to the way in which policy is the product of a complex interplay of people and organisations and provides a more informal picture of how 'real' politics takes place'.

[33] Policy network is also important, as Bogason (2000) maintains, because over time the rationale has changed from structure to process, with the theoretical understanding of the organisation moving from a static concept like bureaucracy to a very volatile phenomenon like the network. According to Smith (1997), the focus of this literature is on the different *types* of policy networks (that is, conditions of interaction between policy actors) and how these affect the policy process.

involved with an interest in the policy issue. Actors may seek insulation from influence by others, or at the other extreme, seek penetration with intent to influence (Smith, 1997). A middle path would be mutual adaptation between policy actors in an area or their agreed cooperation on an issue (Grant *et al.*, 1988 in Smith). Interaction between the actors is guided by certain formal and informal rules of the game, thereby enabling or constraining more effective relationships.[34] Wilks and Wright (1987) and Mol (1995) list some identifiable rules, for example, mutuality (an expectation of mutual benefits from participation), being consulted on issues, maintaining confidentiality within the network, the use of legal remedies as a last resort etc. This list can be extended to include interactions, such as levels of communication and information exchange, coordination, cooperation and agreed avenues for interest articulation. Thus, the approach draws upon both the exchange and power dependency theories.[35]

Resources can be variously classified. For example, Rhodes (1986a) identified five that are central to interaction in a policy network. These are authority (mandatory and discretionary), money, political legitimacy (access to public decision making structures and the right to build public support), information (not only possession of data but also control over its collection or dissemination), and organisation (which allows for the power to pursue its objectives directly rather than through some intermediaries). Resource interdependencies between policy actors create the need to bargain with one another to secure desired policy outcomes. Each actor's resources and willingness to use those resources and those of the other actors are significant factors influencing the policy process.[36] For Kickert *et al.* (1997) public policy-making within networks is about cooperation or non-cooperation between interdependent parties with different and often conflicting rationalities, interests and strategies.[37] Institutional embeddedness can eventually occur, because interactions between diverse actors are frequently repeated, which

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[34] Rules of the game guide members' behaviour towards each other and influence the way resources are deployed (Mol, 1995).

[35] Different policy network theorists use one or the other as the basis for interaction, while for Smith (1997) exchange relationships could be a sub-set of power dependency relations, distinguished by the use of positive sanctions or lacking zero-sum characteristics. Besides, exchange and power dependency can occur in the same network (Smith). Exchange theory argues that all human relationships are based on a subjective cost-benefit analysis, including of the alternatives. Power dependency theory argues that dependence of one actor on another creates situations of power for the latter.

[36] Wilks and Wright (1987) state that each actor's 'decisional manoeuvre' is constrained by the material and intellectual resources available to him, that is appropriate to that issue and which he is prepared to use, and (most importantly) by those possessed by other players who may well perceive their own interests differently.

[37] Also see Jones *et al.* (1997).

develop and formalise shared perceptions, participation patterns and interaction rules (Kickert *et al.*).[38] This is reflected in the degree of integration.

According to Smith (1997), the scale, nature and pattern of interactions define and distinguish different types of network. Policy networks are generally classified as high or weak in degree of integration (Wilks and Wright, 1987). Highly integrated networks (or 'policy communities', Marsh and Rhodes, 1992) are indicative of stable relationships of the members, restrictive membership, interdependence within the network, and insulation from other networks. It is generally assumed to have a high impact on policy.[39] The features of a policy community include small and exclusive membership, high degree of continuity and consensus over the network's appreciative system and rules of the game (Smith, 1997). While interdependency is key to the network approach (Kickert *et al.*, 1997), individual actors belonging to the policy community might be powerful enough to condition policy to an extent that reduces their dependence on actors outside the policy community.[40] Resource interdependency within policy communities gives rise to negotiations and bargaining as effective strategies to determine policy direction, with rare exhibitions of internal criticism.[41] Weak or low integration networks (or 'issue networks', Marsh and Rhodes, 1992) on the other hand, comprise a large number of members with a limited degree of organisational interdependence, making them loose, atomistic and often inchoate structures. Issue networks, on the other hand, fail to exclude groups with conflicting views because of the large number of participant actors. For issue networks, open criticism becomes a useful strategy at the hands of its members.

While the two are only ideal types, using the network dimensions of membership, integration, resource interdependency and power distribution, they facilitate an understanding of the co-relation between changes in policy networks and policy reform. In order to clarify the two cases under investigation, the concepts of 'core' and 'periphery' are utilised to differentiate between the

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[38] In fact, they do not regard the government as occupying a superior position to other parties, but as being on an equal footing with them; in a key difference with the traditional form of governance, with its command and control structure. This research, in contrast, holds the state in a better position to initiate reform of policy and institutions.

[39] A policy community is a network of resource dependent organisations separated from other communities by a break in the structure of dependencies and that it is also characterised by vertical interdependence based on shared service delivery responsibilities, and insulation from other networks and invariably to the general public (Rhodes, 1985). According to Richardson (2000), the key aspect of policy community is the implication of stable policies, stable relationships and a stable membership.

[40] This approach does not assume equal measure of dependence amongst the actors.

[41] The strategies could include bargaining, incorporation, confrontation, persuasion and the use of incentives (Rhodes, 1985).

actors based on proximity to the policy process, where the 'core' also implies features of policy community. In keeping with the earlier discussion on institutional change, according to Smith (1997), the sources that change policy networks can be endogenous (from within its members) and exogenous (external to the network). Endogenous sources are generally rare, but are even rarer within policy communities than issue networks. Thus, the main contributory factor for change comes from the external environment: the economic, political, institutional and cultural framework (Mol, 1995).

The policy networks approach has not gone uncriticised. The disadvantage and advantage of policy networks is higher costs in policy formulation (i.e. coordination and decision costs) but significantly lower costs in policy implementation (monitoring costs, control costs)· (Smith, 1997). The criticisms include the general assumptions about how domestic actors interact in the political decision-making process.[42] To conclude, policy network analysis examines the relations between policy actors, seeks the rules of the game and strategies employed, and considers the resource interdependencies which structure the interaction (or exclusion) arising in a policy process or sector.

Relevance

The policy networks approach has been used before to study environmental issues. For example, Smith (1997) evaluated the Integrated Pollution Control (IPC) regime introduced in the UK to conclude that the very tight (integrated) network consisting of industry and regulators put in place a system of pollution control quite different from that envisaged by the original architects of the policy. Networks influence not only the design of policy but also the 'regulatory realities' that Rees (1990) and Gouldson and Murphy (1998) discuss, for instance, the discretion exercised by the regulators. The approach connects public policies with their strategic and institutionalised network of public, semi-public and private actors participating in certain policy fields (Kickert *et al.*, 1997). It provides an analytical tool for interpreting and explaining interactions which are discovered empirically (Wilks and Wright, 1987). The use of this approach allows consideration of both internal and external catalysts for changes in policy networks and policy reform.

Of immense importance to the present research is the proposition that the government requires the assistance and cooperation of other groups if it wants to achieve a policy objective with a

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[42] See Dowding (1995), Mol (1995) for further details.

minimum of conflict (Mol, 1995; Smith, 1993).[43] Government can exchange access to the policy process for cooperation and thus establish a policy network (Smith, 1993). On the other hand, the decision making authorities can pursue 'symbolic regulation' to give the appearance of effective policy making while failing to establish the necessary institutional capacity to enforce regulation (Gouldson, 2002). In addition, policy networks are well suited to study institutional embeddedness. Policy networks analysis is also able to accommodate different patterns of policy making (Smith, 1997), adding to its usefulness. For instance, the joint environmental policy making (a combination of self-regulation and voluntarism) which emerged as a consequence of various state failure arguments (Jänicke, 1986) and helping arrive at the realisation that 'command and control' strategies were failing to deal with problems of environmental deterioration (Mol *et al.*, 2000). The approach helps capture new forms of environmental policy making, which comprise a larger role for private actors either business or voluntary sectors, but essentially involve redefining the state's role.[44] While the innovative capacity of networks *per se* in helping understand this new form should not be overestimated, policy networks can aid in understanding/enabling institutional change, what Kickert *et al.* (1997) call 'network management'.

As mentioned in Chapter One, according to Kickert *et al.*, network management implies the management of interaction processes within networks or changing the structural and cultural characteristics of the network, which could be the way to improve the conditions for collective action.[45] Until recently, the idea of policy networks was mainly used to explain why policies fail.[46] But now attention has been paid to its potential for public problem-solving and societal

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[43] See Bogason (2000) who states that the current trend is to move away from making one formal organisation/actor responsible for public policy.

[44] As noted in Chapter One, the new modes are characterised by a larger role of private actors, either via intensive negotiation, consultation, interaction, even self-regulation, or via increasing economic and market-oriented strategies and instruments (Mol *et al.*, 2000).

[45] Collective action is defined as a process where actors organise for joint decision making for one or more purposes and, in doing so, give up some of their autonomy and give up their freedom of action in favour of the joint decisions regarding that purpose (Bogason, 2000).

[46] Policy networks approach identifies the following causes of policy failure: lack of incentives to cooperate, existence of blockades to collective action, vague or non-provocative goals, the absence of important actors or the presence of others who may discourage participation of necessary actors (Kickert *et al.*, 1997). Further, Kickert *et al.* assert that actors might not be committed to the common purpose and/or crucial information about goals, means and actors may be lacking. Participation here is defined as forming a part of the policy process, either intended or not. See Mayoux (1995), Rahman (1992), Henkel and Stirrat (1996), Chambers and Guijt (1994), Clark (1995) and Oakley *et al.* (1991) for different perspectives on participation and participatory development. Whatever the perspective, 'participation is a necessary part of the formulation and implementation of policy however it should not be regarded as guaranteeing policy success' (Baker *et al.*, 1997, p. 24).

governance (Kickert *et al.*) as discussed briefly in the following section.[47] In sum, the policy networks approach allows an in-depth understanding the institutional framework of MSW policy in the two cases.

2.4 Categories of actors

Environmental protection measures in general are complex, diffuse and long term (Bentley and Stedman-Jones, 2000) and often involve diverse actors, as in MSW management. The actors can broadly be divided into state (including different levels of government)[48], non-governmental organisations, industries and the general public. As explained in Chapter One, Jänicke categorised the actors into proponents and opponents of environmental policy. In situations of environmental policy reform, two broad roles of the actors can be identified: first, the actors conform to existing institutions, and second, they aim to create/change institutions. Conformity may ensure stability of interactions, but it also carries the risk of embeddedness of some interactions that benefit only a few actors to the exclusion of others, leading to sub-optimal policy reform. Similarly, change or creation of new institutions is also open to dominant influences. The following paragraphs describe the actors and the possible interactions amongst them in relation to sustainable MSW management.

State

The logic of collective action and the tragedy of the commons highlight the difficulty of ensuring cooperation amongst actors to enable beneficial agreements, thereby reiterating the need for solutions to be imposed. Many institutional actors will not necessarily order themselves to meet specific environmental objectives in the absence of external intervention (Gunningham and Grabosky, 1998). The function of directing other actors is usually performed by the state.[49] While non-governmental solutions exist, this research assumes the government's position of prominence in setting the priorities of the society in which it operates.[50] The government still needs to play an

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[47] Also see Jones *et al.* (1997).
[48] The distinction between the political and administrative actors is highlighted as discernable/required in the thesis.
[49] Some authors stress the need for 'iron governments' to solve ecological problems. For the World Bank (1997), without an effective state, sustainable development, both economic and social, is impossible.
[50] The state is the authoritative allocator of benefits, and important research questions concern how actors come into power positions related to that allocation (Bogason 2000, p. 29).

essential policy role even though today this takes the form of regulator, facilitator, catalyst and activator (Gunningham and Grabosky), even network manager. Certainly, Jänicke and Weidner (2002) assert that in cases of environmental improvements at national or regional level, government regulation was by far the most important immediate factor.

As we have seen earlier, as the state retreats from many of the traditional regulatory functions and forms of acting, numerous opportunities arise to forge and create new roles, harnessing private institutions and resources in the furtherance of public policy (Gunningham and Grabosky, 1998). Meanwhile, it is also recognised that the new role of the state makes it especially vulnerable to regulatory capture or rent seeking. The problems include bounded rationality, costs of bureaucracy and the objectives (perhaps vested) of the bureaucracy itself, implementation problems and their inherent costs.[51] Besides, the state has divisions along national, regional and local lines, which often compounds the problem.[52] Many studies suggest that, far from cooperating with and complementing each other, the relations between several levels of government, particularly between central government and local government, have often been strained and conflicting (Fernandes, 1999; Jha, 1996).[53] In addition, though local capacity to deal with many problems may be increasing, the increased capacity may not be appropriate for hazard management or environmental management (Handmer, 1999). According to Handmer, commitment from local authorities can be obtained by building capacity and prescribing and supporting a process to deal with conflicts between different interest groups. Therefore, it is important to establish participative processes for discussion and negotiation between various stakeholders. In addition, there is a difference between the political and administrative arms of the state. This distinction is highlighted where required. The three aspects of public bureaucracies – their relationship with the policy makers, their internal organisational dynamics and their relationship with civil society (Pierre, 1995) – are clearly discernable in the policy process.

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[51] See, for instance, the new institutionalist models of regulatory capture, budget-maximisation and rent-seeking in Dunleavy (1991) and Lindblom (1993).

[52] Policy issues, in most democracies, are divided into jurisdictions under the control of ministries, who are very jealous of their turf, and fight among themselves when a policy requires action, by several agencies among the ministries (Hinich, 1991). For instance, environmentalists may find support among the professionals of a Ministry of Environment, while police forces object to environmental activism as infringing on private property (Bogason, 2000).

[53] See Van Dijk (1991) for a good account of conflict of interests within the public sector.

Non-governmental organisations

Public interest groups, or in particular Non-governmental Organisations (NGOs), have become influential participants in environmental protection. They are instrumental in placing environmental issues on the public agenda and in educating (including explaining implications of various policy alternatives), enforcing, monitoring (or act as watchdog), initiating pressure (direct and indirect on both government and industry) for reform and are important evaluators of that reform. A significant proportion of environmentally beneficial activity by government and industry can be directly attributed to the vigilance and the pressure exercised by public interest groups. Therefore, they help strengthen the effectiveness of environmental policy instruments and are a force of informal social control in their own right (Gunningham and Grabosky, 1998). Their potential to effectively monitor the operations of government has led some observers to call for an institutionalised role for public interest groups.[54] Braithwaite and Ayres (1992) argue that by giving citizens the right to formally challenge the non-enforcement by government agencies; one greatly enhances the prospects of industry compliance.[55] However, these non-governmental actors are not without problems and barriers.[56]

The NGOs might in reality have their own self-serving motives and interests, in addition to the ones they profess.[57] Besides, another related problem is policy distortion (Breyer, 1982) caused by the pursuit of high profile issues, like nuclear waste, climate change or ozone depletion which are given huge media coverage at the expense of what can be regarded as low-profile issues, like the loss of biodiversity. Further, there is huge variety in the issues pursued which can lead to disunity in the environmental movement, possibly reducing its potential as a significant source of pressure.[58] Often the groups face resource constraints, mainly financial. Governments can offer support in several ways: direct and indirect subsidies, financial incentives and concessions, and by allowing them access to the policy process. The government can intervene to facilitate a dialogue not only between itself and NGOs, but between businesses and NGOs as well.

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[54] Gunningham and Grabosky, Cohen and Rubin (1985), Clark (1995) and Gunningham (1998).

[55] This view led Cohen and Rubin (1985) to suggest designing optimal combinations of state and third party enforcement, where the government establishes baseline standards but contracts out enforcement. Gunningham (1998) refers to their role as 'surrogate regulators.'

[56] See Clark (1991) for details.

[57] Decisions of interest groups to challenge existing policies are not merely a function of their preferences, but also are heavily dependent upon their perceptions of the outcome (Macleod, 2002).

[58] It is also important that NGOs should not be tempted to abuse their position as defenders of environmental interest by, for example, overriding carefully devised regulatory compliance strategies (Gunningham and Grabosky, 1998).

Governments may also improve the legal standing (the right to bring an action before a court) of public interest groups (Gunningham and Grabosky). Thus, the government can help provide these groups with a more conducive environment for their input in the policy process.

Industries

Industries have come a long way from the industrial revolution era to confront new challenges, including that of environmental protection. However, 'companies are still inexperienced in dealing with environmental issues' (Porter and Linde, 1995, p. 99). The increasingly vocal demands for and growth in significance of concepts like environmental regulation, CSR (including standards, like ISO 14001), ecological modernisation and self-regulation suggest an increasing pressure (and consequent awareness) on industry to be environmentally inclined. On the other hand, industries are economically resourceful and often successfully lobby governments at both policy formation and implementation phases. Industry is generally accused of lobbying the government for what are generally regarded as private/corporate objectives. To a certain extent, this was considered quite natural and normal, with the government and industry sharing the same core value, namely that economic development is the foundation of modern society.[59] Thus, unsurprisingly, many governments included business and industry advisers on their delegations to the UN Preparatory Committees for the World Summit and at the World Summit in Rio de Janeiro.

On the other hand, regulatory overload is now a well-recognised phenomenon because there are practical limits to the capacity of industry to comply (Gunningham and Grabosky, 1998). This makes it even more difficult for the state to ensure environmental protection. However, the government is still in a position to help green industries (and consumers) by guiding and correcting market preferences for products through a green purchasing policy (Gunningham and Grabosky). It can also ensure 'green coordination' amongst its fiscal and industrial policies towards an integration of development and environment agendas referred to in Chapter One.

International organisations

Several international organisations are active in implementing projects and financing research to tackle urban environmental issues, as demonstrated by World Bank (WB), European Union (EU)

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[59] See Chatterjee and Finger (1994).

and United Nation (UN) papers.[60] The common themes that run across studies and reports on waste management tend to include: better integration of formal and informal networks, and local and national policies and legislation; promoting greater awareness with a view to changing consumption patterns and the development and use of indigenous technologies along with research on new and better technologies; and comprehensive integration of environmental considerations instead of a fragmentary approach. Studies by the UNDP and WB have also shown that dense and active informal networks exist in waste management, especially in developing countries. However, there are differences in the approach adopted by these international organisations towards urban development in particular. For instance, the WB focuses on economic development and the United Nations Development Programme (UNDP) on human development. Yet ultimately both agree that waste production needs to be targeted, because its growth presents urban authorities with problems beyond their current capacity to solve (Huysman and Baud, 1994).[61]

The UN and especially the EU are considered in more detail because of their relevance to the cases under investigation. The UN attempts to highlight numerous issues. For example, the UNESCO document on good governance refers to specific measures to enhance transparency and accountability in local authorities.[62] This is then expected to percolate through the various UN bodies to national frameworks around the world. *Agenda 21* of the UN, with its emphasis on people defining their own needs and priorities, provides an excellent framework to enhance capacities and implement integrated and cross-sectoral strategies for sustainable development (Capacity 21, Annual Report, 2000), including sustainable MSW. It recommends the hierarchy of waste management, and environmentally sound waste disposal and treatment. It sets the deadline of 2000 for all industrial countries and 2010 for all developing countries to have national programmes with, where possible, targets for efficient waste reuse and recycling.[63] *Agenda 21* suggests incentives for local authorities with a high recycling rate, separate collection of recyclables from households, practice of the polluter-pays principle, and legal and economic conditions conducive to investments in recycling. For increasing capacity building, it highlights

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[60] See Baud and Schenk (1994), Pugh (1996) for details.
[61] The WB's classical approach of considering solid waste as an 'urban planning' problem, thus making the municipal authorities as the main actors in the field, responsible for collection and disposal of solid waste, is not without its critics (for example, Baud and Schenk, 1994).
[62] (E/CN.17/2001/PC/9). The Global Compact initiative to promote sustainable growth and good citizenship through committed and creative corporate leadership (www.unglobalcompact.org) and partnerships programmes with other international organisations have been initiated by the UN.
[63] Chapter 21, *Agenda 21* (p.209).

the need for operational national policies, enabling local authorities to mobilise community support and undertaking waste management planning that incorporates resource recovery practices.

A unit of the UNDP, Capacity 21 (now Cap 2015) has endeavoured to move beyond the traditional interpretation of capacity building (i.e. training individuals or building institutions) to enhance capacity between people and institutions across all levels and sectors of society in a complex web of interaction that achieves the co-management of economic, social and environmental priorities and concerns. The Cap 2015 approach remains founded on the three core principles of integration, participation and information, with an evolving focus to improve process capacities between national and local level actors, and strengthen relationships between key development partners. However, these remain more guidelines towards 'best practice' than basic tenets of international law, resulting in patchy implementation worldwide.[64] In addition, the UN is criticised for lack of effective monitoring mechanisms and resources, and is often mired in controversy.

The EU (discussed further in Chapter Six) is acknowledged as the most important player in global environmental policy (Jänicke and Weidner, 2002). It strives to set EU-wide environmental standards, often with penalties for non-compliance, including recourse to judicial avenues. However, it faces immense pressures and bargaining in environmental policy-making. Also, differing interpretation and transposition of EU Directives amongst member states leads to discrepant levels of environmental accomplishments within the EU.

Despite their limitations and weaknesses, these international organisations play an important role in advocating and creating an awareness of policies for attaining sustainable development. Part II of the thesis clarifies some aspects of this role with respect to the two cases.

The public

Effectiveness and efficiency of environmental policies are to a considerable degree dependent on the society at large, as discussed in the sub-section on social implications of MSW policy in Chapter One. For this thesis, the role of citizens is elaborated by the term 'household', identified

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[64] However, the international recognition of civil society and public education has possibly aided in improving and consolidating their role in national sustainable development initiatives.

as 'the key waste-generating unit' (Thurgood, 1999). Among citizens, growing consciousness of environmental issues has been accompanied by steady increases in activism and protest, and also small-scale behavioural change such as recycling household waste and changing shopping patterns (Bentley and Stedman-Jones, 2000). At the same time, however, Bentley and Stedman-Jones assert that people continue to hold contradictory beliefs, for example, sympathising with the recent UK fuel protests *and* agreeing that global warming should be slowed down. This inconsistency, prevalent in Delhi and London, adds constraints on environmental protection measures. Moreover, it is not impossible that 'citizens develop and reveal likes and dislikes for certain policy instruments independent of the instruments' effects in economic terms' (Kraan and Veld, 1991, p. 12). Hence, it is important to create environmental awareness amongst the citizens that enables them to make informed decisions regarding their lifestyles and their consequent ecological footprint.

According to Warren (1986), from a citizen's perspective, several interrelated types of costs exist for individuals that can affect their ability to function as operational citizens: costs associated with participation in making public policy choices, the production and delivery of goods and services mandated by those choices, acquiring and consuming the goods and services. Therefore, though an important stakeholder in environmental policy, citizens are uncertain about their roles, unclear about how and when to participate, and doubtful of the effectiveness of their participation.[65] In addition, though the media is credited with creating environmental awareness amongst citizens, 'highly commercialised mass media with close ties to economic power may in recent years have worsened conditions for environmental awareness in some countries' (Jänicke 2002: p.13).

In line with research since the late 1990s focusing on the renewed role of the state, this thesis assumes the importance of and positive benefits from collaboration between the state, industries, NGOs and the public. In sum, these three broad categories of actors comprise the MSW policy network.

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[65] Dasgupta and Wheeler (1996) maintain that citizen's complaints, while a good source of low cost information and avenue for community participation in environmental policy, cannot be a substitute for direct monitoring.

Conclusion

It is hypothesised that the institutional capacity to respond to pressure for more environmental protection is constrained by the degree of embeddedness of interactions amongst the actors. It further hypothesizes that both institutional change and policy reform need to be pursued to ensure effective policy reform. In order to ascertain the predominance of institutions, the policy networks approach is used to determine how institutional conditions mediate the relationship between pressure for environmental protection measures and policy reform. The policy network approach helps understand the roles of various actors involved in waste management, their resource dependencies and interactions in the MSW institutional context. The question is posed how the institutions in Delhi and London have responded to the challenge of achieving environmental sustainability in waste management? This is discussed in Part II of the thesis.

Chapter 3

Research design and methodology: letting the actors talk

3.1 Case study: data collection and analysis

3.2 Assumptions and limitations

The central question of the thesis is the role of institutional capacity in shaping environmental policy, more specifically, whether, and, if so, how institutional capacity of Delhi and London determines and conditions the policy formulation and implementation of MSW management. Working with the hypotheses that where there is increasing pressure for environmental protection measures, the institutional capacity to respond to pressure is negatively influenced by embeddedness (especially entrenched interests of the dominant actors in the policy network), the thesis focuses on studying the institutions and policy networks associated with MSW policy. It applies Jänicke's model of capacity for environmental policy reform to the two cases. The policy networks approach is used as a tool to understand the institutional framework.

The reason for this focus stems from wider concerns with sustainable development and the factors that contribute to its adoption as a commitment of MSW policy. In the preliminary course of this research, I considered and examined various factors that could potentially contribute to effective environmental policy (defined as introducing more environmental sustainability), ranging from economic to technological. However, these seemed insufficient to explain why the two cities failed to adopt and implement more environmentally sustainable MSW goals. Looking at the question more systematically, Jänicke's highly influential model provided a good frame of reference. Subsequently, the empirical investigation revealed that the institutional factor was more central and that formed the focus of my more detailed research and analysis.

This chapter explains the research methodology adopted to investigate the validity of the hypotheses identified. The case-study approach employed to test the hypotheses is the most appropriate choice given the objectives of the thesis. Methods of data collection, including semi-structured interviews, questionnaires, secondary publications and part-time work experience in organisations of interest are briefly outlined. Interviewee statements are analysed to determine the network and dynamism of the policy area of MSW in the two cases. The reasons for selecting the two cities are also discussed in this chapter.

3.1 Case study: data collection and data analysis

Case studies are the preferred strategy when 'how' and 'why' questions are being posed, the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context.[1] Case study as a strategy of inquiry relies on interviewing, observing and document analysis (Denzin and Lincoln, 2003). Given the research concentration of the thesis, the case study was, therefore, the most appropriate research methodology because it allowed focus on the two cities and an in-depth concentration on the policy of MSW. In-depth interviewing and secondary materials helped determine the perspectives of people from different organisations that impacted on the MSW policy in the two cities. Why the focus on cities and selection of Delhi and London?

Cities contribute disproportionately to environmental deterioration, both at local and global scales, as they are highly localised concentrations of population, production and consumption, creating intensive and localised demands on natural resources and water, air and so on to disperse waste (Williams and Haughton 1994). Also, it is in cities that the mixing of primary pollutants is most likely to give rise to secondary pollutants, such as photochemical smog. Cities also make great demands on their hinterlands, drawing in resources such as food, and discharging pollution. The pace and trend of urbanisation has a huge impact on the environmental profile of a city. Adverse consequences of growth in urban population can outweigh the positive impacts, unless specific policies and programmes for improving the governance and management of urban areas are pursued (NIUA, 2000). Different approaches based on population and land use can be used to classify urban areas (National Statistics online). In India, the term 'urban' refers to agglomerations with a minimum population of 5,000 inhabitants, with 75% of the male population engaged in non-agricultural pursuits, a density of population of at least 400 persons per sq km. and having a local body like Municipal Corporation or Cantonment Board (NIUA, 2000). The Rural and Urban Area Classification (2004) in the UK provides a national statistics standard for an urban area, where the bulk of the population falls in a settlement greater than 10,000 residents.[2] The urban population in India continues to grow at 3% per year (NIUA, 2000), while the UK experienced an overall growth of 0.3% between mid-1991 and mid-2003.[3] Urban and rural areas require different approaches to sustainable development.

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[1] See Yin (1994).

[2] National Statistics online (www.statistics.gov.uk/geography/glossary/u.asp accessed 18 December 2004).

[3] National Statistics online (www.statistics.gov.uk/CCI/nugget.asp?ID=6 accessed 18 January 2004).

The sustainable city seeks to improve its own natural and cultural environment whilst also meeting the conditions of global sustainability. At the Earth Summit in 1992, *Agenda 21* was hailed as the blueprint for a better world. More than 170 governments committed themselves to it, although their signature was not binding and the plan of action did not require ratification. Five years later, the Statement of Commitment from Earth Summit + 5, a UN General Assembly Special Session on progress since the Earth Summit, pronounced:

> We acknowledge that a number of positive results have been achieved but we are deeply concerned that the overall trends for sustainable development are worse today than they were in 1992. We emphasise that the implementation of Agenda 21 in a comprehensive manner remains vitally important and is more urgent now than ever.[4]

In practice, the objective of moving towards a more sustainable city needs to be set in the context of a broader sustainable society, and related to its contribution to global sustainable development (Leff, 1990; OECD, 1990). A sustainable city cannot be created in isolation of complex environmental, economic and social connections at local, regional and global scales. In seeking to understand the nature of urban sustainability it is important once again to emphasise that cities have never been self-sustaining throughout history (Williams and Haughton, 1994) because they are first and foremost dependent systems, relying on exchanges with surrounding areas (Douglas, 1989).[5] They can never be expected to become self-contained, economically, socially or environmentally. As White (1994) states cities are both victims and culprits in the unfolding drama of human-induced environmental change and part of our cities' difficulties lie in the fundamental metabolic problems of circulating nutrients, energy, air and water, and extruding wastes. Thus, to evaluate and compare two cities in terms of their waste management policies in order to achieve sustainable development is an important and urgent enquiry. With respect to the two cases, the distinction between the national and city policy networks is sometimes blurred because of the capital status of the cities under study. However, where possible, this distinction is made clear.

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[4] United Nations A/RES/S-19/2 Resolution adopted by the General Assembly (19 September 1997). (www.un.org/documents/ga/res/spec/aress19-2.htm accessed 19 July 2003).
[5] Williams and Haughton list the various definitions of sustainable urban development. Mainly stating its aim to produce a city that is 'user-friendly' and resourceful, in terms not only of its form and energy efficiency, but also its function as a place for living.

There are several reasons for selecting Delhi and London for a comparative study. Firstly, while one is developed, the other is developing.[6] Both cities make huge contributions to the Gross Domestic Product of their respective countries.[7] Managing domestic waste is a problem not restricted to the cities in developing countries alone (as explained in Chapter One). For instance, Jänicke's study (in 1997) looked at the environmental record of some developed countries, and found that there was deterioration in domestic waste management amongst other areas. The cities are also large producers of municipal waste in these countries. Delhi stands third amongst the five main cities of India. London, on the other hand, is the largest producer of MSW amongst the cities in the UK. This research focuses on comparing (both in terms of differences and similarities) Delhi and London on the approaches they adopt towards sustainable MSW management within their respective institutional frameworks. Further, perhaps most importantly, both cases have a professed municipal waste management policy along with the whole gamut of institutions as a backdrop to that policy area.

Secondly, for historical reasons they have an institutional framework that is similar in many ways: democratic political systems, the cabinet system, local government, a combination of staff and line agencies devoted to the formulation and the implementation of policy, etc. The tier of local government is responsible for implementing *Local Agenda 21* and the consequent sustainable MSW management strategies in the cities. Finally, procedural reasons make the countries attractive for such an analysis, for instance, ease of travel, and government publications in both the cases are in English.

Importantly, the deliberate choice of London from amongst more environmentally successful cities of the European Union allows for the exploration of the reasons why it fails or finds it difficult to adopt/implement more environmentally sound strategies. Though the research refers to the UK, it is specifically interested in England as a general background, and does not include Wales, Scotland and Northern Ireland in the analysis, especially in the chapter on national context.

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[6] The UK has a gross national income per capita of US $33,940 while India has US $620 (World Bank, 2005) (see news.bbc.co.uk for more details, accessed 18 August 2005).
[7] See for instance, Jha and Raghupathi (1995), Mayhew (2001).

Data collection

The interview is a common and powerful method (Denzin and Lincoln, 2003). However, it has its limitations, since it is not a 'neutral tool' (Fontana and Frey, 2003).[8] This thesis is primarily based on interviews as a method of data collection. Involving at least two people, interviews are open to influence by personal characteristics of both the interviewer and interviewee.[9] Some interviewees, in both London and Delhi, were slightly overwhelmed at the prospect of being interviewed, let alone by a student from the *London School of Economics*. For instance, one highly positioned bureaucrat postponed the interview twice, conceding at the interview that he needed to prepare for it. He also delegated the interview to his subordinates. Another interviewee explicitly stated his intention of seeking my help with travel and accommodation arrangements in London in return for the interview.[10] Hence, each interview was an interaction between two people in the role of interviewer and interviewee, and therefore, was subject to interpersonal skills of both.

The questions were substantive in nature with a comprehensive focus on the different facets of Jänicke's model.[11] The interviews, both in person and over the phone, were semi-structured and sometimes multiple.[12] The multiplicity arose because of a number of reasons: mainly time constraints, information constraints (where the interviewee got back with the information at a later date) and 'extractive' constraints. The latter occurred when the questions failed to extract clear answers from the interviewee, in which case they needed to be framed differently or asked in a different context. Also, often interviewees sought to convey information about aspects that they were most familiar with rather than restrict the interview to a flexible set of questions. The need for more information on these aspects along with the dynamism of the policy area required further contact with the interviewees (in person and over the phone). On occasions, the required follow-up interview was replaced by short questionnaires sent over email. Short questionnaires were also used in instances where the interviewee was unavailable for an interview in person or over the phone.

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[8] 'Interviewers are increasingly seen as active participants in interactions with respondents and interviews are seen as negotiated accomplishments of both interviews and respondents that are shaped by the contexts and situations in which they take place' (Fontana and Frey, 2003, pp. 90-91).
[9] Fontana and Frey, however, suggest that only the personal characteristics of the interviewer are relevant.
[10] I was unable to assist because he wanted accommodation for £10 per night.
[11] See Annex 3a for the sample questionnaire used for the London Boroughs. The same general questions were also used in Delhi with tailored context specific questions.
[12] Some interviews in Delhi were conducted in Hindi. Being a native speaker, I did not experience any language difficulty in conducting the interviews.

A variant of interviewing, the questionnaire is a 'self-administered interview' (Chadwick, 1984), which was carefully designed for each respondent depending on their established roles and their time considerations.[13] The open-ended questionnaires were generally based on principles of simplicity, although the theoretical leanings of the research required some concepts to be explained to generate a common understanding. Starting with background questions they gradually ventured into the main questions, for instance about the network and actors. However, they did not provide the opportunity to establish personal rapport (of first concern in interviewing, Whyte, 1984), and there was no possibility of probing or following up interesting leads (Chadwick, 1984) that an interview is generally able to offer. Besides, the danger that written responses might have resulted in increased concerns about confidentiality is also plausible, thereby distorting responses. This brings into question the issue of anonymity.

Usually, mainly the bureaucrats sought reassurance of confidentiality in both the cases. This, at times, resulted in variations of the techniques or the tactics (Denzin and Lincoln, 2003) employed during interviews. For instance, some interviewees were allowed to encapsulate their understandings of the waste scene before questions about any outstanding issues were asked. This helped 'break the ice'. Initially, an attempt was made to record the interviews (wherever possible) with the prior consent from the interviewees, though the realisation that interviewees responded and 'opened up' better without a recording device required recourse to simple note-taking.[14] These handwritten notes were later typed, and an attempt was made to ensure an accurate and verbatim account as far as possible. The main concern was protecting the subjects from any possible consequences of the research: a central problem for the social scientist (Chadwick *et al.*, 1984). This explicitly required the need to practice Denzin's and Lincoln's (2003) ethical considerations of ascertaining informed consent, right to privacy and protection from harm. The interviewees were given verbal and written assurances of anonymity. It helped acquire the trust of the interviewees, made them feel more at ease, and willing to part with information.

Interviews were conducted in two rounds: preliminary background research conducted in 2000 to ascertain the MSW policy area in the two cities (included contacting actors for general briefs on the policy), and final fieldwork in 2002 (Delhi) and 2003 (London). More definite exploratory

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[13] For instance, the questionnaire for a former Environment Minister (UK) comprised of just five questions, when it was conveyed by his secretary that he was too busy to answer any. She promised to try if the questionnaire was short; however, she was still not successful.
[14] Approximately 20-25% of the interviews in both the cities are recorded on tape. Unfortunately, the quality of recording for some is not very good.

questions in the second round of fieldwork were the backbone of the interviews (and open-ended questionnaires tailored for individual respondents, from the broad categories of government, non-government and industry.

Initially, the actors were identified on the basis of their roles in the policy process of MSW. Starting with NGOs, like WasteWatch, the interviewing snowballed to include actors who had some impact on the process. Some actors were clearly identifiable and required particular focus, like the Municipal Corporation of Delhi (MCD) which is responsible for the disposal of waste collected from the other local authorities (New Delhi Municipal Corporation and Delhi Cantonment Board) in Delhi.

The selected set of actors in each case included government officials of the department directly responsible for environmental protection, 'other' departments whose influence was evident from the interviews and the staff implementing the policies (including cleaners). The other actors included the industries, usually the target of regulation; the NGOs who attempted to influence policy, and last but not least, the households whose participation is an important pre-requisite for success. Identification of the actors progressed on two levels: one was a deliberate selection of the obvious actors, and then the organisations/individuals mentioned by the interviewees were followed up and interviewed ('snowballing'). Consequently, some actors were left out of the immediate network (see Annex 4b for Delhi and Annex 6a for London). The research does not lay claim to presenting a complete and comprehensive list of actors involved in MSW, though every effort was made to ensure that wide spectrum of actors were interviewed to account for the majority of opinions on the MSW policy. Therefore, this included actors who opposed/favoured change, were active/inactive in participating in policy decisions and regarded the policy process as a success/failure. The field visits and in-depth interviews (90 in total) and secondary sources (including internet resources) revealed not only a state of flux in both the cities, but also a high degree of awareness amongst the actors of each other's roles and influence.

The following selection confirms one exception to the rule of snowballing method. Unfortunately, it also exhibits that despite efforts to ensure validity in selecting these actors, inaccurate data had influenced the selection. London comprises of 33 Boroughs, with varied levels of recycling, therefore the bureaucrats from three boroughs: high (Sutton), medium (Barnet) and low achievers (Barking and Dagenham) were interviewed to ensure a local government perspective for

London.[15] However, it was later discovered that there was a problem with the way Sutton had calculated its recycling rates. According to Andy Bond (ECT):

> 'The definition of recycling needs to ensure that only material delivered to reprocessing sites is counted towards recycling. Currently, it states that if a local authority collects material with the intention of recycling, but subsequently does not, it still counts towards recycling....So there is a perverse incentive to collect, but not necessarily to recycle....Sutton council claimed a 40% recycling rate, but lot of the material they collected and sent to the MRF was contaminated and therefore failed to find a market. The Audit commission recently looked at Sutton and the recycling rate nearly halved.'[16]

Despite this setback, Sutton remained amongst the boroughs with high recycling figures which made it a good case to study in this research.

As part of the objective analysis of the diverse range of views collated, it is important to mention my unsuccessful quest for an interview with the UK's Office of the Deputy Prime Minister (ODPM). I contacted three people over two years and emailed four questionnaires to them (and others that they recommended). I was inevitably referred to either their policy statements, the Planning Policy Statement 10 (PPS10) and Planning Policy Guidance (PPG10), or to the Department for Environment, Food and Rural Affairs (DEFRA). However, I was not the only one unsuccessful. The National Waste Dialogues organised by The Environment Council (TEC) during the years 1999-2002, did not see much attendance from the ODPM. One finding of TEC project evaluating the success of the Dialogues, states that there were very few planners, either from local authorities or from national planning bodies, even though this is a key constituency in waste management (Warburton, 2003). Overall, London in comparison to Delhi was less detailed in data collection. It was relatively easier to distinguish between the 'core' and 'periphery' actors in Delhi, while in London often the guarded approach adopted by the interviewees made it more difficult. Thus, London made for a more challenging case study. Though to a certain extent, this obstacle was overcome by following up on interviews and secondary publications.

Documentation formed the second principal source of evidence for this research. Secondary sources, both governmental and others were studied. However they did not serve as 'surrogates' (Silverman, 2003) for interviewing. Government publications are used as an important source of

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[15] Based on statistics provided by the Department of Environment, Food and Rural Affairs.
[16] Quoted in FoE (2002) *Communities speak out on waste* (www.foe.co.uk/resource/reports/communities_speak_waste.pdf accessed 10 July 2003). See also letsrecycle.com (28 January 2002) *Sutton could lose awards after recycling figures fiasco.*

information to ascertain the general direction of the MSW policy in the two cases. The other secondary source included publications and reports by NGOs, the media, and international organisations, including those available on the internet.

Additionally, I also volunteered for various organisations in both the cities to get a first-hand understanding of the policy dynamics. In London, I worked for the *RMC Environment Fund* (maintaining the data base of projects falling under the Landfill Tax Credit Scheme), *The Environment Council* (evaluating the effectiveness of National Waste Dialogues organised in 2002), *Borough of Hackney* (for its door-to-door recycling project in high-rise and low-rise estates) and for the *Stakeholder Forum for Our Common Future* (organising stakeholder meetings to identify UK government's recommendations and policy perspectives on 'sustainable cities and communities' at the Earth Summit in Johannesburg in 2002). I volunteered for the *Centre for Science and Environment* in Delhi, working on a report on pollution, which concentrated on air pollution but allowed access to more information on solid waste management and importantly, insights into NGO relations and politics. The two internships with *Capacity 21* of the UNDP and *Equator Initiative* allowed insight into the workings of the United Nations.

Data analysis

The qualitative data collected from primary and secondary sources was analysed in order to determine the validity of the hypotheses. Individual responses to questions were examined for dominant themes. Thus, the basic units of data are statements made by the interviewees. These are presented in square brackets [ ] with the number corresponding to the index of interviewees provided in Annexes 3b (Delhi) and 3c (London). As explained earlier, their details remain anonymous in the list, except for identifying their general background. The research intensively analyses the statements of a limited sample to explore the depth and dynamics underlying MSW policy. Statements from the interviews and some secondary material provided foundational support to construct the network and analyse its constituents, nature, style and the actors' perceptions of the policy and mutual perceptions. The subsequent chapters detail the findings by using statements from interviewees. The interaction in the network helps ascertain the level of autonomy of the different actors within the network. For instance, the level of institutionalised influence from private actors (both industrial and NGOs) determines the degree of manoeuvre the state can have. The actors' preferences, in turn, are based on those that best express their interests.

Although analysis of a small number of cases inevitably raises questions about the generalisability of findings, the interpretations can be seen as valid for this particular project. The method of semi-structured interviews/questionnaires succeeded in large measure to capture the actors' perspectives. On some occasions, the responses included anecdotes. They aided in identifying the possible rationale for particular courses of action. Further, data was analysed according to the theoretical format provided by Jänicke's model and policy networks approach. Jänicke's model helped group the data into actors, strategies, systemic and structural contexts. The policy networks, as mentioned earlier, focus on the interactions between the different actors in the two cities. These two models provide what Denzin and Lincoln (2003) call 'paradigms for interpretation'.

3.2 Assumptions and limitations

Assumptions allowed me to treat some aspects as given in this research. The assumptions are categorised broadly as personal, conceptual and empirical in nature.

My belief in the need for practising sustainable development would probably constitute what Mouton and Marais (1990) call a 'domain assumption' about how the cities should approach sustainable MSW management, keeping the waste hierarchy as a benchmark.[17] The options of landfill and incineration are regarded as lower in environmental sustainability than reduction, reuse and recycling of waste. Cost considerations were treated in the background on the assumption that with the intervention of the state (either to introduce landfill tax/variable charging/subsidies on compost), certain degree of control could be exerted on the cost of each alternative. Recent studies (for example, Fullerton and Kinnaman, 2002) show that a decrease in landfilling can be primarily associated with a simultaneous increase in recycling. While non-governmental solutions to environmental degradation exist, this research assumes the government's position of prominence in setting the priorities of the society in which it operates. In line with Bogason (2000), this research assumes that the distinction between whether it is the actor that forms the structure in which he operates or the structure puts strong limits on actors, is not fruitful. He regards the process as ongoing, where 'actors perform roles under given

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[17] Denzin and Lincoln (2003) assert that traditionally readers were presented with the researcher's interpretation of the data, cleaned and streamlined and collapsed in rational, non-contradictory accounts and only recently has the tremendous, if unspoken, influence of the researcher as author been acknowledged.

constraints, but in doing so they change those very constraints step by step and may even be able to turn constraints into assets' (p. 40).[18]

Regarding the two cases, the general socio-economic and political framework of the two cities and countries is largely considered to be stable. Both are democracies with a largely politically active population. Some terms were used interchangeably in the thesis. For instance, the words 'state' and 'government'; 'industries' and 'markets' are used synonymously unless specified otherwise. The term 'non-governmental organisations' (NGOs) refers to NGOs involved in environmental issues. 'Civil society', on the other hand, is used broadly to include households, public-spirited local communities at large and NGOs. These assumptions allow for a certain degree of freedom in focusing on the aspects under investigation in this thesis.

While the assumptions, as stated above, clarify the issues that the thesis is concerned with, it also raises the question of limitations of the study. The limitations emerge from the study's intensive exploration and analysis of the two cases, which makes generalisations difficult. Although the case study made an appropriate research method, 'research especially one based on case studies, is invariably bound to specific contexts' (Mouton and Marias, 1990, p.3). Besides, it is widely acknowledged that 'no single method can grasp all the subtle variations in ongoing human experience' (Denzin and Lincoln, 2003, p. 31). Also, the field of MSW management amongst others involves technical issues, which are beyond the scope of this study. Further, the research focuses on this analysis without going into studies of urbanisation.[19] Urbanisation studies do contribute to understanding the policy issue but are beyond the scope of this thesis.

Conclusion

In conclusion, the research used the case study method to explore the role of institutional capacity in shaping environmental policy. Data collected from interviews (including questionnaires) and various secondary sources were analysed to understand MSW policy in the two cities of Delhi

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[18] See March and Olsen (1989), O'Riordan and Jordan (1999) for details on the distinction.

[19] Authors like Pye (cit. in Breese, 1969) assert that urbanisation is a critical process in the development of the modern nation state and also a profoundly disruptive process. Both its vital role and potentially disruptive consequences create perplexing problems of public policy. Mills and Becker (1986) show the link between increasing urbanisation resulting from economic development, and the consequent pressure on cities to maintain services at an equilibrium level.

and London. As with any study in social sciences, this research is subject to certain assumptions and limitations.

Chapter 4

'Talking' of garbage: the Indian approach

4.1 National organisational context

4.2 Principles and nature of environmental policy

4.3 Delhi: general introduction

The strategy in the Ninth Plan for the environment sector has been drawn up in accordance with the development needs of the nation. The measures required to protect the environment will be taken in such a way as to achieve sustainable development.

Planning Commission (Ninth Five Year Plan - Vol.2)

Environmental degradation in India is made worse by the problems of poverty, population growth and rapid urbanisation, especially in the area of MSW management. Unsanitary landfills, with the resultant leaching and ground water contamination, remain the predominant option for waste disposal. Further, the projected high growth in waste, along with concerns for efficiency and cost of waste collection and disposal services, make waste an increasingly important issue. However, the recent emphasis on adopting the waste hierarchy in policy circles is not implemented in practice.

This chapter provides a briefing on the national actors and their policy positions as identified during the fieldwork.[1] The organisations briefly profiled here fall under the category of 'actors' in Jänicke's model. However, their impact on the policy process as opponents or proponents of environmental protection and their status in the policy network is explored in the next chapter, which applies Jänicke's model to MSW policy in Delhi. As stated earlier, MSW policy in the city cannot be isolated from national perceptions of the environment; therefore, it is important to study the adopted principles of environmental protection in general and MSW policy in particular. The final section provides a general introduction to Delhi.

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[1] The square brackets indicate statements from interviewees numbered according to the interview index (see Annex 3a).

4.1 National organisational context

Numerous organisations, government, non-governmental and private, play a role in the environmental policy process in India. The 1980s, in particular, saw an increase in the number of NGOs working in the field of MSW at the national level.

Governmental organisations

National priorities are set by the Planning Commission (PC) of India.[2] The 1950 Parliamentary Resolution that set up the PC requires it to provide a long-term strategic vision and determine sectoral targets, along with 'promotional stimulus' to the economy to ensure growth in the desired direction. The PC's functions include assessing national resources and investigating possibilities of augmenting any deficiencies relative to the nation's needs, and formulating Plans for the most effective utilisation of resources.[3] The Prime Minister is the Chairman of the PC, which works under the overall guidance of the National Development Council. The Deputy Chairman and the full time members of the Commission (essentially experienced civil servants), provide guidance on the formulation of Five Year Plans, Annual Plans, State Plans, Monitoring Plan Programmes, Projects and Schemes.[4] The PC thus plays an integrative role in developing a holistic approach to policy formulation in critical areas of human and economic development. It also mediates in cases of disagreement between the states and central government ministries about the allocation of resources, and is responsible for creating a culture of high productivity and efficiency in the national government.

Environmental issues began to receive government attention only at the beginning of the Fourth Five Year Plan (1969-1974).[5] This Plan, launched before the first Earth Summit in 1992 (in Rio de Janeiro), articulated the need to harmonise development plans with the preservation of the

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[2] Five Year Plans are formulated by the PC for the most effective and balanced utilisation of resources and determining priorities for the country (http://planningcommission.nic.in/aboutus/history/about.htm accessed 16 March 2002).

[3] It also identifies the factors that retard and encourage economic development and conducts regular appraisals of the Plans.

[4] Information mainly from the PC (http://planningcommission.nic.in/ accessed 20 October 2003) & [13].

[5] Information presented here primarily from Ministry of Information and Broadcasting (1999). Annex 4a of the thesis summarises the increasing recognition given to the environment in the different Plans. See Annex 4b for other organisations that have a role in environmental protection but are not included here.

environment.[6] The then Prime Minister, Indira Gandhi, established a National Committee on Environmental Planning and Co-ordination (NCEPC) in 1972 within the then Department of Science and Technology. Furthermore, the 42nd constitutional amendment adopted in 1976 made protection of the environment the responsibility of both the state and citizens through Articles 48A and 51A respectively.[7] The amendment also moved the subjects of 'forests' and 'protection of wild animals and birds' from the State List to the Concurrent List.[8]

It was Indira Gandhi again who took the next environmental step when the general election in 1980 brought her back to power.[9] In that year, she set up a high profile committee, chaired by the Deputy Chairman of the PC, to review and recommend ways of strengthening existing legislative measures and administrative machinery concerning environmental protection. The Committee recommended creating a Department of Environment (DoE) at the centre to provide explicit recognition of the pivotal role that environmental conservation must play for sustainable national development.[10] A separate DoE was thus set up in 1980. The department was to function as a 'nodal' agency for environmental protection and eco-development, and for carrying out environmental appraisals of development projects through other ministries/agencies. With the creation of the DoE, the federal government began to take the environmental challenge more seriously, particularly since this also coincided with the launch of the Sixth Plan (1980-85), which contained an entire chapter on the environment.

Nevertheless, the term 'environment' was not given formal definition until 1986, with the enactment of the Environment Protection Act (EPA).[11] The EPA empowered central government to constitute an authority (or authorities) to exercise the powers and functions conferred on it by the Act. The government was required to introduce environmental protection measures by setting emissions standards, regulating the location of industries, the management of hazardous wastes,

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[6] Previous attempts were sporadic and did not fall under the environment umbrella. For instance, the National Water Supply and Sanitation Programme (1954) fell under health initiatives.

[7] Previously, this responsibility, listed as a 'Directive Principles of State Policy', was entrusted only to the state.

[8] The Indian Constitution (7th Schedule) divides legislative power between the centre and states. The Union List comprises subjects over which only the centre shall legislate, while the State List comprises subjects for the states. The Concurrent List contains subjects over which both may legislate, with legislation from the centre prevailing in case of conflict. See Kirpal (2002b) for details.

[9] Information primarily from Ministry of Information and Broadcasting (1999).

[10] PC (2002b).

[11] The 'environment' is broadly defined to include water, air and land and the interrelationships which exist among and between water, air and land, and human beings, other living creatures, plants, micro-organisms and property (EPA 1986, Section 2: 2a).

and protection of public health and welfare. Hence, the central government is responsible for the planning and execution of a nation-wide programme for the prevention, control and abatement of environmental pollution (EPA 1986). With this clearer and larger mandate, the DoE acquired the status of the Ministry of Environment and Forests (MoEF) in 1985.

Overall, the programmes initiated in the various Five Year Plans drafted by the PC continue to set the agenda for the MoEF. The Ministry, in turn, provides statutory guidelines for the state governments, for example the Municipal Solid Wastes (Management and Handling) Rules (2000). The MoEF occasionally establishes various task forces, like the National Task Force on Plastic Waste Management (1996) or the National Waste Management Council (1990) that focused on the disposal and utilisation of urban municipal, industrial and rural wastes. The Ministry undertakes national awareness drives and, in 1986, launched the multi-media 'National Environment Awareness Campaign' to inform diverse target groups about environmental policies/issues. A chain of information centres called Environmental Information Systems (ENVIS) have been set up focused on priority areas of the environment. The MoEF set up an Indian Centre for Promotion of Cleaner Technologies to create a database on available technologies, their performance, the sources where they could be obtained and investment needed. Several tax concessions, including a 100% tax allowance and investment subsidies, have been made widely available to promote clean technologies (MoEF, 1998).

The Ministry partners with the state DoEs and State Pollution Control Boards (SPCBs), amongst others, to carry out activities related to environmental protection. The effectiveness of compliance and monitoring thus depends upon the machinery in those states, namely the DoEs and SPCBs. In cases where legislation is framed by the central government, the SPCBs report to the Central Pollution Control Board (CPCB) regarding its implementation in the state. Therefore, the CPCB is the regulatory body that supports the MoEF.

The CPCB is the apex national body for assessment, monitoring and control of water and air pollution with executive responsibilities to enforce the Acts for Prevention and Control of Pollution of Water (1974), Water (1977) and Air (1981).[12] The Board is a statutory organisation constituted under the Water Act (1974), with powers of prosecution. The CPCB advises the central government on all matters concerning the prevention and control of air, water and noise

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[12] CPCB (www.cpcb.nic.in/).

pollution, and provides technical services to the MoEF in the implementation of the provisions of the EPA (1986). The MSW Rules of the CPCB require that cities prepare action plans based on population and waste generation. For cities generating waste in excess of 500 tonnes/day, the plans may include the following components: modernisation/mechanisation of waste storage and transportation facilities, and private entrepreneurship for waste collection, transportation, processing and disposal.

The SPCBs and Pollution Control Committees are subsidiaries of the CPCB in the states and union territories respectively. The Delhi Pollution Control Committee (DPCC), responsible to both the state government and the CPCB (for technical and advisory matters), is the regulatory agency that controls air, water and noise pollution, with powers to prosecute any violations. The CPCB regularly conducts surveys in different cities pertaining to vehicular and noise pollution, sanitation status, status of solid waste and others to compile a national database.[13] It has a 'Cell' to interact and provide financial assistance to NGOs in conducting mass awareness programmes for the prevention and control of pollution.

The Ministry of Non-Conventional Energy Sources (MNES) is another central government ministry created in 1992 in recognition of the vast potential of renewable energy in the country.[14] It provides financial incentives for renewable energy programmes and WTE initiatives. The National Programme on Energy Recovery from Urban and Industrial Wastes (started during 1995) provides financial assistance, as capital and interest subsidy, to project developers and incentives to Urban Local Bodies (ULBs). The Municipal Corporation of Delhi (local government in Delhi), among others, sets up projects for recovery of energy from urban and industrial wastes.[15]

A unique initiative in Delhi, as the national capital, is to counter rapid urbanisation and over-crowding by diverting the population and economic activities to satellite towns.[16] Towards this objective, the Planning Board Act (1985) was passed by the legislatures of the participating states

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[13] The CPCB, in consultation with SPCBs has identified 22 critically polluted areas in the country that need special attention for control of pollution; Najafgarh in Delhi is one of them.
[14] *Renewable Energy Programmes in India: Financial & Fiscal Incentives 2002-2003*, MNES. (http://mnes.nic.in accessed 14 August 2003).
[15] *Renewable Energy Programmes in India: Financial & Fiscal Incentives 2002-2003*, MNES. Tiwari R. C. (Principal Scientific Office), MNES notification No. 6/6/2000 U&I (22.5.2000).
[16] The state governments are responsible for urbanisation, though the National Commission on Urbanisation and the Urban Agenda of the central government provide guidelines for state policy.

of the region (Haryana, Uttar Pradesh, Rajasthan and Delhi), which created the National Capital Region (formed in 1986).[17]

The Supreme Court of India (SC) is the national body with responsibility for environmental litigation. The Indian judiciary, a spectator to environmental despoliation for more than two decades, has since the 1990s assumed a pro-active role of public educator, policy maker and super-administrator where environmental issues are concerned (Divan and Rosencranz, 2001). According to Viswas (1996), the SC has triggered around 200 environmental policy measures. The judiciary thus plays an important role in instigating environmental policy.

The SC and various state High Courts have instituted 'green benches' to deal with environmental cases [19c]. The judgments are often based on reports and recommendations of expert committees constituted especially for that case. India has a large body of environmental laws and regulations, including the *increasing body of judicial decisions* affecting industrial activities that generate pollution.[18] The key factor behind this activist role of the judiciary is the rise of Public Interest Litigation (PIL). PIL is a part of participative justice (Kaur, 2001; Kirpal, 2002b; Iyer, 2003) that allows citizens/groups to litigate in the interests of the general public.[19] Since 1982, the SC started to permit PILs at the instance of 'public spirited citizens' for the enforcement of constitutional and legal rights of any person or group who, because, of their socially/economically disadvantaged position, are unable to approach the court for relief.[20] The recognised interpretive criteria of PILs and the intentions behind them were relaxed, including departure from the 'proof of injury' approach and generally focusing on problem-solving rather than party conflict, thereby consolidating and perpetuating the trend of environmental litigation.[21] Generally, the SC focuses on a narrower range of issues than the Indian Parliament and has the discretion to dismiss any case that it considers not important enough to warrant its attention [19, 19c].

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[17] The NCR spread over 30,242 sq km covers parts of the four states (White Paper on Pollution in Delhi, 1997).
[18] National Productivity Council Waste Minimisation Circle (http://wmc.nic.in/about-wmc.asp accessed 23 October 2003).
[19] The Article 39-A of the Constitution provides citizens with 'Right of Access to Courts'.
[20] SC Ruling on *Peoples Union for Democratic Rights* v. *Union of India* (A.I.R. 1982, SC 1473). In fact, in *M.C. Mehta* v. *Union of India* (1988, 1 SCC 471), a PIL concerning the pollution of the river Ganga, the SC held that, although the petitioner was not a riparian owner, he was entitled to approach the court for the enforcement of statutory provisions to protect the people who use water from the river (Kaur, 2001).
[21] However there are still strict rules about what qualifies as PIL, to prevent its abuse (see Muralidhar, 1997).

Non-governmental Organisations

The following organisations are the prominent actors in the field of waste management from the non-governmental sector. The *Centre for Science and Environment* (CSE), founded in 1980 by Anil Agarwal, is an independent, public interest organisation which aims to increase public awareness of science, technology, environment and development by pushing 'the government to create frameworks for people and communities to act on their own'.[22] It has also been responsible for administering the Green Rating Project whereby environmental performance of industrial units is assessed on more than 150 environmental indicators.[23]

Chintan, another NGO, aims to improve the lives of rag pickers in Delhi through formal education, workshops and training programmes, including awareness of their rights in relation to the police [7].[24] *Vatavaran* focuses exclusively on urban household waste management and came about through the efforts of the founder, Dr. Iqbal Malik, to resolve the problem of waste in her own neighbourhood. She started 'Cleaning Brigades' which employ youth from poor backgrounds to collect and compost garbage from households for a monthly fee [3]. Though regarded as hugely successful, the model is yet to be implemented on a wider scale than three project neighbourhoods of Delhi.

Development Alternatives (DA) was established in 1983 with the aim of promoting sustainable national development.[25] The strategies adopted include innovating through design, development and dissemination of appropriate technologies, effective institutional systems and environmental and resource management methods.[26] *Srishti* (better known by its off shoot '*Toxics Links*') is an NGO that works on issues of toxic waste with like-minded organisations.[27] It also aims to influence policy as a means of change rather than create alternative models of service delivery. Interestingly, three of the NGOs (*Chintan, Vatavaran* and *Toxics Links*) are splinter groups of this

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[22] CSE (www.cseindia.org/html/aboutus/index.htm accessed 12 August 2003).
[23] The project is built on voluntary disclosure by companies and therefore the rating system automatically provides a 'reputational incentive' (Chapter 9, Annual Report 2002-2003, MoEF (www.envfor.nic.in/report/0203/ar-main.htm accessed 25 October 2003).
[24] Ragpickers are defined as people who pick up recyclable wastes from waste bins and roadsides (GNCTD, 2001). They are usually territorial and sell recyclables to the same small trader (*kabadiwallah*) every day.
[25] DA (www.devalt.org/ accessed 20 October 2003).
[26] DA (www.devalt.org/mission.htm accessed 21 October 2003).
[27] Toxics Link (www.toxicslink.org/ accessed 20 October 2003).

organisation.[28] The *Tata Energy Resources Institute* (TERI, now *The Energy Research Institute*) undertakes policy research on issues of energy, waste and general approaches to sustainable development with an aim to change practice. It has often been commissioned by the government and international organisations for research into diverse issues. Another NGO, called *Conserve* has diverse environmental objectives that range from creating eco-clubs in schools to improving waste service provision [4]. It was funded by the MoEF to set up a composting plant in one neighbourhood in Delhi (Safdarjang Enclave).

Industry

The Confederation of Indian Industry (CII) is the main representative of industrial interests. Essentially, a non-government, not-for-profit, industry-led and -managed organisation, it plays a proactive role in India's development process by representing the broad interests of industries in creating and sustaining an environment conducive to industrial growth.[29] It partners industry and government alike through advisory and consultative processes.[30] The Environment Management Division (EMD) of the CII, provides services like advice on environmental policy, technology, in-company and inter-company training programmes and information dissemination. The main aim of the EMD is to build in-house capabilities in Indian industry to address environmental issues effectively and pro-actively. The Division has established a credible partnership with policy makers, which enables it to provide industry access to the policy making agencies.[31] It is represented on 28 different committees of the national and state governments, dealing with issues ranging from eco-labelling to waste management (mainly as a member of National Waste Management Council). It has also conducted training for regulatory and enforcement agencies. It seeks to convince industry that pollution prevention pays and environmental protection makes sound business sense [31]. Apart from liaising with this representative body, occasionally the government directly consults the companies most relevant to a particular policy issue, like Reliance Industries Ltd.[32] The Reliance Group, founded by Dhirubhai Ambani, is India's largest business house with a total revenue equivalent to about 3.5% of India's Gross Domestic Product, and areas of interest that span exploration and production of oil and gas to petrochemicals

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[28] Exploring the competitive element of NGO politics is beyond the scope of this thesis.
[29] CII (www.ciionline.org/AboutCII/44/default.asp accessed 20 October 2003).
[30] CII (www.ciionline.org/AboutCII/44/default.asp accessed 20 October 2003).
[31] CII (www.ciionline.org/AboutCII/44/default.asp accessed 20 October 2003).
[32] No representative of this company was available for an interview.

(polyester, polymers and intermediates).[33] Reliance Industries Ltd., part of the Reliance Group, is India's largest producer of polymers, with a market share of 48%.[34]

International organisations

International agreements and obligations are also important in the field of MSW. Article 253 of the Constitution empowers Parliament to legislate in accordance with India's international obligations. It is often under international pressure that India attempts to bring its environmental record into line with the prevailing international standards (Krishnan, 1997). One of the most recent examples is the use of Euro norms (I and II) for preventing vehicular pollution (Bose and Gupta, 1999).[35] International influence is not restricted to the government. Export companies have to consider the growing preference for green products and processes in client countries (Krishnan, 1997). For instance, the German ban on Azo dyes forced Indian dye and pigment manufacturers to alter their product profiles. However, the pressure is relatively small, especially in the field of waste management, where India regularly serves as a dumping ground for waste exported from developed countries.[36]

Various international organisations are also directly or indirectly involved in environmental projects around the country.[37] The International Cooperation and Sustainable Division (IC&SD) in the MoEF works on improving international environmental cooperation and since 2002 is entrusted with the additional responsibility of coordinating sustainable development activities. IC&SD is the nodal point within the Ministry for liaisons with the United Nations Environment Programme and South Asia Cooperative Environment Programme. It handles bilateral issues and matters pertaining to multilateral bodies such as the Commission on Sustainable Development (CSD), the Environment Support Programme of United Nations Development Programme (UNDP) under Country Cooperation Framework-I, the Global Environment Facility and regional

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[33] Reliance (http://www.ril.com/eportal/about_home.html (accessed 15 March 2006). In addition, it states that the Group contributes nearly 10% of India's indirect tax revenue and over 6% of India's exports.
[34] Reliance Industries Ltd. (http://www.ril.com/business/polymers/polymershome.html accessed 18 December 2005). A polymer is a natural or man-made material formed by combining smaller units called monomers. In common parlance, it refers to various types of plastics.
[35] Implemented in the EU, Euro norms refer to permissible emission levels from both petrol and diesel vehicles. The Indian government has adopted the Euro norms for fuel quality and method of testing.
[36] *Growing concern over India's e-waste* on BBC (http://news.bbc.co.uk/2/hi/south_asia/3307815.stm accessed 10 January 2004), Samanta (2004).
[37] International organisations with an indirect impact are not covered here, for instance, the Asian Development Bank.

bodies like the Economic and Social Commission for Asia and the Pacific, the South Asian Association for Regional Cooperation, European Union (EU) and the India-Canada Environment Facility.[38] Interestingly, the Ministry of External Affairs is the nodal ministry for CSD matters. The Commission was set up in 1993 under the UN's Economic and Social Council and provides technical support for implementing *Agenda 21*. The national reports on progress achieved on the themes selected for each CSD session are prepared alternately by the Ministry of External Affairs and the MoEF.

The Five Year Plans generally incorporate an element of international cooperation in their recommended approach to environmental issues. The Ninth Plan mentions the World Bank (WB) aided industrial pollution control projects in various states for strengthening and upgrading laboratories, and the provision of monitoring equipment and training of officers. Other examples include the Indian Centre for Promotion of Cleaner Technologies established with WB assistance to create a data-base on available technologies and associated issues.[39] Also, the idea for the Delhi Urban Environment and Infrastructure Improvement Project (DUEIIP) was initiated in response to the joint concerns of the Government of India and the WB (MoEF, 2000). The UNDP similarly supports hands-on projects which aim to serve as blueprints. For instance, the Urban Services Environmental Rating System (USERS) was a UNDP funded project defined by the MoEF and implemented by TERI. The project aimed to create a new 'pressure mechanism' by highlighting environmental issues and facilitating information sharing, thereby enabling the adoption of better standards/practices.[40] In addition, states often take the initiative, for example, the Delhi government collaborates with the Australian national government to establish a safe, scientific and effective bio-medical waste management system.[41] Thus, there is a recognised space for international organisations to impact on India's progress on sustainable development.

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[38] *Annual Report 2002-2003*, MoEF (http://envfor.nic.in/report/0203/ar-main.htm accessed 12 August 2003).

[39] The Urban Management Project brought the MoEF and WB together to: define ways of improving the management of air quality, waste water and solid waste in Delhi; prepare high priority interventions necessary for the management practices to be effective; and identify long-term investment needs in urban infrastructure services. It further highlights the role of improved household domestic practices and self-help schemes. The project also reviewed the costs and benefits of existing waste collection and management systems and standardised monitoring results to facilitate ease of comparison to increase public awareness about environmental quality.

[40] See TERI (1999). The interviews, however, did not reveal knowledge of this project.

[41] *Hindustan Times* (8 February 2000) Delhi Government, Australia sign MoU for waste management system. Again, the interviews did not reveal knowledge of this collaboration.

4.2 Principles and nature of environmental policy

Certain principles and the nature of India's environmental policy in the broad context of sustainable development, to a large extent explain the practice of MSW management.[42]

Sustainable development in the Indian context

The concept of sustainable development has helped make environmental protection measures more prominent. However, it has also allowed economic concerns to be prioritised over those of the environment. Sustainable development is interpreted to mean development that contributes firstly to reduce poverty (or combating poverty as a prerequisite for sustainable development (MoEF, 1998), and secondly to reduce the environmentally degrading consequences of that poverty. The government identified poverty as the biggest polluter. Environmental problems were not seen as side effects of excessive industrialisation but, rather, reflected the inadequacy of development.[43] For instance, the empowered committee set up in 1980 which recommended the creation of a DoE at the centre, did so with the explicit objective of ensuring environmental conservation *for* sustainable national development.[44] 'Development must satisfy the basic needs of the poorest, promote social justice, provide employment; and of course [it] has to be sustainable' [13]. The concepts of social justice and equity, together with human rights, thus also influence the direction of environmental policy. However, poverty reduction, in itself, does not equal sustainable development nor can it ensure environmental protection. Overall this makes the implications of the commitment to sustainable development unclear.

The lack of clarity is also reflected in the judicial decisions. In certain rulings, the SC has prioritised the environment over development. In *MC Mehta* v. *Union of India* (1988, SCC 482 at para 22), the Court held that 'life, public health and ecology have priority over unemployment and loss of revenue problem' (Kirpal, 2002). The relaxation of the rule of *locus standi*, allowing Mehta to be a legitimate party, and departure from the 'proof of injury' approach, indicated a

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[42] See Annex 4c for an overview of environmental legislation. Even if sustainable development is not mentioned explicitly in the titles of various policy documents, it is implied [18].
[43] Prime Minister Vajpayee's inaugural speech at the Delhi Sustainable Development Summit in 2001 (http://static.teriin.org/dsds/dsds2002/day1/index.htm accessed 20 July 2003).
[44] Ministry of Information and Broadcasting (1999), PC (2002b). Also for example, the criteria for measuring the success of the Delhi Urban Environment and Infrastructure Improvement Project (DUEIIP) include equity (distribution impact, affordability, rationality), efficiency (environmental quality, cost effectiveness), effectiveness (viability, health impact, social acceptability) and sustainability (long term effectiveness) (MoEF and NCT, 2001).

strong commitment to environmental concerns on the part of the higher judiciary (Kirpal, 2002b). In addition, the SC noted elsewhere that the principle of sustainable development would be violated if there were substantial adverse ecological effects caused by industry.[45] Similarly, in 1995, the SC outlawed forest-based industry, recognising the principle of intergenerational equity as central to the conservation of forest resources and sustainable development.[46] Yet, in 2000, in a judgment permitting the construction of a controversial government dam to go ahead, the same SC observed that sustainable development means what type or extent of development can take place, which can be sustained by nature/ecology with or without mitigation.[47] Further, in order to resolve the conflict between the state's interest in the preservation of environmental resources and the interest of communities in extracting value from those same resources, the courts have evolved a 'right to livelihood' for those communities affected by new state-run conservation initiatives (Kirpal, 2002a; 2002b). However, on occasions, the judgments have overlooked the social implications like unemployment.[48]

Local grassroots movements for environmental protection often aim to safeguard the livelihoods of local populations. For instance, the *Narmada Bachao Andolan* saw activists, including the well-known Medha Patkar, join tribal and indigenous peoples in hunger strikes to protest against plans to construct a dam which would submerge their lands and livelihoods. Another example is the *Chipko* movement, which saved local forests from commercial felling but in the name of generating economic benefits and better employment conditions rather than in protecting the environment (Agarwal and Yokozuka, 2002).[49] It was a movement to make the use of local forests freely available to the local population in order 'to ensure that the subsistence needs of the villagers could be met more easily' (Peritore, 1999, p.255).[50] Thus, 'environmental movements'

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[45] *Indian Council for Enviro-Legal Action* v. *Union of India* (*CRZ Notification case*) (1996) 5 SCC 281 in Kirpal (2002).

[46] *State of Himachal Pradesh* v. *Ganesh Wood Products* (1995) 6 SCC 363 in Kirpal (2002a).

[47] *Narmada Bachao Andolan* v. *Union of India* (2000) 10 SCC 664 at 727. The case was filed against government plans to build a dam. See www.narmada.org/ for more details.

[48] Warrier (1997) states the SC order to close down industries in residential areas in Delhi required the companies to pay six years' salary to workers. Yet the SC did not monitor the implementation of this order, causing resentment from otherwise environment-supportive sections of society.

[49] The Chipko (means 'stick to') movement in the 1960s sought to alter the government's position on forest management in the Middle Himalayas. The local population 'hugged' trees to prevent them from being felled, hence the term *Chipko*.

[50] According to Peritore, the strict preservation of forests regime attempted in early 1980-90s excluded natives from the forests, disbanded cooperatives and worsened unemployment, mainly because the local people lacked political access. This switched popular enthusiasm for Chipko into a strong political movement for the creation of Uttaranchal: a new state with the core demand of popular control over

may not be purely – or even pro- – environmental in their objectives but could represent conflicting political and economic concerns.

There have been some attempts by the government to integrate environment and development objectives. The MoEF constituted a committee in December 1988 to recommend a framework and an action plan for the conservation of resources. The resultant National Conservation Strategy and Policy Statement on Environment and Development (June 1992) made clear that the implementation of conservation and sustainable development would require integration and internalisation of environmental considerations in the policies of various sectors (MoEF, 1992a). Towards that objective it lists: curtailment of consumerism, use of environment friendly products and processes, and low waste generating technologies through conscious efforts and appropriate economic policies, including pricing of natural resources and fiscal incentives and disincentives as guiding factors. The *Strategy* therefore laid down broad guidelines to ensure inter-sectoral policy integration and coordination (MoEF, 1992a). Importantly, it distinguished between two kinds of environmental problems in India: those arising as negative effects of the very process of development, and those arising from conditions of poverty and under-development. This highlighted a shift in regarding *both* poverty and development as raising attention to environmental concerns. The latest Plan (Tenth, 2002-2007) maintains this gradual paradigm shift by asserting that economic growth alone is not the objective of national planning and the developmental objective is not to be measured in terms of increase in GDP or per capita income alone. It recognises the importance of enhancing human welfare as the determinant factor of the developmental strategy.[51]

Environmental policy

In general, environmental policy in India has been reactive and *ad hoc*, with specially created Committees and Task Forces often entrusted with responsibility for determining the policy [4, 6, 11b, 18]. The main environmental law, the EPA, was enacted in 1986 after the Bhopal gas tragedy in 1984.[52] The plague epidemic in Surat 1994, caused by inadequate sanitation, brought

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developmental resources and against strict national and state regulations that constrained local use of the forests (Peritore). This state has since been created.

[51] Earlier Plans had generally contributed to this shift, like the Eighth Plan (1992-1997) which stated that the environment, ecology and development must be balanced to meet societal needs.

[52] The EPA is supported by the Water (Prevention and Control of Pollution) Act, 1981 (amended in 1988).

the issue of MSW into prominence.[53] Subsequently, in 1995, the PC constituted a high-powered Committee (Bajaj Committee) on Urban Solid Waste Management in India. The plague also provided the context for the creation of the National Task Force on Plastic Waste Management, constituted in 1996 to draft policy on plastic and its uses. The dengue epidemic in Delhi in 1996 was exacerbated by rain soaked and uncleared garbage dumps which created ideal sites for breeding of mosquitoes (MoEF, 2000). Thus, environmental policy is frequently drafted in . response to environmental disasters or to minimise recurrence of national calamities.

However, the solutions offered are random and temporary and often not well thought out. For example, the White Paper (1997) mentions the case of the fire in Jwalapuri in 1995, which was the result of the hazardous plastic recycling industry. The fact-finding committee merely decided to shift the plastics waste market from Jwalapuri to Tikri Kalan. It made no recommendations to ensure use of appropriate environmental technology and the safety of people employed in the industry. The callous attitude of decision makers is also obvious in another example, when the landfill site at Hastsal Khera was found to be emitting poisonous gas which local slum residents utilised for cooking (by laying a 10 feet deep pipe into the pit): the then CSE (Conservancy and Sanitation Engineering department) director C.M. Vij issued 'precautionary notices' to the residents.[54] In addition, despite official recognition of the role of the environment, only 1% of the total financial outlay of the state and central government is allocated to the environment and forestry sector and 'even this is not being fully utilised'.[55]

Until the early 1990s, environmental policy in India focused largely on industrial pollution. End-of-pipe solutions formed the basis of pollution control rather than an integrated preventative pollution control strategy. This merely transferred pollutants from one media to another through the various treatment processes.[56] Though there are some fiscal incentives for installation of pollution control equipment, the government also adopts the 'relocation' approach of merely transferring polluting industries to a new location. The CPCB until late 1990s addressed the issue of MSW through attempting to prevent pollution of air and water. It is only recently that a MSW

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[53] The immediate cause of the plague was identified as constant rain and repeated floods which caused water logging in low-lying areas because of a faulty and clogged drainage system (Ghosh, 1998). It was later concluded that plastic carry bags, amongst other substances, had clogged the drains.
[54]*Times of India* 'Waste dump emitting poisonous gas' (7 March 1995) (quoted in Malik 1999). The notices cautioned residents to be careful, but did not suggest relocation or closure of the landfill site.
[55] PC, *Mid-term appraisal highlights of Ninth Plan (1997-2002)* (http://planningcommission.nic.in/plans/mta/midf.htm accessed 10 December 2003).
[56] National Productivity Council Waste Minimisation Circle (http://wmc.nic.in/about-wmc.asp accessed 23 October 2003).

policy has been specified in the MSW Management and Handling Rules 2000 (in the words of one MoEF official [14d] the 'Bible' of MSW).

The Policy Statement for the Abatement of Pollution (in 1992 by MoEF) did shift the emphasis from simply defining objectives to implementing them through maximum use of a mix of instruments in the form of legislation and regulation, fiscal incentives, voluntary agreements, educational programmes and information campaigns.[57] For the first time, the use of market-based instruments to control pollution at the point-of-source was recommended [31]. It laid emphasis on pollution prevention in place of the conventional end-of-pipe treatment and identified the adoption of best available and practicable technologies as the key element for pollution prevention. It also recommended a certification of environment-friendly goods to encourage environmental consciousness amongst consumers. However, Policy Statements are not enforceable in a court of law, which dilutes their impact.

Judicial activism has played an important role in the formulation of policy on environmental issues, as explained earlier. For instance, the SC made the precautionary principle a fundamental part of its interpretation of environmental policy.[58] It also recognised the 'polluter pays' principle as a fundamental objective of government policy and placed the burden of proof on the industry likely to cause pollution to show that the ecological balance will be maintained (Kirpal, 2002a). The National Task Force on Plastic Waste Management (1996) recommendations resulted in the Recycling of Plastics Manufacture and Usage Rules (1999), which also mention self-regulation by the members of the Plastics Industry Association.[59] Even so, most of these principles merely remain on paper (Policy Statement, 1992; National Conservation Strategy, 1992; MoEF and NCT, 2001). Further, releasing information on defaulters and general environmental performance of firms is yet to be part of the regulatory culture. The National Task Force (1996) sought to introduce extended producer responsibility for Poly-Ethylene Terephthalate bottles (plastic bottles) by asking industries to set up mandatory 'take back' schemes. However, by showing its inability to make such schemes financially viable, industry was able to evade producer

[57] MoEF (1992b). For example, financial assistance to small-scale industries that invest capital in common effluent treatment plants.

[58] *Vellore Citizens' Welfare Forum* v. *Union of India* (1996) 5 SCC 647 and *A.P. Pollution Control Board* v. *Prof. M.V. Nayudu* (1999) 2 SCC 718 in Kirpal (2002).

[59] The Rules are based on Guidelines for Recycling of Plastics issued by the Bureau of Indian Standards specification (MoEF Notification 'The Guidelines for Recycling of Plastics', IS 14534: 1998, The Gazette of India, Extraordinary PART II, Sec. 3ii). The other recommendations include raising public awareness, upgrading methodology of waste collection and segregation, recycling and reprocessing systems, and promoting end-product applications with desired recyclable component.

responsibility and successfully moved the discussion from mandatory to voluntary take-back schemes.

Concerns over health and quality of life also bear significantly on the development of environmental policy. As early as the Fifth Plan (1974-1978) health and nutrition standards were introduced with the aim of improving the quality of life of the poor. More broadly, the judiciary has taken a liberal view of ensuring social justice and the protection of human rights (Kirpal, 2002a; 2002b). For Kirpal, the former Chief Justice of India, sustainable development would mean the commitment of resources towards continued improvement in living standards (2002a). The right to life, enshrined in Article 21, has been expanded in various rulings to mean a right to a wholesome environment and livelihood.[60] This now forms the 'bed-rock' of environmental legislation in India.[61] Certainly, with respect to waste management, there remain huge equity issues in service provision. In 1985, 49.6 million people in urban areas and 4.03 million in rural areas had sanitation facilities; by 1990 the numbers had increased to 99.7 million and 14.79 million respectively.[62] Nevertheless, out of the total population of 846 million in 1991, only about 14% enjoyed adequate sanitation.[63]

Municipal Solid Waste policy

After looking at the broad framework of sustainable development and environmental policy in India, this sub-section shifts focus to the specifics of MSW policy. MSW, in particular, includes commercial and residential wastes generated in municipal or notified areas, in either solid or semi-solid form, excluding industrial hazardous wastes but including treated bio-medical wastes.[64] The *Strategy* of 1992 sought integrated improvements in the infrastructure of waste management such as solid waste disposal, energy recovery systems and transportation. The 1986 EPA authorised the MoEF to notify rules for the management of waste resulting in the Hazardous Wastes (Management and Handling) Rules 1989 (amended in 2000) for industrial wastes, Bio-

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[60] See Kirpal (2002a; 2002b).

[61] CPCB *Public Interest Litigations* (http://cpcb.delhi.nic.in/legislation/ch1dec02a.htm accessed 21 September 2003). The other important Articles are 252 and 253 of the Constitution.

[62] Eighth Plan (1992-97), PC.

[63] About 60% of urban population in the country has access to sewerage and low cost sanitation facilities with Himachal Pradesh (93%) topping the list, compiled from information furnished by different state implementing agencies like Public Health Engineering Departments, Water Supply and Sewerage Boards (as on 31.3.2000) (Press Information Bureau Releases on Urban Development and Alleviation of Poverty, 30 April 2003).

[64] The Municipal Solid Wastes (Management and Handling) Rules (2000), MoEF.

medical Wastes (Management and Handling) Rules 1998 for hospital wastes, and Municipal Solid Wastes (Management and Handling) Rules 2000 for municipal wastes. The MSW Rules (2000) aimed to provide scientific management of MSW; ensure proper collection, segregation, transportation, processing and disposal of solid wastes; and upgrade existing facilities to arrest contamination of soil and ground water.[65] The Tenth Plan states that environmentally sound management must go beyond mere safe disposal or recovery (of recyclables) to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption. Importantly, it regards integrated waste management as a unique opportunity to reconcile development with environmental protection. Further, the Plan calls for a stricter enforcement of various MoEF Rules on MSW. These have become the overarching guidelines for dealing with waste.

It is important to point out that MSW policy originates at three different levels: national/central (mainly from the MoEF and CPCB), state (DoE in the case of Delhi) and local governments (such as the Municipal Corporation of Delhi). The state and local governments have to abide by the general guidelines from the national government, especially if they are statutory. Different states of India have either utilised this proviso to enact new state-specific legislation or simply interpreted the national legislation in the context of the state. For instance, the DoE notified Delhi Plastic Bags (Manufacture, Sale and Usage) and Non Bio-degradable Garbage (Control) Act 2000. MSW Management is one of the important obligatory functions of the ULBs in India. The *MSW Rules* (2000) require the municipal authority to organise house-to-house collection of solid wastes through any of the methods: community bin collection, house-to-house collection, collection on regular pre-informed timings by ringing bells (without exceeding permissible noise levels). Further, it states that it shall be the responsibility of the generator (residents) of wastes to avoid littering and ensure delivery of wastes in accordance with the collection and segregation system to be notified by the municipal authority.

Landfill remains the main option of waste disposal, averaging about 91% (CPCB, 1997; Barman Committee, 1999), although the policy supports composting, recycling, and even WTE plants despite the low calorific value of the municipal waste generated. 'For the total urban population of nearly 300 million in India about 45,000 hectares of urban land is required at the rate of 1.5 sq

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[65] On the Barman Committee's recommendation, the Technology Mission for SWM was created under the Ministry of Urban Development for a period of five years, to provide technical assistance to ULBs, in order to implement the MSW Rules and aid in the reform of waste management nation-wide (CPCB *Management of MSW*, Booklet; CPCB, 2003).

m. for the next 25 years....For a city like Delhi, about 1950 hectares is needed for landfills' (Reddy, 2003, p. 4).[66] Most of the landfill sites in India are uncontrolled dumps, where domestic, commercial, industrial and hospital wastes are dumped together (CPCB, 1997; Barman Committee, 1999). Such dumps are the principal source of surface water and groundwater contamination.[67] Properly constructed sanitary landfills are yet to be built in the country (NIUA, 1999, p. 3). The selection of landfill sites in areas under the jurisdiction of Development Authorities is done by these authorities. A site is selected after an examination of relevant environmental issues. Once the sites are identified, they are handed over to the concerned municipal authority for development, operation and maintenance.

The composition of Indian MSW (see Table 4.1) is quite different from that of US and Europe, with low calorific value, high moisture content, a high proportion of organic matter, earth, sand and grit (Srishti, 1998). According to one estimate the projected financial requirements for solid waste management in India by the year 2025 is Rs. 5,230 million.[68] According to Reddy (2003), composting could reduce over 70% of the volume of solid waste in India and also has huge employment potential.[69]

Table 4.1: Composition of Indian MSW

Composition	Percentage (%)
Biodegradable	52
Metal scrap, rubber, textiles, leather, etc.	11
Stones and rubble	8
Fine earth and sand	23
Plastics	1
Paper and paper products	5

Source: *Srishti* (1998).

Growing levels of waste generation compound waste collection and disposal problems. In 1991, the urban areas produced 23.86 million tonnes of waste, which in 2001 increased to almost 40 million tonnes, with many of the smaller cities and towns having no sanitation facilities.[70] The

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[66] 1 hectare = 2.47 acres.
[67] World Resources *et al.* (1996); Barman Committee (1999).
[68] CPCB *Management of Municipal Solid Waste*, Booklet.
[69] At least 10 billion man-days of work can be created to benefit the unemployed (Reddy).
[70] Projected to increase to over 125,000 million tonnes by 2030 (Agarwal *et al.*, 2002).

total waste quantity generated in 2047 has been estimated at above 260 million tonnes, more than five times the present level (Singhal and Pandey, 2001). Inevitably, this has huge implications for the environment.

4.3 Delhi: general introduction

Delhi has witnessed phenomenal population growth during the past few decades. According to the 2001 census, Delhi had a population of about 13,782,976 persons.[71] It is estimated that the total population of Delhi will reach 22 million in 2021 (Singh, 2001a). Urban population constitutes 89.39% of the total population (in 1991).[72] The population density for urban Delhi was 13,486 persons/sq. km. in 1991 (NIUA, 2000). Delhi has been growing at about 1,000 persons per day (350,000 per annum) for a number of years; approximately 225,000 of these result from Delhi's own growth (14 million growing at 1.6% per annum) with the balance coming from in-migration (MoEF and NCT, 2001).[73] Assuming 100,000 people from this growth are absorbed in the existing fabric of the city, serviced land is still needed to settle 250,000 people per annum at the rate of 500 hectares at a gross density of 500 persons/hectare or 1000 hectares at a moderate density of 250 persons/hectare.[74] This is further aggravated by demands placed on land for disposing the 5500 to 6000 metric tonnes of waste generated per day.[75] Further, 30% of Delhi's population, or 4.2 million persons, have little or virtually no access to formal infrastructure (i.e. they suffer from non-food poverty). While urban Delhi has much better access to public services as compared to all of India, there is a high intra-urban disparity in the provision of services and availability of facilities within Delhi (Kundu et al., 2001). For instance, the MCD collects waste daily from the Greater Kailash I and II affluent areas of Delhi with intermittent service in poorer areas [3, 6, 11b, 18].

In total, approximately 6 million of Delhi's citizens are living in poverty or deprived conditions of one form or another, 3.5 million of whom live in jhuggi jhopris (slums/resettlement colonies) and 2.5 million live in service deficient areas (MoEF and NCT, 2001). While 66.64% of the

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[71] Census of India (www.censusindia.net/profiles/del.html accessed 27 October 2003).
[72] National Institute of Urban Affairs (1996) Urban Environmental Maps (February).
[73] The floating population varies between 8-10 lakhs per day, with the city receiving about 2,50,000 people per year (Singh, 2001a). Lakh = 1,00,000.
[74] 1 hectare = 2.47 acres.
[75] MCD (www.municipalcorporationofdelhi.com accessed 12 February 2002). Also see Reddy (2003).

population live in their own houses (NIUA, 2000), communities living in poor housing such as *jhuggi jhopri* clusters make up over 40% of Delhi's population (MoEF and NCT, 2001).[76] Only about 20-25% of the MSW is collected and disposed of from these squatter, *jhuggi jhopris* and illegal colonies (Singh, 2001a).

The communities living in squatter settlements also produce less waste.[77] Numerous studies of Delhi's waste indicate that the composition of waste is directly linked to consumption, which is in turn linked to per capita income.[78] This found support from both the government and NGOs interviewees. A waste generation profile by *Srishti* found that people in higher income brackets, with a monthly income of Rs. 8,000 and above, generate about 800 gm (grams) of waste per capita/day (contributing more than 70% to the overall non-biodegradable garbage in the city) whereas people living on Rs. 2,000 per month generate 200 gm (grams) of waste/day (over 90% of the garbage generated by lower income colonies is bio-degradable).[79] According to [3], the rich not only produce more waste but also more non-biodegradable waste, e.g. plastic packaging.[80] Thus, the composition of waste depends upon the living standards of the people and their consumption preferences.

Table 4.2 compares Delhi with other metropolitan cities in India. The annual increase in per capita solid waste in Delhi is likely to be 4.83% (MoEF, 2000), with a daily waste generation of 20,000 tonnes by 2021. It is projected that by the year 2021 the total waste required to be disposed would be about 100 million tonnes, for which about 600-800 hectares of additional land would be required. In 1997-1998, only 2,700 tonnes of solid waste out of the 5,000 tonnes

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[76] There is a distinction between slums (designated legal areas under Slum Areas Act of 1956) and squatter settlements (encroachments on public and private lands) (MoEF, 2000).
[77] Approximately 15% of Delhi's population in 1993-1994 lived below the poverty line (NIUA, 2000).
[78] A study conducted by TERI and *Srishti* found that the amount of waste generated by rich colonies touched five kg/person on many days. See also 'Garbage management may save the day' in *The Times of India* (July 20, 2001).
[79] Agarwal *et al.* (2002, p.14), Srishti report (1994) in Ghose (1998) and Despande V. 'Affluent colonies produce most hazardous garbage' (13 December, 1994) in *Pioneer* quoted in Malik I. (1999).
[80] Manor (1993) in his sociological analysis of Bangalore uses the term 'social consciousness' and the lack of it among Indian middle classes. He argues that the middle classes lack an awareness of the interdependence of all social groups in society; realisation of responsibility among the elites for the poor and concern to find efficacious means of assisting the poor (derived in part from caste prejudice that poor, low status groups are largely to blame for their unhappy state). Also see Schenck and Baud in Huysman and Baud (1994), who state that often the economic elite of the local society are mainly responsible for the depressing state of the civic affairs, and hence it is an anomaly that they are often at the forefront to protest against the urban filth.

generated per day was being managed.[81] The total expenditure on solid waste management during 1998-99 was Rs. 226 crores which is Rs. 174 per capita/year.[82] Given this scenario of population growth and expansion, the environment is under immense strain.

Table 4.2: Status of MSW management in selected cities (1999)

City	Bangalore	Kolkata	Chennai	Delhi	Mumbai
Area (sq km.)	226.16	187.33	174.00	1484.46	437.71
Population (1999, in millions)	5.31	6.00	5.00	12.20	12.50
MSW generation (tonnes/day)	2200	3100	3050	6000	6000
MSW per capita (kg/day)	0.414	0.517	0.610	0.492	0.480
Safai Karamcharis (Staff cleaners employed by the local government)	12600	12030	10130	40483	22128

Source: CPCB (2000).

Delhi is a National Capital Territory with its own Legislative Assembly and Council of Ministers directly elected every five years. Therefore, legislation from both the centre and Government of the National Capital Territory of Delhi (GNCTD) operate in the field of urban management in the city (MoEF, 2000). With the enactment of the Government of National Capital Territory Act (Act No. 1 of 1992) by parliament, the National Capital has a 70-member Legislative Assembly, though with limited powers particularly in respect of finance, land and law and order.[83] The GNCTD was set up in 1993 with a Chief Minister (CM) and Council of Ministers responsible to the Legislative Assembly. The Chief Secretary as the administrative head of the Department of Environment (DoE) is ultimately responsible for implementing national and state legislation in Delhi.

The DoE of the GNCTD seeks to create public environmental awareness amongst the different segments of society. It implements the following schemes: grant-in-aid to Delhi Pollution Control Committee (DPCC), public environmental awareness, pollution disasters and hazardous waste

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[81] According to Kataria (2001) civic agencies manage to clear only 4,884 tonnes of the nearly 8,000 tonnes produced per day and most of the garbage is merely dumped in open landfills despite a Delhi High Court order to clean up the city. He quotes a CPCB study that the gap between waste generation and management will increase to 64% by 2021 from the current level of 40%, if the current population growth and lifestyle remain unchanged.

[82] MCD (www.municipalcorporationofdelhi.com accessed 12 February 2002). Rs. 1 crore = Rs. 10 million.

[83] The NIUA report concludes that Delhi's resource position is not strengthened by a change of status from a Union Territory to a state (NIUA, *Delhi as a Union Territory Versus Delhi as a State: Some implications for Finances*).

management, technical set up, environment data generation and eco-clubs in schools. It also assists NGOs in the promotion, conservation and preservation of the environment. The DPCC, on the other hand, is the regulatory body which monitors various pollution aspects and promotes mass awareness to mobilise public participation in environmental protection activities. The DPCC has focused more on industrial effluent treatment, hazardous waste, water and noise pollution than on ensuring environmental sustainability of waste services provided by the MCD. Besides, a large number of posts (170 out of the total of 256) sanctioned for the Committee are reported to be vacant (MoEF, 2000). With no field agency to monitor and ensure implementation, and restricted financial resources, the DPCC is constrained in carrying out its functions.

The Delhi Development Authority (DDA) is responsible for planning to promote and secure the development of Delhi.[84] As per the DDA Act 1957, DDA is the sole agency responsible for planned development of Delhi through the instrument of the Master Plan for Delhi [16a]. 'As of now the main functions of DDA are planning, architecture engineering, land disposal and land development' [16a]. The lands remain with the DDA until they are completely inhabited, after which they are transferred to the Municipal Corporation of Delhi [10, 11b]. 'Normally, DDA does not play an active role in MSW....The role of DDA is to either identify the landfill sites and change the land-use accordingly or notify the land identified by MCD as land fill site in the land use plan' [16a]. He states further that, the DDA is the richest development authority in the country, with about 25,000 employees. According to [16a], its main constraints include no power to acquire land, the multiplicity of authorities that it has to liaise with, and lack of staff training and skills. Generally, in summary, it is constrained by various factors in performing its functions[85] and is criticised for becoming a 'land hoarding' authority, violating its own laws (Kumar, 1996, p. 39-40).

In relation to the local government, there are two key aspects that impact on urban services: financial considerations and decentralisation trends. Most municipal bodies in India are unable to raise required finances because of their poor resource base, and often have to rely on 'higher levels of government for their operation and maintenance requirements' (Mathur and Singh,

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[84] DDA (www.ddadelhi.com accessed 12 December 2003). The DDA falls under the central government Ministry of Urban Development, which is responsible for formulating and monitoring policies on urban development and housing in the country.

[85] See Patel (1998), Tiwari and Pushpa (1996), and Kumar (1996).

1998, p.2).[86] The revenue of local governments particularly in India has not kept pace with the increases in urban population.[87] Studies by the National Institute of Urban Affairs (cited in Mathur, 1997) show that, though the revenue incomes of municipal bodies increased by 53%, the revenue expenditure escalated by more than 420%, consequently making it difficult for municipal bodies even to maintain the existing levels of services. Solid waste services, in particular, are under-priced, and this seriously jeopardises the overall financial viability of the municipal bodies (NIUA, 1991). Charging the users indirectly via the property tax has not ensured financial viability for the urban services.[88]

The second aspect is the trend towards decentralisation. The 74th Amendment sought to restore and refine functions of the local authorities, which had been 'taken away and allocated to parastatal organisations by the central government' (Jha, 1996, p. 49).[89] Further, it required state government to constitute Finance Commissions every five years to recommend measures to improve the financial health of municipal bodies. These provisions, however, were made discretionary rather than mandatory for the state governments, thereby losing its Constitutional efficacy and the claim that the amendment actually made the local government a 'third stratum' of government (Jha, p. 49, 57). In addition, it did not link municipal functions with corresponding revenue instruments, leaving it for state legislatures to evolve the financial framework (Anand, 1998; Jha, 1996). This resulted in the State Municipal Finance Commissions, which mainly complied with the recommendations of the state governments and Central Finance Commissions (Jha and Raghupathi, 1995). Despite the Constitutional change, it has been criticised as inadequate in practice from various quarters. State level agencies, like the DDA, usually undertake land acquisition and development works, remunerative projects like markets and commercial complexes, leaving municipal bodies with the functions of garbage collection/disposal, street lighting, maintenance of inner city roads etc. (Mathur, 1999, p. 29).

The Delhi Finance Commission, created as a consequence of the 74th Amendment, recommended a global tax sharing of 9.5% of the GNCTD's tax revenue to be transferred to the MCD and

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[86] See also Mathur (1997), Anand (1998), Mohanty (1997) and NIUA (1997a) for further details on the financial aspects of municipal service provision.

[87] See Mathur (1997) for details.

[88] See Mathur (1999), Mathur and Singh (1998), Jha (1996) for further details on issues of raising local finances through property tax.

[89] The ULBs were assigned the responsibility for implementation of local development plans and social justice programmes.

NDMC (MoEF, 2000).[90] The MCD has functional and tax jurisdiction like any other municipality in the country, except it covers an enormous area with an equally large population. In 1998-1999, 69% of MCD's own source of revenue was derived from property tax, while other taxes (such as, duty on transfer of property, electricity duty, advertisement tax and non-motorised vehicle tax); rents, fees and fines constituted the rest. Most of these are regulatory in nature, but the costs of such services are not recovered through user charges and fees (MoEF, 2000 Chapter 12; NIUA, 1991).[91] There are general problems with the property tax structure, inappropriate pricing of services, increasing expenditure and financial mismanagement which are accentuated over time with, for example, urbanisation and population increases.[92]

The MCD, before the creation of the GNCTD, was the only elected body in Delhi. The Delhi Municipal Corporation Act (1957, amended 1993) created the Corporation for the whole of Delhi including urban and rural areas.[93] The Act entrusted the Corporation with 23 obligatory and 27 discretionary powers. Making adequate provision for the 'scavenging, removal and disposal of filth, rubbish and other obnoxious or polluted matters' is an important obligatory function of the Corporation.[94] It distinguished between the areas of New Delhi Municipal Committee (NDMC), Delhi Cantonment Board (DCB) and the MCD. Thus these three local bodies constitute the local government in Delhi. However, because the NDMC consists of nominated members and the DCB falls under the responsibility of the Defence Ministry of the central government, they are not truly representative in nature.

Delhi is divided into 12 zones, further subdivided into wards (see Figure 4.1). The area under the MCD jurisdiction has been divided into 134 wards.[95] The residents of these wards elect local Municipal Councillors as representatives in the Corporation. With an area of 1397.3 sq km., the MCD has the largest area in Delhi. It is the focus area of this study because it is largely

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[90] The GNCTD has special functional and fiscal features whereby it has all but three (public order, police and land) state functions; receives grants in lieu of central shared taxes; and can only borrow from the central government (MoEF, 2000, Chapter 12).
[91] For instance, on average local governments cover only 20-30% of the total expenditure that is incurred on the operation and maintenance of water supply (Mathur, 1999, p. 32).
[92] See MoEF (2000, Chapter 12) and NIUA (1991) for details. In India, municipal governments have faced the problem of finances almost since the time they were created towards the end of the 19th century (NIUA, 1991).
[93] The rural areas (Narela and Najafgarh) are excluded from the purview of this research to ensure an urban focus.
[94] MCD (www.municipalcorporationofdelhi.com accessed 13 February 2002).
[95] MCD (www.mcdonline.gov.in/mcd/content.jsp accessed 13 February 2002).

responsible for the collection and disposal of waste, with the NDMC and Delhi Cantonment Board relying on its services.

Figure 4.1: Zones of Delhi

Source: MCD (http://delhigovt.nic.in/newdelhi/index.html accessed 20 September 2003).

While the Delhi Municipal Corporation Act (1957) created a Sanitation Department under the MCD responsible for collection, transportation and disposal of waste, it also laid an onus on households to deposit waste at the nearest municipal receptacle.[96] Under section 42 of the Act, it is the statutory duty of the corporation to collect this garbage from these receptacles. In particular, the Conservancy and Sanitation Engineering Department of the MCD looks after waste management in the city.[97] This is different from other Indian municipalities where the Health Department looks after hospitals and public health and waste management issues. A technical Director-in-Chief, who ranks above the Chief Engineer, heads the Conservancy Department and

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[96] MCD (www.municipalcorporationofdelhi.com accessed 12 February 2002).
[97] The department is responsible for collection, transportation and disposal of garbage and desilting of storm water drains (MCD, www.municipalcorporationofdelhi.com accessed 10 August 2003).

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reports to the Additional Commissioner and Commissioner (MCD). A team of Directors and Joint Directors assists the Director-in-Chief, who in turn is assisted by executive and junior engineers. The Additional Commissioner from the Indian Administrative Service is the administrative head of the Department. Further, a Sanitation Superintendent is responsible for the sanitation in each zone. Chief Sanitary Inspector and Sanitary Inspectors, who are responsible for the wards in the zones, assist the Sanitation Superintendent. The Conservancy Department of the MCD receives financial aid from Delhi's government and also from allocations from the revenue generated by the MCD, mainly through property tax.[98]

Waste generation in MCD is about 6,000 to 6,300 tonnes/day, in the NDMC area, about 350 to 400 tonnes/day and in the DCB about 100 tonnes/day (MoEF, 2000). MSW collection in residential and commercial sites has two broad divisions: street sweeping services, and collection and transportation of MSW. The street sweeping services and the resultant primary collection and transport to the nearest *dhalaos* (large waste bins provided by the MCD) is carried out by MCD *safai karamcharis* (cleaners) with equipment such as large brooms and hand carted wheel barrows. Each *safai karamchari* is given a certain area for sweeping, ranging from 500 sq. m. to 1,000 sq. m., depending upon the density of population (MoEF, 2000). Registered Resident Welfare Associations (RWAs) sometimes employ people as a private arrangement for door-to-door collection of waste.[99] These local waste collectors then dump the waste into *dhalaos* usually after segregating recyclables to be sold to waste traders (*kabadiwallahs*). According to the MCD (2003, p.13) there are around 2,500 receptacles, which consist of approximately a thousand *dhalaos* (approximately 4 x 6 m. in size, and of 12-16 tonnes capacity), around 1,277 large dustbins and 275 open dump sites in all of Delhi. The average cost of transportation as reported by MCD is Rs. 165/tonne; however, NEERI in its report states that the cost is Rs. 240/tonne (MoEF, 2000). The average cost of waste disposal is reported to be about Rs. 100/tonne in addition to the Rs. 600 for collection and Rs. 165 transportation costs, which totals Rs. 865/tonne

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[98] The area-based method fixes a unit area value per sq. m. of covered space for calculation of property tax. The tax for a particular property is based on the annual value of the property, arrived at by multiplying unit area value assigned to the colonies/localities by the covered area of the property and multiplicative factors for occupancy, age, structure and use. Other taxes include tax on vehicles and animals, theatre, advertisements, buildings and duty on transfer of property, education cess, tax on consumption of electricity etc. The taxes are levied, assessed and collected in accordance with provisions of the Corporation Act and bye-laws made thereunder. See www.mcdonline.gov for more details.

[99] Private solutions can be found sporadically in Delhi, for example in both Greater Kailash I and Ashoka colony garbage is collected by contractors appointed by the residents' associations (free in Ashoka colony and Rs. 10/household/month in Greater Kailash). Since the recyclables are sorted at source the contractor is able to earn Rs. 300 per day by selling it (Despande, 1994 in Malik 1999).

(Singh, 2001a). NDMC collects waste through its own staff, and pays Rs. 800 per truckload to MCD for disposal in its Ghazipur landfill site. The DCB disposes of the waste on Defence land in quarries near Inderpuri.

MCD cleaners are also a relevant actor at this level. In the MCD area there are 43,000 *safai karamcharis* (approximating 95.27% of the total MCD staff engaged in MSW, Singh 2001a), who sweep roads and load trucks, which is equivalent to 36/10,000 population (MoEF, 2000). Out of the total monthly MCD wage bill of Rs. 830 million, 500 million are spent on these sweepers (MoEF and NCT, 2001). They are often locally organised in trade unions in various states and union territories, including Delhi.

MCD trucks collect the waste during the day either using loaders or human labour. The waste is then transported to the three operational landfill sites for Delhi where only 30 tonnes (or above) load is accepted. The trucks are sent back if it falls below this measure.[100] There are 16 filled up landfill sites in and around Delhi.[101] There are no sanitary provisions in and around the site. The MNES provides financial assistance to the MCD for waste-to-energy (WTE) schemes, for example, the Timarpur incineration plant (discussed in the next chapter).

Not unique to Delhi, the rag pickers are part of a hierarchy caught in a strong network of agents, traders and middlemen, limiting the levels of income generated by rag picking.[102] There were at least 250-300 rag pickers picking from the dumped waste at Okhla landfill site.[103] In general, rag pickers come into existence due to two basic conditions: the extreme poverty of large sections of urban communities in India and the relative high value of 'raw materials' to be recycled (Baud and Schenk, 1994). Manor (1993) points to a set of social characteristics in India to explain the position of rag pickers: a basic element of the social structure (caste) combined with cultural elements, social values and norms. The waste pickers work as service providers and save the

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[100] The MCD has a total fleet of 693 trucks and 163 front end loaders across the 12 MCD zones (www.mcdonline.gov.in/mcd/content.jsp accessed 2 October 2003). These are often under-utilised for a variety of reasons like improper maintenance operating only 2 – 3 hrs a day, making only one or two trips from collection to disposal sites (Singh, 1999, p. 115).

[101] The closed landfill sites are Sanjay Gandhi Transport Nagar, GT Karnal Road, Haiderpur, Timarpur, Gopalpur, Sunder Nagari, Kailash Nagar, Tilak Nagar, Mandawli, I.P. Depot, Bhairon Road, Nizamuddin Ring Road, Tughlakabad, Chattarpur, Hastsal Phase I and Hastsal Phase II. One of them was converted to a park, but is exhibiting ground compression and leaching (see Annex 4d).

[102] Huysman (1994), referring to the rag pickers in Bangalore.

[103] Personal visit to Okhla in February 2003. Around 20 cows were also on the landfill site with abnormal growths on their bodies (see Annex 4e).

municipality a substantial budget (about 20% according to Agarwal *et al.*, 2002 p. 35) by picking up about 150 tonnes or 40% of the total recyclables from the residential sector (Malik, 2000).[104] The estimated 90,000 to 100,000 rag pickers in Delhi collect on average 15 kilograms of waste per day, reducing the quantum of waste by more than 1,200 tonnes daily (Agarwal *et al.*, 2002 p. 35) and saving the MCD anything between Rs. 372,000 to Rs. 450,000 every day (Ahmed and Jamwal, 2000). Although the government is increasingly recognising the important contribution of rag pickers, there is hardly any change in their social, economic position in reality.[105]

The public is another actor of huge significance. According to a study quoted in Peritore (1999), 52% (of those interviewed) show 'a great deal of concern' about the environment, and 54% think that environmental laws 'do not go far enough' towards solving the problem. The RWAs provide a platform to householders to voice their grievances and interact with the local councillors. The president elected from amongst the local residents organises meetings and takes their concerns to the local MCD councillor. In 2000, the government introduced the Bhagidari (partnership) scheme which enables the RWAs to play a bigger and more direct role in local service provision. Nearly 1,200 RWAs and Market Welfare Associations are part of this scheme, which is supposed to lead to greater transparency, openness and efficiency in the running of the administration and implementation of various projects.[106]

Conclusion

The nature of Indian environmental policy-making and implementation brings to the forefront issues of organisational jurisdiction, demands by the public, public interest litigation and the consequent role of the judiciary and, importantly, the reactive approach to policy making.

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[104] Saha and Rajgopal (2001) put the national figure of waste collected by rag pickers in urban areas at 12-15%. According to Kumar (2000), the waste pickers are doing a business more than Rs. 50,00,000/day (Rs. 550 crores/annum); with recycled waste generating a business of more than Rs. 1.5 crore/day.
[105] For example, the Barman Committee Report (1999) states that for the collection of recyclable waste from doorsteps, the NGOs maybe encouraged to organise rag pickers. The Waste Minimisation Circle website states that though domestic solid waste is efficiently picked over by various informal sector operators, the disposal of remnants leaves a lot to be desired (Waste Minimisation Circle, http://wmc.nic.in/about-wmc.asp accessed 23 October 2003).
[106] *The Hindu* 'Bhagidari Scheme goes global' (24 July, 2003), (www.hinduonnet.com/thehindu/2003/07/24/stories/2003072406220400.htm accessed 23 October 2004). The RWA president [28] interviewed was unclear about this scheme. There are numerous reservations regarding the Bhagidari initiative with instances of corruption already strife [29, 10]. According to [10a], it is a political stunt, and would remain on paper with no accountability, responsibility, funds or powers.

Organisationally, the GNCTD and the MCD (along with the NDMC and Delhi Cantonment Board) constitute the state and local government levels of Delhi. However, national/central government also influences MSW policy. Though India has become the world's eighth largest industrial power, extreme poverty continues to prevail (Holmberg, 1992). There is a growing realisation, including in terms of policy commitment that environmental degradation comes from both poverty and unsustainable development. However, transforming this into reality against the onslaught of rapid economic and population growth has been difficult. The next chapter applies Jänicke's model to Delhi's MSW policy, and explores the existing institutional framework and its capacity to deliver environmental sustainability in MSW management.

Chapter 5

Delhi and its MSW policy network: answering the burning question

5.1 Delhi's capacity for environmental policy reform

5.2 Institutional capacity for effective Municipal Solid Waste policy reform

> ➤ Sources of pressure

> ➤ Understanding the political-institutional framework conditions: the Municipal Solid Waste policy network

> ➤ Responsiveness: anything but effective Municipal Solid Waste policy reform

Due to growing pressure on land in Delhi and the projected increase in the quantum of solid wastes, the scope for disposal through landfill sites is limited.

White Paper on Pollution in Delhi (1997)

In 2001 the Ministry of Environment and Forests (MoEF) Interim Report stated that the Okhla landfill site only had six months left before it would reach capacity. It was still receiving waste in 2003.[1] By then Okhla was no longer operating as a 'landfill' site in the technical sense since the waste was no longer being 'filled into' the land but was piled up to the height of a 15-storey building.[2] This is just one stark example that poses the question: why are the Delhi organisations described in Chapter Four unable to adopt, influence and implement more environmentally sustainable waste management options? This chapter studies the impacts of these various organisations on the MSW policy process. Initially it offers a wider perspective by applying Jänicke's model to the case study of Delhi, with particular attention to the political-institutional framework, examining how it mediates the relationship between pressure for environmental protection and effective policy reform. The framework is, in turn, studied in detail using the policy networks approach. The responsiveness to pressure is found to be far from effective.

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[1] Field visit in 2002.
[2] See Annex 5a.

5.1 Delhi's capacity for environmental policy reform

Jänicke's model of capacity for environmental policy reform brings together the five factors of *actors*, using various *strategies*, whose actions are located both in terms of broad background *structural framework conditions* and the immediacies of the *situative context*, all in relation to the *problem*. Agrawal and Yokozuka (in Jänicke, 2002) have already applied Jänicke's model to profile India's national capacity for environmental policy in the context of democratic politics.

For Agrawal and Yokozuka, environmental politics in India is distinctive among developing countries precisely because of the availability of a longstanding democratic framework of decision-making that allows a variety of different interests to influence outcomes: democracy is a political-institutional framework condition that favours environmental policy according to Jänicke's model. Agrawal and Yokozuka argue that 'participatory and representative democratic political arrangements provide the best available option to address India's current environmental ills and secure sound protection of India's environmental future' (2002, p. 239). This, for them, implies that the best way forward would be to take these democratic forms further by developing a stronger network of participatory, semi-autonomous organisations at the grassroots level that would control local resources and be effectively linked in order to exert political pressure at the macro level. Further, additional elements, such as the role of international donor agencies, NGOs, news media and judicial activism, have enhanced environmental capacity building in India.

However, they concede that, even though national and state institutions have a long political-institutional tradition of democracy, India's 'population and policy measures from central government can be significant constraints on how humans live in their environments' (p. 240). They choose to focus on 'local capacities as the ultimate measure of the extent to which factors such as overpopulation and market pressures pose problems for the environment'(p. 240). This is the level where, for Agrawal and Yokozuka (p. 240), environmental policy-making will play itself out as a 'politics of reconciliation' between the goals of development and environmental preservation. Thus, for the authors, participatory democracy with direct action can provide the most efficient way to internalise environmental preferences, and to induce the political system to maximise responsiveness to the expression of environmental interests. 'The high level of politicization [at grassroots level] pressures the state to accommodate groups, and forces it to open new avenues of participation' (p. 244). For them, participatory democracy, as evidenced in mass demonstrations, protests, strikes and other forms of mobilisation, offers an alternative

means of articulating environmental issues. Similarly, it is the decentralisation of local democracy that is seen as the way forward; by contrast: 'although democratic, the Indian political system has for long been centralised' (p. 246). Equally, its administrative structure remains quite centralised. In addition, they see the relationship between government and industry as 'at best conflictual and [it is] the citizenry [....] who fall victim to environmental disasters' (p. 248).

Agrawal and Yokozuka conclude that the political-institutional change that could lead to environmental protection on a more decentralised basis has never been pursued. The reasons for this lay in the low public awareness (knowledge) of all issues, the failure of the enforcement machinery of the government, and the unwillingness of major actors to comply with the regulations. How does their application of Jänicke's model compare with the research findings of this thesis on MSW policy in Delhi? The following subsections map the findings of the fieldwork onto Jänicke's model more generally and also consider Agrawal and Yokozuka's specific focus.

Actors

A multitude of *actors* impact on Delhi's MSW policy in varying degrees. Their impact is briefly summarised here while the institutional framework comprising their inter-relationships is studied in more detail in the next section on institutional capacity.

Governmental actors include central government (through the PC; the MoEF; CPCB; MNES), state government (DPCC; DoE of the GNCTD) and local government (MCD and local councillors). As Agrawal and Yokozuka also note, the SC must be recognised as an actor playing an important role in directing the executive to perform its duties, usually when a public interest litigation (PIL) is filed in the SC by citizens (like [19a] and [19b]). The NGOs, the main non-governmental proponents of environmental protection, focus on a variety of aspects with respect to waste: this diversity, however, dilutes their impact on the process of policy-making. The industrial lobby organisation, the CII, and the individual companies have a huge influence on MSW policy, with regular access to the policy-making process as members of various government committees. The Resident Welfare Associations (RWAs) provide a bridge between the local residents and local councillors of the MCD. However, the councillors themselves do not have sufficient influence on MSW policy-making for this to make much difference. The MCD also faces resource constraints in its delivery of waste services.

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Strategies

The *general approach to the problem* in Delhi is mainly decided at national level, where in reality there are only two options considered: the dominant focus on landfill supplemented by Waste-to-Energy (WTE) as the key alternative/ new 'way forward' [3, 4, 6, 7, 8a].

Although the 'reduce, re-use and recycle' hierarchy of waste management is increasingly mentioned in Indian MSW policy statements, recycling/composting are actually given little attention.[3] As for the other alternatives in the hierarchy, the National Environmental Engineering Research Institute (NEERI) study showed that there were methods, notably solid waste treatment, that would fall under the heading of 'reduce', not in its primary sense of reducing waste at source (production or consumption) but at least through initial treatment that minimises the quantity to be disposed of and its pollution potential.[4] The study also made it equally clear that thermal treatment methods, such as incineration or conversion of waste to briquettes and its subsequent use as fuel (i.e. WTE), were not environmentally sound or feasible due to the low heat value/high organic content of MSW in the MCD area.[5] Finally, the study supported composting as an alternative waste disposal strategy. Clean collection and disposal, especially composting organic refuse, is critical because nearly 80% of the city's garbage is organic and, after wastewater, is the main breeding ground for bacterial infection (Kapoor, 1995). In a similar vein, the Barman Committee report cautioned local bodies against adopting expensive technologies of power generation/WTE until proven appropriate for Indian conditions.

By contrast, according to Mukherjee (2000, Secretary MNES), WTE technologies could help in reducing the total waste quantities in India by nearly 50% to 90%, which in turn could greatly

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[3] The CPCB *Management of Municipal Solid Waste* booklet profiles the waste disposal methods: bio-conversion into organic manure is listed as having high capital costs with technological constraints requiring government support but highly useful for yield improvement of crops. Interestingly, adding value to waste resource and sustainability are listed under demerits. Incineration, in contrast, is listed as a standard easy hygienic operation (merit), with high diesel costs, smoke and gaseous contamination, high temperatures and capacity constraints as its demerits. Almitra Patel (also a member of the SC Committee for Solid Waste Management) suggests that state Agriculture and Fertiliser Ministries jointly prepare an action plan to ensure farmers use city composts along with chemical fertilisers as inputs for various crops, resulting in three times better uptake of urea (compost) (in *The Business Line* 'Seminar on solid waste management', 6 February 2003, New Delhi). See further 'Greenpeace slams Indian government for waste imports' in *Planet Ark* (12 September 2000).
[4]*Study on solid waste management in Delhi* (1999) conducted by NEERI for the Delhi Development Authority (DDA).
[5] Incineration is an expensive option and involves emissions of several hazardous gases besides being not very effective in developing countries context, where high moisture content requires special fuels which causes processing costs to go up (Huysman and Baud, 1994).

reduce the demand for land (for landfill), which is already scarce in cities, and the cost of transportation to distant landfill sites. In practice, the Danish WTE plant installed at Timarpur, New Delhi at a cost of Rs. 44 crore in the 1980s ran for only a week because of the high moisture content in the waste, which made it unsuitable for burning.[6] Since then, the incineration plant has been idle, although still incurring maintenance costs (Toxic Links, 2002). The MNES official was unable to explain the gap between the 1980s onwards 'on the ground' experience and the 2000 MNES statement nor the reasons behind the continuing official support (not only verbal but through subsidies) offered to WTE plants.[7] Thus, despite evidence to the contrary, the WTE plants are being encouraged as the key alternative strategy to landfill.

Structural framework conditions

Jänicke's structural framework conditions include cognitive-informational, political-institutional and economic-technological framework conditions. The political-institutional framework condition will receive more intensive analysis in section 5.2.

Economically, India has achieved impressive growth rates. According to Swamy (2002), India averaged about 3.6% a year in Gross Domestic Product (GDP) growth rate during the 30 years between 1950-51 and 1980-81, compared to less than 1% a year in the half century before that. Then, in the 1980s, it accelerated to 5.6% and averaged even higher at 6% in the final decade up to 2000-01. With continuing economic reforms, the Indian economy can grow at the rate of 10% per annum over the next two decades, making India potentially the world's third largest economy by 2020, after the U.S. and China, and overtaking all the major European economies such as Germany, France and the UK.[8] The huge agricultural sector could provide a good market for compost while ensuring the use of an eco-friendly fertilizer in the rural areas. The subsidy offered to WTE plants could be transferred to composting initiatives.

According to Jänicke, economic-technological framework conditions should be favourable to environmental policy reforms. However, these economic advances and GDP growth rates have

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[6] 1 crore = 10 million.
[7] The official [30] was quite vague in his replies, however, he did state that 'our objective is to look for alternatives, so waste to energy is one of them'.
[8] Swamy (2002). He is a former Union Minister for Commerce and faculty member in the Department of Economics, Harvard University. He warns of growth that is reliant on the service sector (which contributed 60% on average to the growth rate), leaving factor (labour, land, capital) and natural resources markets, and institutions, untouched.

consistently failed to be matched by focused attention to the role of the environment in economic growth. For example, Enron's project in Dhabol, the first private power project in India, was hailed as symbolically 'opening up' the market and the first step towards globalisation. However, it was granted permission despite clearly identified concerns for the local environment and livelihoods.[9] More generally, an evaluation of 42 speeches between 1973 and 2005 made by the current Deputy Chairman of the PC, Montek Singh Ahluwalia, reveal that, although they cover topics from 'inequality, poverty and development' to 'priorities for economic reform', there is no mention whatsoever of the environment or its importance in the economic framework of the country.[10] This lack of integration of environment and development agendas at the bureaucratic elite level also percolates through most of MSW policy formulation in India.

Turning to the framework of *environmental knowledge* (the cognitive-informational framework condition): the government has endeavoured to produce and distribute more information mainly since 1997. However, there are questions of reliability. For example, the (air and water) pollution readings by the CPCB and DPCC are different for the same place in Delhi (see Kumar, 2001b). Raj (1999) asserts that the municipal corporations' garbage removal department is furnishing exaggerated figures to show better results than it can be credited with and has overlooked 'local dumping' of waste, an outlawed practice. These figures were generated mainly to show the CM and the Lt. Governor, amongst others, that the Conservancy and Sanitation Engineering department is 'on the job'.[11] Awareness activities through advertisements in public transport, magazines and newspapers are actively taken out by the government. However, they largely focus on anti-littering. Only two members of the public interviewed ([24b] and [24c]) had heard about the eco-label scheme, but were unsure of its practice.[12] NGOs like CSE also publish annual 'state of the environment' reports on India and Delhi, which are often seen as more credible.[13] Therefore, environmental knowledge relating to MSW can be patchy and unreliable.

There is a high degree of awareness and availability of information regarding the unsustainability of current waste disposal practices amongst the public, NGOs, media and within the government.

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[9] For details, see Human Rights Watch (www.hrw.org/reports/1999/enron/index.htm accessed 20 June 2004) and Roy (2002).
[10] For a full list of speeches see: http://planningcommission.nic.in/aboutus/history/spemsabody.htm accessed 18 January 2006.
[11] Malik (1999) quotes Y. Raj's article 'MCD inflates figures on garbage dumping' (February 2, 1999).
[12] According to Agarwal *et al.* (2002, p. 29), 'no single product in the market bears the ecomark scheme (launched in 1991)'.
[13] 'I would believe CSE more' [24c].

However, little gets translated into efforts to ensure intra- and inter-policy integration. Although official documents recommend the waste hierarchy and sanitary landfills, implementation suggests a clear preference for WTE plants and dumping of waste at landfill sites. Despite unsuitability for the type of waste generated, landfills and WTE plants are favoured over more suitable options, like composting at best and sanitary landfills at least. Furthermore, the economy with its huge agricultural component (especially in the rural Delhi) could support these more environmentally favourable options.

Situative context

The first major environmental legislation, the EPA (1986), according to Agrawal and Yokozuka (2002), was enacted 'in part to implement the decisions taken after the Stockholm Conference in 1972' (p. 247). This suggests steady directed progress towards environmental reform. Yet the fact that the state took 14 years to enact decisions taken at an international conference indicates that it was the immediate situative context of the Bhopal tragedy (1984) that actually triggered reform. Agrawal and Yokozuka acknowledge that environmental concerns overall have not received the attention that the framework conditions would suggest. However, even within the limited recognition accorded to environmental protection, MSW policy receives even less attention than other areas and this may be partly due to *short-term variable conditions* making up the immediacies of situative context, according to the findings of this research.

Without any recent disasters requiring emergency action or, unlike pollution from vehicles, any immediate and tangible manifestations of the problem, proponents have fewer situative opportunities to campaign for more environmental protection in the context of MSW. As mentioned in Chapter Four, the plague and dengue epidemics in Surat (1994) and Delhi (1996) did initiate some thinking on MSW.[14] PIL actions in the SC, which usually draw some public attention and awareness, have involved some MSW cases (see Chapter Four) but these are few in number and have not received the same systematic follow-up pressure as, for example, vehicle pollution from petrol (which led to the introduction of Compressed Natural Gas (CNG) as an alternative).[15] Landfill, in particular, allows an 'out of sight; out of mind' mentality amongst both the public and the government [11b, 18], so that even the striking example of the Okhla landfill

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[14] How far it was successful in resolving the root causes is the subject of section 5.2.
[15] S.C. Writ Pet. (Civil), *M.C. Mehta* v. *Union of India* (1985) (No. 13029/1985). See Rosencranz and Jackson (2003).

site, mentioned at the start of this chapter, remains invisible to officials and the public alike. Besides, the WTE plants encouraged as a method of treatment of waste conveys a false impression that environmentally friendly policies are being pursued. The long-term problems that MSW signifies do not lend themselves to vivid immediate 'situative contexts' that would trigger responses at governmental levels or among local citizens.

Yet there is nothing in the *short-term variable conditions* for action that would actually block the adoption of a range of potentially feasible 'win-win' constellations that could successfully integrate economic, development and environment interests such as charging householders for waste services, economic initiatives to support composting, ensuring the environmental viability and economic feasibility of existing recycling industries, and tapping the potential of rag pickers. Nevertheless, none of these measures are currently being considered by the government at any level. In the context of growing population and stretched municipal services, the issue of MSW remains strikingly unaddressed. Instead inertia continues to prevent more environmental sustainability in MSW management.

Problem

The *problem* of MSW in Delhi is complicated and semi-urgent, mainly regarded as threatening future generations. While the general public is largely apathetic to the problem of MSW, there are a few significant sources that exert pressure on the network to resolve the problem of waste.[16] The SC is the strongest source of pressure, with judicial activism being the predominant enforcer of environmental policy in India. There are additional pressures that arise from constraints from the availability of land, NGOs, the media, international organisations and public complaints. Thus, the issue is less of a 'lack of pressure' and more of the way the problem is defined by the different actors.

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[16] There are also inter-state disputes regarding Delhi's waste problem, leading the Chief Minister (CM) to complain that Haryana and Uttar Pradesh (Delhi's neighbours) are not cooperating with Delhi in waste disposal (Press Trust of India (reported in Samaya.com, 28 August 2003) 'Haryana, UP not cooperating with Delhi in waste disposal: Dikshit' (www.saharasamay.com/article.asp?news_id=4542 accessed 24 October 2003). Landfill sites purchased by Delhi government for waste disposal in Haryana and Uttar Pradesh were not being allowed to be used under spurious pretexts. In addition, Delhi's waste problems are set to spill over to these states. Neither this aspect nor these landfill sites were mentioned by any of the interviewees.

Assessment

In sum, having reviewed all the factors in the Jänicke model, this simple evaluation shows that Delhi has a *reasonably* good level of capacity for environmental policy reform and indeed environmental sustainability in MSW management. Diverse actors, both proponents and opponents, are involved in the policy process. Although the government–industry coalition is stronger than the proponents and a generally apathetic public, there are various sources of pressure for change. Judicial activism, exercised through the SC, is the predominant enforcer of environmental policy in India. Constraints arising from availability of land, NGOs, the media, international organisations and public complaints comprise the remaining actors/sources of pressure. Framework conditions are largely favourable to environmental policy reform both in terms of a successful and expanding domestic economy and technology-knowledge conditions.

Turning to the other key framework condition, political-institutional factor, it is interesting at this point to compare Agrawal's and Yokozuka's (2002) conclusions with the findings of this research. First, there are some clear points of agreement/confirmation which need to be noted. They comment on the lack of institutional change, notably the failure of the drive towards decentralisation. Their explanation is partially confirmed by the findings of this research. They list the three factors of low public awareness, enforcement failures and lack of compliance. These were clearly evidenced by the current research in relation to MSW policy. However, even in this sphere of agreement, there is one striking difference and this *prima facie* relates to enforcement/compliance. Agrawal and Yokozuka found the government-industry relationship to be 'conflictual'. By contrast, the present research found that MSW policy was already formulated in accordance with industrial interests, and where it was not, it was distorted in its implementation. Over and above lack of regulatory compliance, the intended regulatees were successful in influencing the MSW policy process towards their objectives. The government actively sought consultation and endorsement from the industry. Also, Agrawal and Yokozuka overlook the possibility that the NGOs have varied objectives with often hidden agendas, and the prevailing NGO politics, which became clearer during the fieldwork. For instance, the Tata Energy Research Institute was renamed The Energy Research Institute, because the media associated it with the Tata industrial group, as a prominent board member [8]. Equally, the time gap between the Stockholm Conference resolutions (1972) and India's first major environmental legislation, the EPA (1986) has already been noted earlier. Yet, Agarwal and Yokozuka believe that the enactment of the EPA can be seen primarily as the implementation of Stockholm (rather

than triggered by the Bhopal gas tragedy). The lack of principled commitment to ensuring environmental sustainability is clear.

Taking this together with their view of state and industry harmony, a picture is beginning to emerge in which Agrawal and Yokozuka appear as somewhat unworldly or at least somewhat over-optimistic about the past and future of India's capacity for environmental policy reform. This tendency shows itself perhaps most strongly in their attachment to the exciting prospects of success in environmental protection promised by participative local democracy on their prospectus. Yet, just to take one example, the *Narmada Bachao Andolan* and *Chipko* movement, as discussed in Chapter Four, were concerned with the environment but this was strongly entwined with safeguarding the subsistence rights of locals. Just as with industry, therefore, the role of economic considerations in local grassroots environmental movements cannot be denied. Their claim that this grassroots participative democracy will be the plane where reconciliation between economic development and environment goals may be achieved to yield sustainable environmental policy seems like a distant ideal. Certainly with MSW policy, no policy measures have emerged aimed to incorporate the rag pickers into the MSD service delivery function to eradicate their poverty while recognising the role of recycling.

However, this tendency towards 'optimism' on the part of Agrawal and Yokozuka may itself be structured into all applications of Jänicke's model, oriented as ecological modernisation is to efforts towards progress in securing environmental goals. At the same time, their focus on democracy indicates a different limitation of the Jänicke 'template': the issue of institutions seems to be entirely encompassed by *political* institutions (as indeed the term 'political-institutional' framework would indicate). Political institutions in turn are seemingly understood in terms of classical concerns, notably degree of representativeness. Thus, Agrawal and Yokozuka reiterate the importance of the institutional factor in bringing about sustainable development. However, their suggestion of institutional change is restricted to decentralisation of environmental decision-making. Taken altogether, Jänicke's model looks like the 'Whig' view of history seeing progress as always the trend and privileging democracy.

Such preoccupations would explain why Agarwal and Yokozuka fail to capture the full repertoire of institutional policy dynamics on a number of counts. In MSW policy it was more the constitution of the policy community (and its constituent core) that refutes their assertion that participative democracy and its mass demonstrations could resolve the problems of

environmental degradation. Also, there is no evidence of reconciliation between the development and environment goals in MSW policy formation. Finally, they do not capture the dynamics of the policy process because the political-institutional is conceptualised by Jänicke as a (static) framework within which actors act, it fails to capture the (dynamic) modes in which actors relate to each other i.e. through networks (see below).

Therefore, the encapsulation of the different factors by Jänicke and the analysis by Agrawal and Yokozuka (2002) does not reveal the impact of institutional capacity on decisions regarding *whether* to utilise the existing capacity for better environmental performance. The model as applied to Delhi does not explain the lack of environmental sustainability in its management of waste. Simplistically, this policy area and its network of actors could demonstrate a higher degree of capacity for sustainability. However, the existing evidence suggests otherwise. The following section focuses on the political-institutional condition of the model to look further for explanations.

5.2 Institutional capacity for effective Municipal Solid Waste policy reform

MSW policy in Delhi has attracted various actors with often diverse and conflicting interests. As explained in Chapter Two, these actors are broadly categorised into state, industries, NGOs and the public. This section studies the interactions amongst these actors based on their resources/constraints, aided by the policy networks approach. It ascertains the distinct features of the network that assume importance for MSW policy. But first, it highlights the main sources of pressure that challenge the existing institutional framework.

Sources of pressure

The predominant source of pressure is the judiciary, through the various public interest litigations (PILs). The PILs were filed by advocates Wadhera (1996) and Almitra Patel (2000) in an attempt to highlight and remedy the inefficiency in the delivery of sanitation services by the state and to ensure environmental sustainability [19a].[17] The SC set up the Barman Committee, after consulting the PC on how to proceed with the two PILs. As a result of this pressure and the Committee's recommendations, the CPCB drafted the *Municipal Rules* as a statutory obligation

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[17] *Wadhera* v. *Union of India* (AIR 1996 SC 2969), *Almitra Patel* v. *Union of India* 1998 (2) SCC 416.

for local authorities throughout India. The MoEF subsequently drafted the *Municipal Waste (Management and Handling) Rules*, according to which the MCD is obliged to provide doorstep collection and segregation of household waste by the end of 2003. However, lack of resources and priority accorded to the issue caused delays in its implementation [11b, 12, 18].

The White Paper (MoEF, 1997) draws attention to an additional source of pressure. It stated that the growing pressure (including commercial/industrial demand) on land in Delhi and the projected increase in solid waste, limited the scope for waste disposal through landfill. Therefore, it suggests that other best practices in disposal technologies, such as aerobic composting and vermiculture, should be adopted on a large scale, along with a greater role for the private sector. As the findings from this research clarify, these options have been side-lined in preference to the WTE plants.

Pressure is also exerted by the environmentalists who have consistently warned that Delhi will face a major ecological disaster if the widespread dumping of garbage in several landfills continues unchecked. Despite the overall 'cleanliness drives' launched in the wake of the plague scare, they contend that this would only have a cosmetic effect unless a proper action plan is drafted to manage the overflowing landfills and the danger of ground- and surface-water contamination.[18] Recently, the NGOs have started to conduct their own investigations and publish their findings, exposing cases of environmental mismanagement on the part of the state, and often industry. Sometimes this successfully compels the government to initiate remedial measures.[19] Apart from this, a few NGOs, like *Chintan*, are more directly involved in social/human rights aspects of waste management. The media also helps highlight environmental issues, and functions in the context of NGO-media and government-media interactions.[20] For instance, though the CSE had campaigned against the high level of toxic chemicals in the bottled water sold in Delhi, new (and rushed) legislation was introduced only when the issue was 'taken up' by the media [8]. However, while the media plays an important watchdog role in environmental policy making in India, it is equally subject to the readability/saleability criteria determined by the general public [23]. Therefore, the success of this approach remains patchy. Some international environmental

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[18] *Asian Age* 'Garbage poses an ecological threat to Delhi' (30 October 1997) cit. in Malik (1999).
[19] For example, the CSE's investigation found shocking levels of pesticide residue in 12 brands of Coca-Cola and PepsiCo because of contaminated groundwater sources, which resulted in a parliamentary investigation (see *Frontline* (2004) *Cola troubles* (Vol. 21, Issue 04, February) (www.flonnet.com/fl2104/stories/20040227008213400.htm accessed 20 June 2005).
[20] The media is quite sensitive to the issue of waste management especially in the capital (see Kataria, 2001).

organisations also exert pressure, in the form of research papers and articles, for example, the Greenpeace article regarding the failure of the Indian government to stem the tide of hazardous waste imports despite a ban by the country's highest court since 1997.[21]

Another source is public complaints regarding the lack of service provision by the MCD. By the MCD's own admission, its present level of service is far from users' satisfaction despite employing a huge workforce and a battery of vehicles for the service at large costs.[22] The number of citizen's complaints pertaining to accumulation of waste and insanitary conditions ranged from 2,045 in January 2003 to 744 in December 2003 [11b], on average five/day/zone [12b].[23] In addition, a resident can lodge a complaint with the RWA president to persuade the local councillor to take up the issue with the MCD. During the field work, this was witnessed at two levels: a RWA president [28] approached a local councillor [29] and local politician [20] for the refurbishment of a road flooded with rain water, and a local councillor [21] approached the MCD official [11] for the provision of street lighting in his ward. However, there was no clear established method of checking the progress of these complaints.

Understanding the political-institutional framework conditions: the Municipal Solid Waste policy network

The MSW institutional framework comprises diverse actors and their relationships. The policy process becomes clearer as one studies how these actors relate and interact based on their resources and constraints. Table 5.1 lists the actors and identifies their resources and constraints in the policy network. The actors with an active direct role in policy formulation and reform are identified as members of the policy community or 'core' in contrast to the more remote network members or 'periphery'. The interviews highlighted some distinct features of the network.

The self-perception of actors is important because it motivates their approach towards others in the network. The government sees itself as financially handicapped, responsible for the huge task

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[21] Greenpeace (2000) 'India remains favoured global dumping ground for toxic wastes' (11 September), (http://archive.greenpeace.org/pressreleases/toxics/2000sep11.html accessed 20 August 2002).
[22] MCD (www.mcdonline.gov.in/mcd/content.jsp accessed 15 October 2003) and in the Global Tender Notice for Public-Private partnership in collection & transportation of MSW by the MCD (2003).
[23] Each of the 12 MCD zones has a Control room where a complaint can be lodged. Complaints can also be made directly to the area Sanitary Inspector or senior officers. By 4 p.m. daily each zone reports the complaints received and attended to the Head Office and all concerned officials. See also *Hindustan Times* (2001).

of sanitation service provision with no recognition of its efforts. The industry is aware of its imposing position in the network and increasingly attempts at substantive regulation and occasional environmental initiatives [31]. The NGOs regard themselves as too resource-crunched to address all the issues at hand. Besides, they seek a niche for themselves in the increasingly competitive NGO politics. The generally apathetic public looks to the government to resolve the problem of waste, but interestingly is also aware of its own apathy towards waste and other environmental issues.

Table 5.1: Policy actors, objectives, resources/constraints and influence over MSW policy process (adapted from Smith 1997)

Policy Actor	Objectives	Resources/Constraints	Network Member /(Policy Community)
United Nations	Ensure sustainable development	International organisation of repute/lack of enforcement & monitoring resources	No (No)
Parliament, PM & Cabinet	Re-election concerns/de-regulation	Authority to introduce legislation & to re-organise bureaucracy/lack of resources to monitor, not completely independent of electoral concerns & 'external' influences	Yes (No)
PC	Setting national priorities	National Advisory body/no enforcement & monitoring powers, lack of independence	Yes (Yes)
SC	Ensure fair judgements on PILs	'Original, appellate, advisory jurisdiction'*, judicial review/restricted monitoring powers, no enforcement, subject to 'external' influences	Yes (Yes)
MoEF	National environmental executive agency	Formal authority over waste management as part of environment/inability to provide comprehensive & practical coordination of an integrated MSW strategy	Yes (Yes)
CPCB	National watchdog with powers of prosecution	Autonomous body/subject to 'external' influences	Yes (No)
MNES	Encourage WTE plants	Provides subsidies & capital to urban local bodies & businesses/unable to provide viable & effective waste management solutions	Yes (Yes)
Delhi government (DoE; GNTCD)	Responsible for Delhi's waste strategy	Direct legitimacy/too many other priority issues, re-election concerns	Yes (No)
DDA*	Planned development of Delhi (housing, parks, etc.)	High profile authority/'indifferent to environmental outcomes' (MoEF, 2000)	Yes (No)

Policy Actor	Objectives	Resources/Constraints	Network-Member /(Policy Community)
CPHEEO*	Health & safety regulation	Provides national guidance on health/monitoring constraints	Yes (No) '
Local authority (MCD, Mayor)	Obligatory waste collection & disposal services	Directly elected/financial constraints, waste is a low priority sector	Yes (No)
Safai karamcharis	Actual workforce of CSE department (MCD)	Trade Union/lack of resources to influence policy	Yes (No)
Environmental NGOs	Greater access to information, tougher environmental standards	Limited ability to mobilise public support & highlight environmental excesses by state & industry/resource constraints, focused on high profile issues	Yes (No)
Rag pickers	Livelihood through waste (creating an informal system of collection of recyclable waste)	Ability to convert waste into a resource (& livelihood)/unorganised hence subject to exploitation	Yes (No)
CII/ Industry**	Circumvent & pervert legislation (present or prospective) to lobby for relaxed rules	Economic legitimacy to contribute/regulation (often 'substantive')	Yes (Yes)
RWAs	Provision of basic sanitation services	Direct contact with residents/lack of resources	Yes (No)
Households	Sanitary surroundings	Voters/apathetic to environmental concerns	Yes (No)

*Falls under the central government Ministry of Urban Development.
** Industry refers to waste related industries like plastics, which are rarely environmental pioneers.
♦ SC (http://supremecourtofindia.nic.in/new_s/juris.htm accessed 29 July 2005).

Relationship between the levels of government

The multiplicity of policy-making authorities is part of the environmental governance system in Delhi. It is split between the government of India, GNCTD and local authorities.[24] The central government's influence on the day-to-day affairs of the city, legislative and the administrative set up is too strong and pervasive (MoEF and NCT report on DUEIIP, 2001). In fact, the report asserts that the sharing of powers and different perceptions and understanding of the local problems *between the centre and Delhi government* goes right to the heart of the *environmental*

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[24] See Jha (1996, p. 57). The EPA (1986) coordinates centre-state relations and empowers the centre to draft policy and rules applicable nation-wide. However, the gains of the green movement, in terms of complex laws enforced by the MoEF are often lost in implementation at the state level (Peritore, 1999).

problem (my emphasis).[25] Not surprisingly, this view was not substantiated by the bureaucrats of the GNCTD and the MoEF.[26] Furthermore, by retaining the planning system with the DDA, the centre maintains direct control of Delhi's development.[27] Planning is the responsibility of the DDA and the MCD does not impact very much on that process [11b, 12, 18].[28] The functioning of the local government itself is fragmented and weak due to a separation of executive powers and functions, where the former rests in the elected council and the latter in the Municipal Commissioner, a civil servant appointed by the state government.[29]

At the MCD ward level, key issues concern the *safai karamcharis* (MCD cleaners), who are usually part of a trade union, which gives them a 'better position of strength regarding their terms of employment and in cases of imposition of sanctions' [18]. The MCD had invited global tenders in 2002 to privatise the MSW collection and transportation in six zones, including segregation and disposal.[30] This was eventually restricted by the government to segregration of waste at *dhalaos*, due to the stiff opposition from the 48,000 *safai karamcharis* and their union (Jha, 2002).[31] The Municipal Commissioner, Rakesh Mehta, assured them that there would be no staff

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[25] This coincides with Agrawal's and Yokozuka's (2002) assertion that lack of decentralisation in the Indian political system makes it hard for environmental issues to be addressed through normal bureaucratic politics.

[26] Only [11b] the MCD official maintained that this division in powers and differences in understanding of local problems between the central and Delhi (GNCTD) governments does not help (in resolving) environmental issues.

[27] See also Delhi Newsline (2002) *MCD should've a seat in talks on Master Plan* (14 September) (http://cities.expressindia.com/fullstory.php?newsid=29438 accessed 20 January 2003). The article raised questions that despite being empowered by the 74th Constitutional Amendment, the MCD was sidelined in contributing to Delhi's Master Plan (2001). The DDA is responsible because it has the infrastructure and resources, which also allows the centre and Lt. Governor to have powers over the Master Plan and land distribution.

[28] The interview question specifically aimed to clarify DDA's role in the set up.

[29] See Jha (1996). Another perspective not explored in depth during the fieldwork is that of Sangwan (2002) who states that the majority of the Members of the Legislative Assembly (MLAs) of Delhi (GNCTD) would be more than happy to see the MCD polls deferred because the MLAs would remain the power centers with the corporators out of the way. He also refers to the call for a separate corporation for East Delhi by both the BJP and Congress parties. The Member of Parliament [22], MLA [20] and MCD local councillor [21] interviewed stated that, in general, there was coordination amongst the levels.

[30] The proposal covers 6 MCD zones, namely West, South, Central, Sadar Paharganj, Karol Bagh and City on a Design, Procure, Build, Operate, Maintain & Transfer basis (MCD, 2003). Also, the tender emphasises mandatory segregation of waste at the individual level without considering practical issues and the need to develop markets for the recyclables. It recommends landfill as the preferred solution to MSW. According to Malik (1996) though the MCD is thinking about privatisation, it still has a mechanised and centralised approach (outdated laws but none for reducing the quantity and type of waste produced), without adaptation to local needs and community participation.

[31] Similar attempts to privatise solid waste collection in Bangladesh were unsuccessful due to strong opposition from local government employees (Jha and Raghupathi 1995, p. 123).

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retrenchment because the MCD retained the tasks of cleaning roads, parks and public places.[32] In an article in a national daily,[33] he is reported to have said that private sector participation in the management and segregation of solid waste would create additional job opportunities for 15,000 people. According to [11b], the union's resistance was not so intense as to cause a reversal of the privatisation drive. In addition, bureaucrats [14d, 18, 11b] stated that the decision on the tenders would take 6-12 months, clearly missing the deadline (31st December 2003) set by the SC. Reservations on two counts have been expressed by bureaucrats [11b, 18]: first, whether this would actually be implemented and, if so at what speed and second, the criteria for selection. The four *safai karamcharis* interviewed were reluctant to divulge more about the working arrangements and reported good treatment generally by their officers (ward level Sanitary Inspectors).

Many bureaucrats and residents interviewed stated that, after signing in their attendance for the day, cleaners would then go off to other jobs or would get proxies for a percentage of their government salary.[34] The MoEF and MCD officials reaffirmed (14d, 12b) the view that:

> Despite the huge workforce, waste is still seen littering the streets, which is partly attributed to high absenteeism and low productivity of workers and partly due to the public attitudes and habits [....] It shows that merely increasing the work force will not mitigate the problem [....] There is a need to reduce MCD's solid waste management staff through institutional and management reforms, e.g. voluntary retirement scheme, as a measure of cost reduction (MoEF, 2000, Chapter 12).

Solid waste management is grossly inefficient, labour productivity at 0.15 tonnes per sweeper per day is low, there are no transfer stations and the capacity of the existing and formally identified landfill sites is critically low (MoEF and NCT, 2001). According to Cointreau (1982), municipal authorities consider that it would be impossible to employ municipal waste workers for the current salaries if it were not for the additional income the cleaners get from waste collected. Therefore, the practice of using proxies can be rampant.

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[32] *The Hindu 'Safai karamcharis* reassured' (1 May 2002) and 'No sanitation staff will be removed' (2 March 2003), New Delhi. Also, the Hindu '*Waste management to go into private hands*' (April 2, 2003), New Delhi.
[33] *The Hindu*, 2 April 2003.
[34] This aspect is not investigated. See *The Hindu* (7, 9 October 2002 & 2 March 2003) and *The Pioneer* (8 October 2002) for more details. See also *Express News Service* 'HC pulls up civic bodies for their wasted efforts' (2 February 2001, New Delhi) reporting on the petition filed by [19a].

Relationship between the branches of government

Constitutional provision for the right of access to the judiciary is important. It allows civic-minded citizens and (ex) advocates, like M.C. Mehta, [19a] and [19b] to file PILs for environmental protection measures to be introduced by the government. However, there has been no improvement in the work plan of the MCD with regard to SWM practices despite SC directions (Singh, 2001a; [7]). In general, the bureaucrats were not receptive to interventions by the judiciary in the functioning of various organisations. 'Just because the litigants know the system and how to use it, we are being slapped with rulings from the SC [....]. At most we will be suspended if we do not meet any recommendation' [14b].[35] Besides, [14b] and [11a] stated that environmental litigation could hinder development that is much needed for reducing poverty. As [6] asserts, the executive role is being performed by the judiciary; and the legislature successively fails to understand the problem. Though the SC has pronounced the 'polluter pays' and 'precautionary' principles to be part of Indian law, it is of little surprise when the Environment Minister states that '... the polluters and those who damage the environment are still able to get away without paying full compensation for the pollution and environmental damage caused by them. This has to change and we are determined to change it'.[36] While ferociously guarding its independence, the judiciary also faces the twin dilemmas of having to rely on the government for expert opinions and for ensuring implementation of its directives.[37] Therefore, the success of SC directives is patchy at best.

The various judgments by the SC have nonetheless disturbed the *status quo*, causing the government to make efforts to rein in the judiciary (Warrier, 1997). A Public Interest Litigation Bill was planned in 1996 by the government (United Front coalition with Dewe Gowda as PM) which would have required a mandatory deposit of Rs. 1,00,000 (lakh) for every PIL filed with the SC (Rs. 50,000 for the High Courts), refundable at the discretion of the Court if the PIL was successful. However, if the SC found the petition frivolous the petitioner would lose the deposit and attract a punitive fine. The Bill, however lapsed with the dissolution of the Lok Sabha (lower house of parliament) before the 2004 national election, and the SC currently uses its discretion to

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[35] See also Warrier (1997). Also, [14b] maintained he had evidence that one of the litigants had claimed reimbursement for airfare to Delhi from the hometown twice from the government for the same SC hearing.
[36] T.R Baalu, the Minister for Environment and Forests at the Conference of State Environment and Forests Ministers, New Delhi, 16 May 2000. (ENVIRO NEWS, April-May 2000, Vol. 4 No. 4 & 5).
[37] Interviews with three SC judges and bureaucrats at MoEF and CPCB (February 2003).

allow PILs.[38] The new government set up the National Environmental Appellate Authority (NEAA) with a similar objective to replace PILs (Warrier, 1997) by diverting environmental concerns away from the SC. Appeals against environmental clearances had to be addressed to the NEAA within 30 days of the clearance, and importantly, the verdicts of the Authority are not challengeable in any other court.[39] On the other hand, the system of PILs itself is not free of abuse, causing the SC to alert the High Courts against PILs becoming 'Paise (Rupee) Income Litigation', where litigation is pursued to extract money through blackmail.[40] It cautioned against the unregulated use of PIL petitions, with some persons misusing the judicial process either through force of habit or from improper motives.

While judicial activism in India cannot be regarded as the solution for a dysfunctional executive or legislature, its role in initiating the drive towards sustainable development has been particularly important.[41] Being under the watchful eye of the media, the SC guards what it regards as its impartial position, especially in relation to 'green' issues [19, 19a]. However, the judiciary relies on the administrative and executive arm of the state for advice on policy formulation, including implementation of MSW policy.

Certain organisational bottlenecks were also apparent during the fieldwork. The CPCB monitors waste collection, transportation and disposal practices adopted by MCD and NDMC, with authority to prosecute their officials in case of non-compliance. However, the CPCB employs SC lawyers to prosecute, thereby setting one government employee against another [19c]. This creates internal resentment within the administration. Another example is in the use of transfers. One bureaucrat was transferred to manage a landfill site as a 'demotion' for being too honest [11b]. The SC advocate [19c] interviewed knows of cases where the judges were transferred if they were 'pro-environment' and that system of graft can be rampant. Further, officials realise that some schemes will not work [15a].[42] Singh (2001) reaffirms that an earlier attempt to impose

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[38] See Muralidhar (1998).

[39] Environmental clearance implies confirmation from the MoEF (DoE in states) that the intended project meets the requirements of the various environmental regulation of the country and consequently can be given the go ahead.

[40] See *The Hindu* (2003) Supreme Court caution on abuse of PIL (22 December) New Delhi. (www.hinduonnet.com/thehindu/thscrip/print.pl?file=2004122202951200.htm&date=2004/12/22/&prd=th & accessed 2 January 2005). Also see Anant and Singh (2002).

[41] See Anant and Singh (2002).

[42] See Gupta (2001) who refers to the reluctance of municipal officials to implement the state directive to fine people for not segregating garbage.

a fine of Rs. 50 on littering by the MCD was unsuccessful because people simply refused to pay, which has since been given up.

Relationship between government departments

Various government departments and agencies regard the environment as the responsibility of the MoEF at the central level or with the equivalent state department [12]. However, in practice environmental pollution (including that arising from MSW) falls under the jurisdiction of the CPCB, DPCC, departments of education; health; industry, DoE (GNCTD), Delhi Transport Corporation, CSE (MCD) and the Delhi Jal (water) Board.[43] The MoEF itself is a relatively new department and its clout in policy circles is not strong enough [11b] to ensure adequate consideration of environmental concerns in the development agenda.

Interestingly, the MoEF (2003, Chapter 13) recognises the weak bargaining position of the DoE at state level. The DoE is still in its formative stages, and does not enjoy the required financial and administrative powers. With no organised field agency to supply constant information and monitor activities, it needs to organise an effective monitoring system so that it can make timely interventions and take corrective measures in matters which assume public importance. The concept of sustainable development is yet to be internalised by all these ministries and the people who man them [18], which makes it harder for the MoEF to achieve its objectives. The MoEF and NCT 2001 report on the DUEIIP project recommended the creation of Environment Cells in these departments.

Relationship amongst the actors

Generally, the relationship between the groups of actors belonging to NGOs, the industries, government and the public is marked by degrees of mutual scepticism and mistrust, with the relationship between industry and government showing some clear signs of cooperation. The industry, often through the CII, lobbies the government on various policy issues, including MSW. According to [31], industry not only has a strong impact on the policy process, but often also

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[43] The Central Public Health Environmental Engineering Organisation (CPHEEO), which falls under the Ministry of Urban Development (like the DDA) provides technical support to solid waste management schemes. Entrusted with preparing Manuals on public health, it drafted the Manual on MSW management. Apart from stating the importance of hygiene while managing waste, the bureaucrat interviewed [27] was unable to shed light on the inter-organisational relationships.

manages to ignore the law. The Environment Management Division (EMD) of the CII is consulted by the government. In fact, according to its brochure, 'this partnership with the policy makers has reached a stage where EMD is now consulted before any policy interventions are finalised'.[44] Of interest are the statements by [31], an EMD official, that he tried his best 'to ensure environmental objectives are respected, but that is not always possible', and that the 'EMD as a division tries 'to push the line that environmental protection makes business sense.' He is referring to *lobbying the different industries* on the environment issue. The government invites individual companies to be part of its Task Force. For instance, the *Plastics Task Force* had *Reliance* (the biggest producer of plastics in India) as one of its members.

Various committees constituted by the government propose financial and fiscal incentives for recycling industries. For example, the Barman Committee (1999) recommends land allotment, power, water on priority basis, tax holidays and preferential purchase of recycled products by government organisations. However, the effects of the incentives offered, for instance, in the Policy Statement of 1992 (MoEF, 1992b) have been minimal. The industries are reluctant to seek loans and financial assistance due to the corruption-plagued decision-making practices of the financial institutions or because they prefer to wait for the enforcement system to become tighter [4, 7, 11b, 14, 31]. Since agriculture remains the predominant sector, there are limits to the ability of the government to challenge the power of the fertiliser and chemical industries in favour of composting [14].

The role of environmental NGOs in the development process has recently been reinforced in government circles. For instance, in March 2000, the PC was made the nodal agency for governmental organisations and voluntary organisations interface.[45] The Report (January 2002) admits a lot of variation in the procedures/guidelines of the central and state government departments in the way they involve the NGOs. It also states that 'most departments/ministries have not played a pro-active role in establishing a partnership with committed voluntary organisations and have generally confined their attention to only those who apply for funds to their offices' (Chapter 3, pp. 11). The government recognises the role played by NGOs and the importance of having participation for a 'green image'. However, the government is not hesitant in overriding their concerns while designing policy. The NGOs are aware that the government

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[44] CII, *Environment Management Division: in pursuit of Sustainable Development.*
[45] 'Report of the Steering Committee on Voluntary Sector, for the Tenth Five Year Plan (2002-2007)', PC (January 2002) TFYP Steering Committee Sr. No. 7/2001.

does not take their concerns or views on board despite the professed consultations.[46] Disagreements expressed in meetings (held under the *Plastic Waste Force* rubric) are ignored, yet the report states the NGOs participated [7]. In fact, a couple of NGO participants complained to the committee chairman but did not even receive a formal reply to their letter [3]. Though various NGOs are consulted, their impact can be quite diluted [31]. The NGOs, thus, remain critical of governmental initiatives. Some of the NGOs have been present in the field for years, but their expertise is not invited in both policy-making and its implementation.

> The MCD is not too receptive towards NGO initiatives [....] like what we do
> [....] to train workers to collect and dispose of waste sustainably from
> neighbourhoods and to implement community level municipal solid waste
> disposal. The contracts do not differentiate between NGOs and private sector [6].

Therefore, in the case of the MoEF, the trust between the Ministry and NGOs on the issue of waste was definitely lacking, even though the bureaucrats were appreciative of the latter's role [2, 3, 4, 6, 7, 8, 8a] and referred to various schemes for encouraging participation by the NGOs.[47] Although the Tenth Plan goes a long way in establishing the right environment for government-voluntary sector participation, it fails to address the lack of trust. Further, 'the move to hand over the city's cleaning work to a private agency is ridiculous [because] such work could be done by the state organisation itself [....] if you do [talk] privatisation, the first partners you should have are the waste pickers [....] [but] [....] you [the government] totally ignored the biggest partners in waste' [7]. They feel that the policy makers are too far removed from the reality on the ground [3, 6, 7]. For example, the detailed technical rules regarding the size of the brooms/dust-carts and the requirement that cleaners have to wear plastic gloves totally disregards the hot summer conditions in India. Thus, the NGOs interviewed had reservations about the Municipal Waste (Management and Handling) Rules (1999) and the Manual (2000) for reasons of transparency and excessive focus on technical issues. A few bureaucrats [11b, 18] interviewed agreed with this view. Often, though the aim is to influence policy, the NGOs face resource constraints which allow concentration on only a few select issues at a time [8, 8a]. The industry recognises the importance of NGOs in ensuring environmental protection but also tend to ignore their concerns.[48]

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[46] For instance, the NGOs lobby for 'extended producer responsibility' which the state refuses to incorporate into its policies [6].

[47] The Report (January 2002, PC) highlights the schemes to encourage and reinforce their effectiveness as an important actor in the implementation of the Tenth Plan. The Director General (Forests) of the MoEF was a member of the Committee.

[48] Interesting to note that some NGOs regarded one particular NGO as being 'close' to industry.

The public in general do not exert sufficient pressure on the institutional framework. The view amongst interviewees, including from the government, that the public is apathetic to environmental concerns was largely substantiated by the members of the public interviewed. Only two [24b and 24c] out of the five householders interviewed showed more understanding of the environmental issues associated with waste and willingness to adopt environment-friendly waste management practices, while only [24] and [24b], both housewives, actually recycled (mainly paper) by selling directly to the *kabadiwallahs*.

In 2000, the MoEF (2000, Chapter 12) considered the idea of levying a monthly fee on all households for solid waste collection and disposal. However, it remained on paper. There is not a hint of extending this ('polluter pays' principle) to charge householders directly for the provision of waste services [11b]. According to [24d], as a member of the public, he would 'definitely not pay higher (taxes) [....] they (the government) should manage funds better'. Waste is perceived as the government's problem [6, 7]. One mentioned that it '[....] [MCD] is the service provider and we pay taxes' [24d]. All were of the opinion that the MCD could do more. Further, [3] highlights the reluctance in even the affluent middle and upper middle class to make nominal payments for waste disposal, the ineffectiveness of RWAs in mobilising residents to cooperate towards waste disposal and their reluctance to supervise disposal of waste.[49]

The public regards the government as inefficient, the political masters as corrupt and the industries as anti-environment and feels powerless to challenge the *status quo*. However, the residents are occasionally spurred into action, exhibiting Nimbyism.[50] For instance, residents of the Bawana area protested against the government's proposal to construct a landfill site in their area. The MoEF is often seen to be unsympathetic to the environment and against public health by promoting incinerators and other combustion technologies and landfill which are known to be serious polluters.[51]

Despite the important role of the rag pickers in MSW, they are often treated as part of the problem rather than the solution [6, 7]. Malik (2000) profiles the rag pickers of Delhi, who are

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[49] See Malik (1999).

[50] *Hindustan Times*, 'Bawana villagers sore over L-G's nod to sanitary land site', (April 28, 1999), New Delhi. See also Gupta R. 'Landfill proposal raises a stink' (1999) in *The Times of India*, and *NetGuruIndia.com* (11 July 2000) (www.calonline.com/news/Jul00/11/DEL4.html accessed 10 January 2004).

[51] No Plastics in the Environment Press Release 'Plastic Waste Problems Remain Unresolved' (February 16, 2002), International Plastics Task Force (www.ecologycenter.org/iptf/asia/NoPEpressrelease.html accessed 26 October 2003).

generally from a rural background, uneducated and predominantly male.[52] Agarwal *et al.* (2002) highlight the plight of the rag pickers, who are not only under-paid but lack any form of collective bargaining power. There is no mass mobilisation as identified by Agrawal and Yokozuka (2002). Apart from being subject to the abuses by both waste dealers and government staff at landfill sites, they are also exposed to the fluctuations of the recycling market [7]. The plight of the rag pickers does get highlighted occasionally due to efforts of activist lawyers and NGOs (like *Chintan*) who file petitions on their behalf.[53] Yet, according to [7], various plans for Delhi have consistently left out the informal sector or, worse, even in the name of environmentalism managed to convert the sector into an illegal one. 'Trade in waste at this level is not licensed and regulated by the Delhi government' (Agarwal *et al.*, p. 53). In 2000, all commercial activities (like the waste trade) taking place in slums was banned; illegal factories were closed down for environmental and planning reasons instead of considering cleaner production processes. These factories actually reprocessed the city's waste and were part of the environmental agenda for recycling ([7]; Chaturvedi, 2001).

During the field work, a surprise visit (in February 2003) to the Okhla landfill site caught the government staff unaware; otherwise 'the rag pickers would have been forced to leave' [11b]. The four rag pickers [25, 25a, 25b, 25c] interviewed patiently explained the economics of their work and were not resentful of the government staff posted at the site.[54] They were unaware if the MCD had considered any schemes to formally incorporate them into the waste services of the MCD.

It is important to highlight a subsidiary but relevant aspect encountered during the fieldwork. The interviews revealed some discrepancy between views of individual bureaucrats and those of their organisations expressed in policy documents, though the individuals often complied with the organisational line. For example, during the interview with [11b] alone, he showed a better understanding of environmental issues than his boss [11]. However, in a joint interview with the

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[52] Rag pickers number approximately 1.5 lakh in total, hundreds were interviewed (but no specific number mentioned), 70% were below the age of 18 and 30% of the rag pickers were female. 50% of rag pickers have been in prison at some point. 90% pay *hafta* (weekly bribe) to the local police (Malik, 2000). (1 lakh = 1,00,000). See also Kumar (2000).

[53] *Hindustan Times* 'Centre, Delhi Govt reply sought on child rag pickers' (20 September 2002), Delhi. (www.hindustantimes.com/2002/Sep/21/printedition/210902/detCIT07.shtml accessed 26 October 2003); *The Tribune* 'HC notice to Delhi Govt, Centre on rag-pickers' lot' (21 September 2002) (www.tribuneindia.com/2002/20020921/ncr2.htm accessed 26 October 2003).

[54] My impression is that they were withholding information because the officials were around, and it is conceivable that I did not come across as impartial.

boss, [11b] agreed with [11] that landfill made a very good option. Some, in particular [11b, 18], expressed deep frustration with the system and their personal inability to change things within the 'system'.[55]

The core and periphery

The interaction within the network helps identify the direct/indirect influence of actors on the policy process. Based on the analysis and Table 5.1 earlier, the core set of actors can be distinguished from the periphery (see Figure 5). There is a general awareness of the distinction between these two layers, especially of the existence of this core community.

The core actors remain largely insulated and immune to pressure from the wider network, including pressure, however small, exerted from external (e.g. international organisations) sources. Their main resource stems from authority, money, political legitimacy, control over information and organisation. As this section highlights, environmental awareness amongst the public and pressure from the judiciary, has on occasion managed to force this policy community to seek token participation from 'outside' actors, like the NGOs, in the reform of MSW policy. The government thus appears to allow access to the policy process in exchange for a semblance of co-operation and approval from NGOs. The influential position of the industry also filters through into the implementation stage, as evidenced more in industrial regulation than other areas of environmental protection - thus giving rise to what one SC judge calls 'substantive regulation or compliance'.

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[55] See also Peritore (1999). 'The general experience is that the roles of the local politicians and bureaucrats in urban governance has been reversed: the former are more interested in such functions as tenders, contracts, recruitment, transfers, etc. while the latter play a critical role in policy matters affecting urban government, planning and the development of urban areas [.....] This is also because the officials in municipal corporations and state agencies often belong to integrated state services' (NIUA, 1998b, p. 5). While this aspect was not explicitly explored in this research, the field interviews did suggest a higher influence of bureaucrats over policy-making. The members of the PC are mainly high ranking bureaucrats.

Figure 5: MSW policy network in Delhi
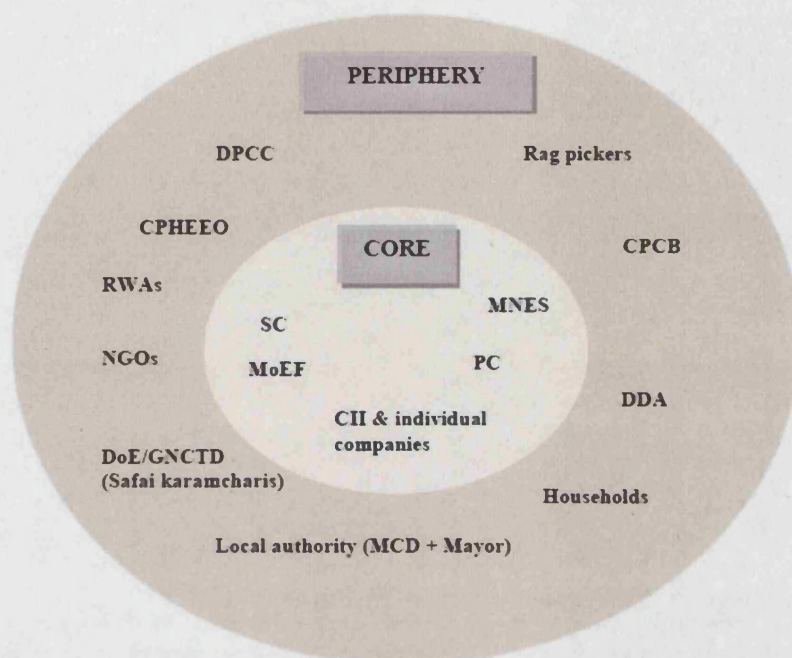
CPCB=Central Pollution Control Board; CII=Confederation of Indian Industry; CPHEEO=Central Public Health & Environmental Engineering Organisation (Ministry of Urban Development); DDA=Delhi Development Authority; DoE=Department of Environment; DPCC=Delhi Pollution Control Committee; MCD=Municipal Corporation of Delhi; MNES=Ministry of Non-conventional Energy Sources; MoEF=Ministry of Environment & Forests; NGOs=Non-Governmental Organisations; PC=Planning Commission; RWAs=Resident Welfare Associations; SC=Supreme Court.

The highly integrated core, symbolised by entrenched stable relationships between government and industry, shapes MSW policy to the extent of excluding any 'other' or 'new' influences. Only those actors with consensual views are allowed to participate. The resource interdependencies amongst actors in the core bring about relationships most beneficial to them. Embeddedness is exhibited by the success with which the core manages to counter any pressure for change.

The network is conditioned by not only the structural reasons for the existence of various organisations in the government, non-governmental, industrial and societal levels, but also by the *mutual perceptions* of dependence, vested interests and power relations including societal clout. Actors' perceptions of the problem and solution recommended by the government lead the different actors to develop and implement strategies conditioned not only by their resource constraints but also by their status in and understanding of that network.

This core-periphery analysis contrasts with the Agrawal and Yokozuka (2002) focus mainly on the political aspects of institutions, like democracy and participative democracy.[56] Secondly, it shows why they are overly optimistic in anticipating that local grassroots movements would incorporate environmental concerns and that they would be successful in influencing policy. Further, in their view, India's institutional agendas are not highly constrained which allows two effects: it allows any issue to be placed on the agenda once articulated societally but the very multiplicity of issues that are placed on the agenda means that not all of them can be addressed. While the concession is more aligned with the findings of this research, the former is subject to the constraints of how and who articulates the issues. The core-periphery analysis shows that only the dominant actors get to articulate their views, as explored further in the following section on responsiveness.

Responsiveness: anything but effective MSW policy reform

Recognition of the MSW problem

How does the existing institutional network described above influence responsiveness to pressure for environmental reform? The government itself has acknowledged that 'the state of the environment continues to deteriorate' and that policies need the appropriate institutions to be carried through.[57] The 1992 Policy Statement (MoEF) recognised the significant pressure exerted by the PILs filed by NGOs and civic-minded individuals. However, the *polluting industrial units* were regarded as the subjects of the pressure rather than the governmental machinery as the agency responsible for environmental policy formulation and implementation.[58] The two PILs in 1996 and 2000, on the other hand, actually focused on ensuring that *government departments and agencies* performed their responsibilities efficiently and ensured environmental sustainability in MSW management.

Official recognition of the problems of waste management in Indian cities, including Delhi, is not new, including recognition that the problems in management of wastes relate to its collection, handling, transport and disposal (MoEF's *The State of the Environment Report: India*, 1999). The

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[56] For them (p. 244), participatory democracy with direct action can provide 'the most efficient way to internalize environmental preferences, and to induce the political system to maximize responsiveness to the expression of environmental interests'.
[57] MoEF (1992b) *Policy Statement for Abatement of Pollution 1992.*
[58] *Policy Statement for Abatement of Pollution* (1992) (26 February 1992) MoEF.

White Paper on Pollution in Delhi (1997) identified Delhi's rapid urbanisation as resulting in a significant increase in environmental pollution in Delhi, especially solid waste. The White Paper and other publications also listed the deficiencies in provision of various civic services. In 2003, Delhi's CM, Sheila Dikshit categorically stated that disposal of garbage is becoming an increasingly serious problem for the city that threatens to derail civic services if not handled on an urgent basis.[59] Further, she states that the depletion of land for use as sanitary landfill was likely to imbalance the environment and ecology if immediate steps were not taken by the MCD in collaboration with Delhiites.[60] Thus the problem was not only recognised but recognised as fast becoming urgent.

Similarly, the level of awareness regarding problems associated with ensuring efficient and sustainable MSW, and the obstacles faced in finding solutions is also high. The Barman Committee report (1999) concluded that lack of financial resources, organisational weakness, improper choice of technology and public apathy towards solid waste management, all contributed to make the services far from satisfactory.[61] The report, elaborating on organisational arrangements, states that the services are inefficient and lack professionalism, which results in poor levels of service. It also points to the lack of adequate laws regarding the urban local bodies, which consequently are unable to deal with the situation effectively. Existing legal regulations lack power to punish any defaulters, while filing cases for sanitation offences is a cumbersome and time consuming process. Even where adequate provisions/laws do exist to regulate industry and other polluters, the government agencies are *reluctant to use them* (Divan and Rosencranz, 2001 emphasis added). This reluctance suggests the presence of an adverse institutional framework which conditions the nature, direction and efficacy of the state's waste service delivery.

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[59] Press Trust of India (reported in Samaya.com 28 August 2003) 'Haryana, UP not cooperating with Delhi in wate disposal: Dikshit' (www.saharasamay.com/article.asp?news_id=4542 accessed 24 October 2003).
[60] Tribune News Service 'Cut use of non-biodegradable items: Sheila' (August 28, 2003) website - http://www.tribuneindia.com/2003/20030829/ncr1.htm (accessed 24 October 2003). She was addressing the 2nd Bhagidari (citizen-government partnership) workshop on segregation of solid waste.
[61] Report of the Committee constituted by the SC 'Solid Waste Management in Class I Cities in India' (March 1999) or the Barman Committee Report. Another example is the Municipal Solid Wastes (Management and Handling) Rules, 2000 (MoEF).

Organisational and policy initiatives

The MoEF and Government of Delhi (2001, DUEIIP) declared the strategic objectives to make Delhi a more environmentally sustainable and livable city through planned urban development for controlled growth, reduced service deficiencies and urban poverty alleviation, and developed community awareness and trust in government. The National Productivity Council (Training document) further states that, although the government relies on the policy of direct regulation (i.e. command and control) principle for pollution control, it has been recognised that the *problem of pollution has become more acute over time despite the regulations.* Hence, it asserts, conventional regulatory instruments should be combined with fiscal incentives, voluntary agreements, information and public participation.[62] However, this move towards newer forms of regulation does not get translated in the field of MSW.

The National Conservation Strategy (1992) in turn gave due importance to the strengthening of, and closer interaction among, the regulatory bodies and administrative machinery, as well as the need for periodic reviews of existing laws and enforcement mechanisms. But no particular measures were introduced to ensure implementation. According to the PC (2003), schemes which require coordination and synthesis, like environmental protection, have yet to be subjected to coordinated policy formation; hence it leads to the existence of a multiplicity of agencies.[63] This is made more complex with the existing relationship between different levels of government, as explained earlier. The PC, in its mid-term appraisal of the Ninth Plan (1997-2002) stated that:

> Developmental policies impinge heavily upon the environment requiring inter-sectoral policy integration [....] At present there is no institutionalised policy-integrating and coordinating mechanism, with the result that a compartmental approach to environmental protection continues to be followed with extremely indifferent results.[64]

Though between the MoEF and the CPCB, the environment, and waste management in particular, could be quite successfully managed, no immediate measures were introduced to ensure policy integration across diverse sectors. Therefore, the reality on the ground is different [11b, 12, 14]. Besides, as [6, 7, 11b, 18] mentioned, the producers of waste are economically relevant, strong in

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[62] National Productivity Council Waste Minimisation Circle (http://wmc.nic.in/about-wmc.asp accessed 23 October 2003).
[63] PC (http://planningcommission.nic.in/ accessed 20 October 2003).
[64] PC, *Mid-term appraisal highlights of Ninth Plan (1997-2002)* (http://planningcommission.nic.in/plans/mta/midf.htm accessed 10 December 2003).

their influence and constitute part of the core in the network. This is not to deny that the lack of coordination amongst the Ministries adds to the complexity of MSW policy. For example, as discussed earlier in Chapter Four, the MNES subsidises waste-to-energy (WTE) plants but not composting plants, thereby inhibiting recycling initiatives - despite confirmation from the MoEF (2000) that the energy yield from waste is low, with a calorific value between 528 to 895 kcal/kg., indicating a lack of feasibility of WTE schemes. Besides, while one megawatt of coal-based energy costs about Rs. 5,00,000, the cost of energy from waste can exceed Rs. 8,00,000/megawatt.[65] The unsuccessful WTE plant set up at Timarpur is a property of MNES with the MCD supplying the waste to the plant at no cost [11b].[66] Yet the government still regards WTE as a cost-effective method of disposal (CPCB publication).[67] The MCD is aware of the MNES incentives, hence 'tries hard to woo honest private entrepreneurs to set up waste to energy plants' [11b]. There is what [6] called 'technological astigmatism'.[68] According to the Secretary of MNES, since present income from WTE projects is limited mainly to the sale of power (electricity), it is providing financial and fiscal incentives for the National Programme on Energy Recovery from Urban and Industrial Wastes to make them viable.[69]

Financial support is also available through the Indian Renewable Energy Development Agency (MoEF, 1998). WTE projects can avail of subsidies up to 50% of the cost of the project (Agarwal et al., 2002; [7], [8a]). This is despite the 33 feasibility reports, 17 Memoranda of Understanding over 5 years but no successful WTE plant in the country, and several scams (plus 2 convictions) (Patel, 2003; Agarwal et al., 2002). Further, in not involving segregation of plastics, it violates the government's own MSW Rules 2000 (Toxics Links, 2002). In addition, WTE plants provide a market for failed technologies of the West [11b]. 'Using waste-to-energy technologies in the Indian context is like using an atom bomb to kill a cockroach' [6]. According to *Toxic Links*, waste is a problem that can only be solved by people's participation, not by 'quick fix'

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[65] Non-governmental sources point out that a compost plant will cost less than Rs. 5,00,000 (Toxics Link, 2002). In addition, that India has an annual shortfall of 6 million tons of organic manure (Patel, 2003).
[66] A pilot run attempted again in 1992 by a private entrepreneur introduced a waste segregation plant to enhance the calorific value but it failed because it still required auxiliary fuel to burn the waste and produce power.
[67] CPCB *Management of Municipal Solid Waste*, Booklet, Delhi.
[68] Implying that there is not only distortion in the choice of technology but also a blurred idea of the workings of the technology adopted.
[69] Secretary (MNES), *One-day Seminar on Urban Waste Management* (24 January 2003), Consultancy Development Centre, Delhi.

technologies.[70] The crucial need to complete the loop by creating markets for recyclables has been recognised by the national government but various initiatives have fallen short by far.[71]

Without financial or other subsidies and a ready market, alternatives higher up in the waste hierarchy, such as composting initiatives, are less likely to be successful. For example, the Okhla compost plant, with a capacity of 150 tonnes/day, was set up in 1981 to supply compost to the horticulture department, kitchen gardens and farmers of Delhi (Singh, 2001a; [11b]). It was closed in 1992 for various reasons: the MCD could not develop a market for the compost at a viable price, low productivity of the municipal workers and poor quality of compost due to the presence of glass and metals (GHK International, 2000 for the MoEF and GNCTD). In 1998, the MCD set up another compost plant in partnership with Excel Industries, on a Build-Own-Operate-Maintain basis, at the existing municipal landfill site at Bhalswa, North Delhi. The plant, however, is facing severe problems because the MCD did not provide a road to the site, there is insufficient quantity of correct quality MSW, high production costs and the absence of a ready market for the product (MoEF, 2000). As mentioned earlier, the chemical fertilizer industry lobbies strongly for subsidies etc. that constrain the possibility of developing markets for composting.[72] The MoEF (2000) also mentions the project for the extraction of gas from the Okhla landfill site (amongst others), under implementation with about 80% of the work completed. However, this does not exist on the Okhla landfill site.[73]

Hard pressed for solutions, in 2001 the Delhi government sought the SC's permission to denotify Delhi's only reserve forest and use it as a landfill, writing off the efforts of the large-scale afforestation programme at the Bhatti Mines (notified as a reserve forest in 1994).[74] This proposal contravenes both the Indian Forest Act (1927) and various SC directions to protect reserve forests. The affidavit filed in court mentions only once that the area of the proposed landfill site includes a reserve forest, a clear indication of manipulation of information by the government. The demand (including denotifying of the reserve forest) was first made in 2001 when the efforts of *Srishti* managed to deter that initiative on the 'denotification' argument.

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[70] Toxic Links (www.toxicslink.org/index1.php?prg=issues.php&id=municipal-waste accessed 20 October 2003).
[71] National Productivity Council Waste Minimisation Circle (http://wmc.nic.in/about-wmc.asp accessed 23 October 2003).
[72] See Surendra (2001). Also see Shiva (1999), Dutt (2007).
[73] Field visit in 2002.
[74] Indian Express 'Delhi government asks SC to use Bhatti Mines as landfill' (25 November 2002), New Delhi. Also see Gupta (2001).

The same proposal was re-introduced in 2002 albeit without the specific need to denotify the reserve forest by asserting the right to use 'an already vacant and naturally available pits in a scientific way' (Agarwal, 2002). The SC has so far managed to obstruct any attempts to use the mines as a landfill. However, the SC is aware of its lack of implementation powers. Ruling on Almitra Patel's case (AIR 2000, AC 1256), the court expressed concern that the 14 'directions' issued by it in Wadhera's case (AIR 1996, SC 2969) had not been complied with and concluded the judgment by giving directions over and above the ones in Wadhera's case (Kripal et al., 2000). The Ratlam judgement (in 1980) by the SC had held that budgetary constraints did not absolve a municipality from performing its statutory obligation to provide sanitation facilities, and supported the Magistrate's order to compel the municipality to implement a sanitation scheme within a definite time frame.[75] However, the SC addressed the question of raising finances for the MCD to implement the scheme by hoping that the state government would aid the municipality. Interestingly, the Rules (1999) state that the municipal authorities shall adopt suitable technology or a combination of technologies to use wastes in order to minimise the burden on landfill. The municipal authority or the operator of a facility intending to do so should approach the CPCB for the standards before applying for grant of authorisation. Further, that landfilling should be restricted to non-biodegradable, inert waste and other waste that are not suitable either for recycling or for biological processing. However, this remains on paper [7, 11b].

Another showcase example of how the core actors dominate the policy process is the National Plastics Waste Management Task Force (NWMTF), which was set up in 1996 by the MoEF with representatives from the government, business and NGOs to report on the issue.[76] The 16-member Task Force met eight times behind closed doors to resolve the problems of plastic waste (Edwards and Kellet, 2000).[77] The Task Force had few government representatives, no health official and some retired government officials who had joined the industry as consultants [7]. It is of little surprise that the report concluded that the plastic bags were not a threat to the environment but that the problem arose because of the way they were (mis)managed. The plastic

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[75] *Ratlam Municipality* v. *Vardichand* AIR 1980 SC 1622. See Divan and Rosencranz (2001).

[76] According to Das (1999) Delhi tops Asia's waste-plastic market, handling and trading over 1,000 tonnes of waste daily. The All-India Plastic Manufacturer's Association had submitted a memorandum to the MoEF, against the restriction on use, sale and manufacture of plastic carry bags (*The Asian Age* Delhi is most polluted city in India: Baalu (27 November 2001). See also Rangarajan (2004) who discusses the dangers of using plastics in the road-laying process. He states that the Central Road Research Institute which probably cleared the technology, is now into studies of using Isocyanide waste from plastics manufacturing in road laying, and that it is quite possible that the plastic industry is funding CRRI's research.

[77] See Edwards (2000).

industry was happy with this response of the state, since, for them it has 'in effect taken the pressure of[f] the issue of producer responsibility and refocused it on managing plastic waste as one of littering that needs to be managed as a consumer and municipal responsibility rather than an industry one' (Agarwal *et al.*, 2002, pp. 20).

In 2000, the DoE notified the Delhi Plastic Bags (Manufacture, Sale and Usage) and Non Bio-degradable Garbage (Control) Act to ban the use of plastic bags below 20 microns in thickness.[78] This would ensure that it made economic sense for the rag pickers to bend down and pick up the bags for recycling [11, 15].[79] It also bans the use of coloured and recycled bags for storing, packaging and carrying foodstuffs because the toxic dyes can leach into the food. It carries huge fines, as high as Rs. 25,000, for manufacturing coloured plastic bags. According to the Environment Minister, A.K. Walia, this would increase the cost of the polybags by about five times and thus deter their use.[80] However, the Act failed in practice to reduce the actual amount of plastic in circulation [7] and ensure the environmental sustainability of the technology adopted to recycle the bags. The Plastic Rules only succeeded in increasing the amount of virgin plastic in the market [3, 7]. Environmentalists thus disagreed with the report and the legislation.

An NGO interviewee [7], a member of the Task Force, confirmed that the argument used by the government was that a thicker plastic bag would make it more economically worthwhile for rag pickers to pick it up, thus reducing its incidence on the streets.[81] However, [7] went on to say, a thicker polybag does not hike the price to deterrent levels nor does it increase the income of rag pickers, resulting in the persistence of the problems that the legislation intended to solve [7]. Though the government banned the use of recycled polythene bags for food packaging, it failed to create incentives either for the manufacturer or market development of environment friendly alternatives (Nivedita, 1999). In fact, it is the 'crooked solution' referred to by Edwards and Kellet (2000), who also reiterate that though non-degradable plastic bags are poisoning and clogging up India's towns and cities, solutions are hard to come by, largely due to the political influence of India's plastics industry. This view was rejected by the CPCB official [15], who

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[78] GNCTD (2001) *The Delhi Plastic Bag (Manufacture, Sales and Usage) And Non-Biodegradable Garbage (Control) Act, 2000* (Delhi Act No. 6). (http://dpcc.delhigovt.nic.in/act_plastic2k.htm accessed 15 October 2003).

[79] There is 'no coca cola bottle on the road' but there are plastic bags [15].

[80] 'Ban on recycled plastic bags begins in Delhi: Polyethlene bags to be 20 microns thick' in *The Times of India* (3 October 2001). (www.cleantechindia.com/eicnew/News/PLASTICBAGS.htm accessed 14 October 2003).

[81] Also see Unnithan (1998).

stated that the ban has been implemented in various states with good results.[82] The industry's representatives interviewed were unwilling to consider any measures that removed/reduced plastic bag usage. Plastics contribute just 2% of the company profits but because they see a huge potential for growth, they are averse to any regulation that restricts its use [3, 6, 7]. Table 5.2 shows the potential growth in demand for plastic.

Table 5.2: Polymer (plastic component) demand in India (thousand tonnes)

Year	Demand
1965	44
1975	125
1985	523
1995	1780

Source: Parivesh Newsletter (September 1998), CPCB.

No officials (neither government nor CII) interviewed were able to explain the reasoning for the recommendations in the report. The NGO representatives were made an unwilling party to the report (as their credentials were included) while being in complete disagreement with its contents. According to Edwards and Kellet (2000), at the first meeting of the Task Force, the reasonable proposal by the CPCB Chairperson [15] that the plastics industry take responsibility for its waste through 'buy back' schemes was rejected. This stance was upheld at the Task Force mainly due to the political (and economic) influence of the plastics industry, often passed off under the garb of unemployment (in the plastic industry) concerns [6].[83] The interaction between government and industry has actually been cemented by the setting up of the Indian Centre for Plastics in the Environment (ICPE) with financial support from the industry. 'It is the nodal agency recognised by the Government of India to handle all issues related to plastics and environment in the country'.[84]

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[82] The Times of India 'Ban on recycled plastic bags begins in Delhi: Polyethlene bags to be 20 microns thick' (3 October 2001) New Delhi. (www.cleantechindia.com/eicnew/News/PLASTICBAGS.htm accessed 14 October 2003).
[83] The Indian plastic packaging industry, made up of 18,000 firms employing more than 5,00,000 persons, has an estimated annual average growth of 15% per annum since 1990 (Agarwal et al., 2002). The packaging industry provides one of the single largest markets for the plastics industry, consuming 15% by volume of the total Indian plastics production (p. 9). Reliance Industries is the biggest giant with a 56% share of the plastic market in India and they want it to grow (Gobar Times, November 2000).
[84] IPCE (http://www.icpenviro.org/aboutus.asp accessed 12 January 2005). The ICPE is promoted by the industrial group Reliance and other members of the plastics industry. Its charter states its intention to 'help sustain an environment friendly image of plastics by highlighting the positive role of plastics in conserving resources and its 100% recyclability'. The founding members include Chemicals and Petrochemicals Manufacturers Association and PlastIndia Foundation, and it is fully funded by the plastic industry (ICPE,

The Ranganath Mishra Committee set up subsequently in June 2001 to look at plastic waste, comprised several government officials and one NGO, the Indian Centre for Plastics in the Environment (ICPE) [7]. The MoEF representative, known to be 'close' to industry, barred the participation of other stakeholders [7]. In ICPE's view the problem is not plastics *per se* but the way that they are disposed of, so the solution is to place them in dustbins after use rather than throwing them on the streets [7]. This was the same conclusion reached by the Task Force. The plastic controversy gets more complicated by developed countries often using developing countries for dumping their wastes[85] and the media suggesting that levels of plastic use is an indicator of development.[86]

It is interesting to point out the striking contrast between the SC cases of MSW management and vehicular (or broadly air) pollution. In 1985, a PIL by M.C. Mehta regarding vehicular pollution in Delhi brought the issue to the attention of the SC.[87] In 1998, utilising the provisions of the EPA (1986), the Environment Pollution (Prevention and Control) Authority (also known as the Bhure Lal Committee) for the National Capital Region was constituted under the MoEF. Armed with powers to decide on the issue of environmental pollution, specifically vehicular and noise, it is directly responsible to the SC. In 2002, it successfully introduced CNG in the city to replace petrol despite political/industry resistance.[88] This was possible for three main reasons. Firstly, the strong, clear and consistent intervention of the SC in the issue of air pollution. This was evidenced when the SC ordered the constitution of the Committee. In addition, the SC ensured that it was kept abreast of any developments. The court was extremely aggressive [8]. The same SC has (as explained earlier) also acted in relation to MSW, with less effectiveness. Second, the composition of the Committee provided minimum political intervention (with hardly any politician represented), which was unable to influence the overall consensus that favoured the CNG (i.e. bypassing the usual core actors). Third, there was an immensely dynamic and constant intervention from civil society, as represented by the NGOs and the media. The CSE lobbied the

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www.icpenviro.org/aboutus.asp accessed 10 July 2003). See Annex 5b for a selection of answers from its 'Frequently Asked Questions' section on its website.

[85] *The New Indian Express* (2002) Denmark Minister apologises for illegal plastic waste imports (12 February), (www.ban.org/ban_news/denmark_minister.html accessed 26 October 2003).

[86] *The Financial Express* 'India to turn third largest polymer consumer by 2010' (26 May 2003). The article states that the per capita consumption of plastics in India has *improved* to 4 kgs in 2002 from 0.5 kg a decade ago but is *still lagging behind* the world's average of 20kgs (emphasis added).

[87] Writ Petition (Civil) No.13029/1985 (*M.C.Mehta* v. *Union of India and Others*). See CPCB *Annual Report 2001-02* (www.cpcb.nic.in/ar2002/ar1-2ch11.htm accessed 20 June 2004).

[88] See Jain (2001), Rajalakshmi (2002) for a good account of the chronology of interim orders.

SC with regular reports and briefing papers highlighting the advantages of CNG.[89] However, the Bhure Lal Committee's focus is currently restricted to vehicular pollution.

In sum, MSW policy results more from the informal networks that exist behind the scenes than from a consultative process that deliberates comprehensively on possible alternatives to effectively deal with MSW in Delhi. The waste hierarchy has not been practised as an alternative policy framework, with the state responding piecemeal and *ad hoc* to the exigencies of the situation. With a strong and entrenched liaison between the government and industry, and influence of the industry lobby on the judiciary, change is restricted. Policy alternatives considered are hence not the most appropriate alternatives [19c]. The sheer complexity of organisations involved in MSW management, coupled with the highly insulated core and the degree of embeddedness, deters the development of higher institutional capacity to deliver environmental sustainability in MSW management.

Conclusion

Analysis of the policy networks shows that the core policy community influences not only the direction of policy but also the responsiveness of the state to address MSW issues, thereby conditioning the capacity for effective policy reform. The embeddedness of the interactions reflects the lack of commitment and efficacy of the state in both policy formulation and implementation, in the context of organisational constraints of inefficient administrative structure, official indifference, lack of inter-departmental co-ordination, lack of accountability and financial resources, lack of environmental expertise and institutional graft. There is recognition and awareness in government circles of the lacunae, legal or otherwise, in the 'system' *and* the little that is done to actually address them. In sum, India's [environmental] policies practically guarantee mismanagement (*The Economist*, 24 August 2002). In MSW policy this constitution of the policy community (and its constituent core) questions Agrawal's and Yokozuka's assertion that participative democracy and its mass demonstrations could resolve the problems of environmental degradation. There is insufficient capacity for the environment for two reasons:

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[89] This position contrasted with that of TERI. In February 2000, TERI is reported to have espoused the view that the conversion from diesel to CNG could *inter alia* result in global warming [....] By July 2000, the attack on CNG was voiced by Lt. Governor Mr. Vijai Kapoor and the Transport Minister, Mr. Parvez Hashmi (Dhavan 2001). See also Jain (2001) and *Tribune News Service* (2002) SC orders relook at CNG hike (www.tribuneindia.com/2002/20020510/ncr1.htm accessed 27 August 2003).

lack of strong and organised proponents and, most importantly, the equally constraining and deeply embedded configuration (stipulated and un-stipulated relations) of core actors involved.

Chapter 6

Between illegal dumps and dirty trade: transposing EU legislation in the UK

6.1 National organisational context

6.2 Principles and nature of environmental policy

6.3 London: general introduction

Without urgent action England's municipal waste will double in volume by 2020, and will cost £3.2 billion per year to dispose of: twice as much in real terms as we spend now. We produce more waste per head than in many other EU nations and recycle less.

Strategy Unit *Waste Not, Want Not* (2002)

The United Kingdom (UK) stands at the lower end of sustainability in managing its waste, in contrast to other Western European countries.[1] For instance, although the option of recycling was introduced in the early 1980s, the UK remains at the lowest level in Europe.[2] It is now faced with a 3% annual growth of household waste coupled with increasing costs of waste management. Often, there is evidence of illegal dumping and dirty trade. An article in *The Guardian* (25 April 2000) by Hencke and Parry revealed a huge scale of illegal dumping and landfill tax evasion across the country, with waste being dumped in golf courses, rifle ranges, cricket and football pitches, riding stables and go-kart circuits. They claimed that there were 32,000 unchecked dumping sites in England and Wales in 2000, compared with the previous figure of 14,000. This is despite the official recognition that landfill is not a viable sustainable waste disposal option.[3] Furthermore, according to the Environment Agency (EA) 56% of the 2,264 landfill sites assessed in England and Wales are failing to comply with licence conditions.[4] On the other hand, in March

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[1] Jahn (1998) computed an index of environmental performance based on pollution levels (air, water, soil and solid waste) of the 18 OECD countries in 1990, and the UK ranked 14th. See also DEFRA (www.defra.gov.uk/environment/statistics/waste/kf/wrkf08.htm accessed 10 June 2004) which shows the UK trailing in third last after Greece and Portugal in recycling rates. Though reference is made to the UK, the research is specifically interested in England, unless stated otherwise.

[2] See Oppenheimer (2000), Office of the Deputy Prime Minister (ODPM) (2004a), Hencke and Parry (2000).

[3] See for instance, *Making Waste Work* (1995).

[4] Quoted in FoE Press release 'Most landfill sites failing landfill standards' (www.foe.co.uk/resource/press_releases/20021220151429.html accessed 20 June 2003). Further that 14% were nowhere near compliance. Also, 'the controversial practice of co-disposal (landfilling of hazardous

2005, more than 1,000 tonnes of contaminated household refuse, disguised as waste paper, on its way from the UK to China, was intercepted at the port of Rotterdam by Dutch environment ministry officials (Vidal, 2005).[5] The Transfrontier Shipment of Waste Regulation (1994) in the UK, which implements the EU Regulation (EEC No. 259/93) on the supervision of shipments within, into and out of the European Community was clearly disregarded in this instance.[6] The UK, therefore, has a lot to accomplish and fast.

In this case study of London, it is necessary to look at the national context because decisions impacting on the city and its constituent boroughs are often made at the national level. This chapter explores the national organisational context of MSW policy, providing a brief overview of the main organisations (governmental, NGOs and a few companies) identified by the interviewees.[7] It also sieves out the main principles on which the policy is based and looks at the nature of policy-making and implementation.[8] It is important to clarify that the next chapter explores the impact of the organisations on MSW policy-making and implementation process.

6.1 National organisational context

The organisational setting of environmental policy in the UK has seen numerous changes over the years.[9] Most recently, the Labour government reformed the organisational set up to create the

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waste with other waste) continues though it is supposed to be phased out by 2004 to comply with the EU Landfill Directive' (OECD, 2002, p. 5).
[5] According to Vidal (2004) 23,000 tonnes of discarded IT and other electronic equipment was shipped out illegally, mostly to China, West Africa, Pakistan and India, by companies trying to avoid paying increasingly high disposal costs in the UK. Furthermore, he states that exports of e-waste are likely to rise in the next few years as European laws covering electronic goods insist that scrap is recycled and barred from being burned in incinerators.
[6] The Council Regulation (259/93/EEC) on the supervision and control of shipments of waste within, into and out of the European Community establishes a system of supervision and control of all movements of waste. Also see Council Directives 84/631 and 85/469/EEC. At the international level, the United Nations Environment Programme's Basel Convention on the control of trans-boundary movements of hazardous waste was adopted in 1989 in response to concerns about hazardous wastes from developed countries being dumped in developing countries (www.basel.int accessed 10 June 2003).
[7] As explained in Chapter Three, the snowballing method was adopted for the interviews. Annex 6a lists a few organisations not mentioned here but are of varying degrees of relevance to environmental policy in general in the UK.
[8] Some principles applicable to industrial waste are included, in summary form, because of an overlap with MSW policy.
[9] The Environment Ministry was created as part of Edward Heath's (the Conservative PM, 1970-74) drive to create 'super-ministries' (Vogel, 1986; Rhodes, 2000) with the goal to promote central control (McCormick 1991). The Labour government (in 1974) took a different view, and made transport the responsibility of another department while the Department of Environment covered matters of

Department of Environment, Food and Rural Affairs (DEFRA) as 'the government department which deals with food, air, land, water and people'.[10] However, apart from this Department, there are other governmental organisations/agencies with responsibility, regulatory or otherwise, that influence environmental policy.

Parliament and governmental organisations

Despite the existence of parliamentary groups, such as the Associate Parliamentary Sustainable Waste Group,[11] the UK parliament plays a relatively small role in the shaping of British environmental policy (Vogel, 1986).[12] The UK legislature also assembles standing and *ad hoc* commissions and committees, for example, the House of Commons Select Committee on the Environment, the Environmental Audit Committee and the Royal Commission on Environmental Pollution. These 'provide for scrutiny and supervision of the activities of the executive' (Rydin, 2003, p.91) though in the area of waste their direct impact has hardly been perceived. There is evidence however to suggest that some 'green' members cutting across parties have raised environmental concerns. For instance, the Municipal Waste Recycling Act (2003) was tabled by the Labour MP Joan Ruddock as a Private Member's Bill.[13] Thus, parliament plays a scrutinising role though there can also be some sporadic environmental initiatives.

At the top tier, apart from 10 Downing Street itself, the Cabinet Office (CO) is entrusted with responsibility for supporting the government's delivery and reform programme by facilitating agreements between the stakeholders, in this instance the different departments and ministers with an interest in MSW policy. The two Secretariats - Economic and Domestic Affairs, and the European Union (EU) - are responsible for achieving internal coordination. They also help determine the government's approach and contribution to EU policy-making processes. The Strategy Unit (SU), a part of the CO, was mentioned in various interviews on account of its report *Waste Not, Want Not* in 2002. Formed in 2002, the SU brought together the functions of the Performance and Innovation Unit, the Prime Minister's (PM) Forward Strategy Unit, and parts of the Centre for Management and Policy Studies. The Unit aims to improve the government's

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environmental pollution and functions such as land use planning, building and nature conservation apart from management of government property. However, the Department focused more on planning issues than environmental protection (Dryzek *et al.*, 2002).
[10] DEFRA (www.defra.gov.uk accessed 12 January 2004).
[11] See Annex 6a.
[12] No interviewee mentioned the parliament or its committees.
[13] The circumstances behind the Act are discussed in Chapter Seven.

capacity to address strategic, cross-cutting issues and promote innovation in the development of policy and the delivery of the government's objectives.[14] It reports to the PM through the Cabinet Secretary and works on projects commissioned by the PM. It produces two kinds of evidence-based reports: firstly, *to* the government, which necessitates the concerned department to respond within 2-3 months [1].[15] For example, the report *Waste Not, Want Not* was *to* DEFRA. Secondly, the report (usually White Papers) can be *of* the government, which can be regarded as a policy document of the government on a particular issue [1].

The second tier comprises the departments of the central government. In 1997, the Departments of Environment (1970-97) and Transport (1976-97) were merged to create the Department of Environment, Transport and Regions (DETR) (1997-2001). The DETR aimed to protect and improve the environment and to make environmental considerations an essential component of other policies, at home and internationally. In 2001, however, DETR was split into the Department for Transport, Local Government and the Regions (DTLR) and DEFRA (2001-present). DEFRA took over some of the functions of the DETR but with a more explicitly stated aim of 'achieving sustainable development' (DEFRA, 2002a, p.1).[16] DEFRA's Prospectus *Working for the Essentials of Life* (March 2002), the result of widespread consultation with stakeholders, the public and its staff, serves as a guideline for DEFRA's activities.[17] DEFRA drafted the government's *Waste Strategy* (2000), which aimed to achieve the goal of sustainable waste management. The department also plays the lead role in representing the UK within Europe, international bodies such as the United Nations (UN), tracking the UK's progress towards sustainable development and chairing the Cabinet Sub-Committee of Green Ministers, which considers the impacts of all government policies on sustainable development.[18]

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[14] SU (www.strategyunit.gov.uk accessed 26 January 2004).

[15] The number within square brackets indicates statements from interviewees. See index of interviews in Annex 3b.

[16] The formation of the new department was largely seen as an opportunity to adopt a fresh approach to the future by essentially taking up the challenge of achieving sustainable development and bringing farming, the food chain, rural affairs and the environment together in a sustainable partnership (Margaret Beckett in foreword to *Foundations for Our Future*, 2002). The department has 12,560 permanent and 1,260 casual posts (Office for National Statistics, 2002).

[17] It identifies 22 indicators to measure progress in seven cross-cutting themes, along with a system for regular review and reporting. Under the theme of natural resources and waste, it lists 'household waste and recycling in England' as one indicator of progress.

[18] Various other advisory bodies support DEFRA: Sustainable Development Commission, the Sustainable Development Education Panel, the Trade Union Sustainable Development Advisory Committee and the Advisory Committee on Consumer Products and the Environment.

The EA is one of many executive non-departmental public bodies sponsored by and accountable to DEFRA. The EA was created to follow up on international commitments on biodiversity and climate change agreed at the 1992 Earth Summit (Rydin, 2003).[19] It reflected a strongly felt need to remove environmental regulation from the direct sphere of any one government department, thereby protecting it from political pressures and preventing conflicts of interest (Gray, 1995).[20] It brought together the responsibilities of Her Majesty's Inspectorate of Pollution and the National Rivers Authority (ODPM, 1997). In 1996, the responsibilities of the London Waste Regulation Authority were also passed onto the EA.[21]

Waste Strategy (2000) identifies the primary task of the EA as ensuring that waste management activities do not cause environmental pollution or harm human health. The Agency does this through the Waste Management Licensing Regulations (for issuing licenses for landfill sites, incineration plants, etc.) and other regulations for which it is responsible (including the Pollution Prevention and Control Regulations[22]) and strives to implement these in a fair, consistent and transparent way.[23] It also regulates the treatment, storage and disposal of 'controlled' waste under the Environmental Protection Act (Controlled Waste) Regulations 1992; 'controlled' waste includes industrial, commercial and household waste.[24] The EA provides relevant information to assist local Waste Collection Authorities (in their recycling plans and collection arrangements for household waste), Waste Disposal Authorities (in determining their contracts with an objective assessment of the environmental costs and benefits of various options for dealing with household waste) and local planning authorities (with their development plans). The Agency's National Waste Classification Scheme enables quick and accurate identification of waste types permitted

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[19] The Environment Act (1995) which amended the EPA (1990) created the EA.
[20] According to Gray, the proposal for an EA was informed by the desire to integrate, centralise, formalise, professionalise and open up the process of environmental regulation in Britain.
[21] The failure of most of the Waste Regulation Authorities to complete the waste disposal plans required by the directives of the Control of Pollution Act (1974) until the late 1980s sowed the seeds for their transfer to the EA (ODPM).
[22] Pollution Prevention and Control is the UK regime created to implement EC Directive (96/61). The Pollution Prevention and Control Act 1999 replaces Part I of the EPA 1990, and will eventually replace the existing Integrated Pollution Control and Local Air Pollution Control regimes, providing a single regulatory framework: Integrated Pollution Prevention and Control. (www.defra.gov.uk/environment/ppc/ppc.htm accessed 2 March 2004).
[23] See Chapter Four, *Waste Strategy*. Also see Gouldson (2002, thesis) and, Gouldson and Murphy (1998).
[24] Excludes 'non-controlled' wastes from agriculture, mines and quarries, radioactive waste and explosives. (www.environment-agency.gov.uk/ accessed 2 March 2004). Controlled waste is waste which must be managed and disposed in line with waste management and other waste related regulations and includes municipal, commercial and industrial waste (*Waste Strategy*, 2000). See also the Control of Pollution Act (1974), EPA (1990), Waste Management Licensing Regulations (1994) and the Controlled Waste Regulations (1992).

for treatment and/or disposal at particular sites, thus removing the uncertainties arising from different definitions used by various organisations. The EA produces Strategic Waste Management Assessments for the ten planning regions, including London, to assist stakeholders to develop integrated sustainable waste management policies.[25] Furthermore, the EA is the competent regulatory authority for England and Wales for international movements of waste, i.e. anyone shipping waste into or out of the UK must apply to the EA for a certificate to show they have a financial guarantee or equivalent insurance to cover the cost of shipment.[26]

The nature of waste, both in creation and consequence, necessitates links with planning policy. Since the 1990s, various developments in the UK have moved waste management issues and the allocation of sites for waste facilities from being a relatively new discourse in land use planning system to one at the forefront of national and local planning policy agendas (Davoudi, 2000; 2001b). However, to prevent any duplication of control between planning and environmental protection, the planning system controls and regulates the use of land, while the environmental protection system prevents or minimises the effects of pollution on the environment (DTLR, 2002b). The EA, as mentioned earlier, focuses on the latter by issuing waste management licenses and enforcement of legislation. The Office of the Deputy Prime Minister (ODPM), on the other hand, is responsible for the planning side of waste management.[27] The DTLR had been split in 2002 to form the Department for Transport (DfT) and the rather strangely named (Rydin, 2003) department called Office of the Deputy Prime Minister, with responsibility for planning, local government and the regions.

In recognition of the role of planning in introducing sustainability in waste management, the ODPM (or DTLR earlier) has correspondingly increased focused on overall planning policy guidance on waste. The Planning Policy Guidance (PPG12) provides guidance on identifying sites for vaste disposal and, coupled with PPG10, ensures that there is an adequate planning framework for the provision of facilities by the waste management industry.[28] The planning

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[25] The assessments present detailed information about the types, quantities and movements of waste produced and how it is being managed in each region.
[26] EA (www.environment-agency.gov.uk/subjects/waste/1030716/232044/?lang=_e accessed 10 December 2004).
[27] See Davoudi (2001a) for a good review of the evolution of planning in Britain.
[28] The Planning Policy Statement 10 (PPS10): *Planning for Sustainable Waste Management* published on 21 July 2005, replaces the PPG10 (Planning and Waste Management, 1999). (www.odpm.gov.uk/stellent/groups/odpm_planning/documents/page/odpm_plan_039214.hcsp accessed 25 July 2005). PPG10 brought PPG23 on planning for waste management up-to-date with developments in waste policy and the creation of the EA. The earlier PPG23 (1994) gave guidance on the relevance of

system, therefore, helps meet the commitments of the *Waste Strategy* in particular by promoting the provision of facilities required to move waste management up the waste hierarchy (DTLR, 2002). The planning system centred in the ODPM aims to consider the full range of environmental costs and benefits associated with a waste facility, while ensuring sufficient flexibility to recognise and allow for differences between individual schemes.[29] All local planning authorities, when considering new development, should ensure that it contributes to the objectives of the national waste strategy.[30] For instance, the location of 'bring banks' and Material Recycling Facilities (MRFs) may affect waste minimisation.[31]

The other main department relevant to waste management is the Department of Trade and Industry (DTI). Created in 1970 to replace the Board of Trade, it aims to ensure 'prosperity for all by working to create the best environment for business success in the UK'.[32] 'The DTI represents the industry and performs two roles: sponsorship of the waste management industry and the more horizontal role of considering waste strategy for waste producing industries, which can appear conflictual' [5]. It also champions UK business at home and abroad. The DTI has initiated various schemes/units to promote and support the UK environmental industry, for instance the Environmental Industries Unit[33] jointly with DEFRA and ENVIROWISE.[34] However, the

pollution controls to the exercise of planning functions in England setting out policies in respect of waste management. (www.odpm.gov.uk/stellent/groups/odpm_planning/documents/page/odpm_plan_606925-01.hcsp accessed 20 December 2004). The PPG12 is currently being revised by the new Planning Policy Statement 10: planning for sustainable waste management.
[29] See Davoudi (2001a) and Mittler (2001) for an analysis of the implications and problems/hurdles of the sustainable development paradigm for the planning profession.
[30] Further, there are four important considerations: *sustainability appraisal* framework to deliver more sustainable patterns of waste management making it a genuine aid to the planning process; *Environmental Impact Assessment* of a development scheme; *consultation* to encourage local participation in preparing plans to secure a degree of consensus, especially given the controversial nature of waste management proposals; and *monitoring and review* mechanisms that the Waste Planning Authorities (WPAs) should ensure are in place, to monitor the effectiveness of policies in waste development plans (DTLR, 2002).
[31] MRFs are infrastructure facilities to sort recyclables from the waste collected. Bring banks or sites are recycling facilities where householders can drop off the recyclables.
[32] DTI (www.dti.gov.uk/about_dti.html accessed 5 March 2004). One of the main objectives of the new Department was to help British firms prepare for the competition arising from Britain's entry into the European Economic Community.
[33] It replaced the Joint Environmental Markets Unit in April 2004 (www.dti.gov.uk/sectors_environment.html accessed 20 December 2004).
[34] Formerly the Environmental Technology Best Practice Programme, it was re-launched on 1st November 2000 as Envirowise. The main themes are the promotion of waste minimisation and the adoption of cost-effective cleaner technology by offering free, independent advice to companies in the UK on practical ways to become more competitive whilst improving their environmental performance by reducing waste at source (www.envirowise.gov.uk/envirowisev3.nsf accessed 2 March 2004). Its design is based on the WasteWise programme of the Environment Protection Agency of the US (AEA Technology, 1999).

interaction with DEFRA is not restricted to these collaborations alone. The DTI's relation to industry at large also influences UK's MSW policy, as explained in the next chapter.

Controlling the purse strings, the Treasury is responsible for formulating and implementing the government's financial and economic policy, with the aim of raising the rate of sustainable growth and achieving rising prosperity and a better quality of life with economic and employment opportunities for all.[35] The tenth objective listed is to protect and improve the environment by using instruments that will deliver efficient and sustainable outcomes through evidence-based policies. However:

> Delivering better public services does not just depend on how much money the Government spends, but also on how well it spends it. Therefore the 1998 Comprehensive Spending Review introduced Public Service Agreements (PSAs). Each major government department was given its own PSA setting out clear targets for achievements in terms of public service improvements.[36]

The PSAs form an integral part of the spending plans set out in Spending Reviews.[37] DEFRA's PSA Targets for 2001-04 include enabling 17% of household waste to be recycled or composted by 2004 (Target 3).[38] Thus, the Treasury decides the spending priorities of the department.

Apart from the departments mentioned here, the government often supports (financially or otherwise) specific groups and initiatives, like the National Resource and Waste Forum (NRWF). The NRWF is a 'unique forum for action where government bodies have seats alongside representatives of many other organisations and people across the public, private and NGO sectors involved in delivering sustainable waste management'.[39] However, it is also *endorsed* by DEFRA and DTI [9]. According to [9], the original aim of the NWRF was to increase public confidence in waste management, while the new role and remit is creating space for people to come together, and work on waste prevention. The Waste and Resources Action Programme

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[35] HM Treasury (www.hm-treasury.gov.uk/about/about_index.cfm accessed 12 December 2003).
[36] Treasury, *Public expenditure planning and control in the UK – a brief introduction*, www.hm-treasury.gov.uk/Spending_Review/spend_plancontrol.cfm accessed 20 August 2003.
[37] Started in 1998, the spending review was a Labour innovation designed to draw up public spending priorities on a three-year basis (Treasury, *Public expenditure planning and control in the UK – a brief introducton* (www.hm-treasury.gov.uk/Spending_Review/spend_plancontrol.cfm accessed 20 August 2003).
[38] DEFRA (www.defra.gov.uk/corporate/busplan/01psa.htm accessed 9 August 2004). See also DEFRA (www.defra.gov.uk/corporate/busplan/psa2002.htm for PSA 2003-06 & www.defra.gov.uk/corporate/busplan/psa2004.htm for PSA 2005-08, accessed 9 August 2004).
[39] NRWF (www.nrwf.org.uk/ accessed 12 December 2004). It was initially called Public Confidence Working Group as an industry-led forum [5].

(WRAP), set up in 2001 as part of the *Waste Strategy* (2000), aims to deliver more recycling, stimulate markets for recyclable materials, bring down barriers to using recyclables in products, and promote an integrated approach to resource use. The London Capital Challenge Programme sponsored the London Waste Recycling Programme (1997-2000) which was the first city-wide programme in the UK inviting bids from boroughs for developing necessary recycling infrastructure, amongst other objectives.[40] Also, DEFRA's Waste Minimisation and Recycling Fund for England finances the London Recycling Fund (2002-06).[41]

Non-Governmental Organisations

The diverse NGOs involved in waste management in the UK are difficult to survey here. Only the most prominent, as mentioned in the interviews, are included.[42] *Waste Watch*, funded by central government, charitable trusts, the corporate sector, individuals, local authorities and the national lottery, was established as a charity in 1987 to promote waste reduction, re-use and recycling. It is the leading national organisation in this field and works with community organisations, local and national government and businesses to raise awareness and effect change leading towards sustainability in waste. 'It is unusual as an NGO, working on policy development by attending meetings that government holds and also through delivery (communication programmes involving local authorities)' [4]. It also supports programmes like Schools Waste Action Clubs (SWAC), Waste Alert Clubs (aimed at waste minimisation), and the *National Waste Awareness Initiative* (NWAI).

Friends of the Earth (FoE) armed with radical green manifesto pledges, urges the government to show that the environment is at the heart of government. FoE is one of the UK's largest and most effective environmental groups, and has worked on waste issues for over 30 years, along with 200 local groups across the country.[43] In contrast to the level of membership and strategies of the FoE, *Green Alliance* (GA), with just five hundred members but with status and contacts, has acquired access to Westminster and Whitehall. According to [7], its 'mission is to target civil servants,

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[40] It grew out of the work of the London Pride Waste Action Programme launched in 1996, and had limited success in meeting all the objectives (ALG, 2000).
[41] The Waste Minimisation and Recycling Fund, created after the Landfill Tax Credit Scheme was revised, is supported by London Waste Action and WRAP.
[42] For instance, the Furniture Recycling Network and Women's Environmental Network were not mentioned in the interviews (see Annex 6a).
[43] FoE's written evidence to the House of Commons Select Committee (November 2003) (www.publications.parliament.uk/pa/cm200203/cmselect/cmenvfru/uc1336/1336m01.htm accessed 18 January 2004).

MPs and select committees, business and others NGOs. So [we] target decision makers and mainly informally coordinate other NGO activities to orient them towards political world'. It often supplies parliamentary briefings and inspires parliamentary questions.[44]

Initially funded by the London Borough of Ealing to provide community transport service, *Ealing Community Transport* (ECT) Recycling has become one of London's biggest kerbside recyclers, expanding further into other parts of Britain, and is committed to social responsibility, environmental sustainability and economic viability [24]. It provides recycling service to Barnet, one of the Boroughs studied in this research.[45] Due to the economies of scale gained by contrast to other local groups or charities, the ECT has successfully challenged the big waste disposal companies (Biffa, United Waste and Onyx) in winning local authority contracts.[46]

The Environment Council (TEC) is 'different to most environmental NGOs, it neither campaigns nor aims for conservation, aiming [instead] to create awareness of issues' [6], and brings together government, business, the environmental sector and communities to find sustainable environmental solutions that work.[47] According to [6], 'our core business is to act as convenor to bring together parties for dialogue'. It also aims to find practical solutions and occasionally produces reports, which are submitted to the government for consideration.[48]

Local community efforts, like the *Guildford Anti-Incinerator Network* (GAIN), were mentioned by two interviewees. GAIN advocates a moratorium on incineration in Surrey, kerbside recycling and zero waste.[49] In September 2000, residents were made aware of a planning application to build an incinerator in Guildford [25], which prompted community action against the proposal. Similarly, the local FoE of Lewisham organised an anti-incineration campaign against the South East London Combined Heat and Power (SELCHP) plant when it was first proposed [26].

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[44] It is credited with 'initiating a meeting in 1987 in the PM's Office to address problems between agriculture and the environment' (Weale, 1997, p. 97).
[45] Apart from Brent, Hackney, Tower Hamlets, Richmond Upon Thames, Ealing, Hounslow, Waltham Forest.
[46] The company maintains that its not-for-profit status allows it to deliver a better and more cost-effective service to local authorities while paying its employees a higher-than-average pay which ensures better quality (McCurry, 2002).
[47] TEC (www.the-environment-council.org.uk/ accessed 10 October 2003).
[48] For example, *Enabling Sustainable Waste Management*, TEC and RMC Fund, London.
[49] GAIN (www.no-incinerator.org.uk/ accessed 17 December 2004).

Waste industry

Individual waste companies seeking contracts for waste collection/disposal from local councils are another relevant actor in this policy. More than 3,000 companies now control 66% of the UK waste market [13a], some of them with non-UK ownership like Sita, which is a French company. These companies can be divided into three groups [23]. The first group provides incineration, like Sita and Onyx. The second provides landfill, for instance, Terra Firma and Biffa. The final group provides biological methods to dispose of waste. Some combine these services, for instance, Biffa, is one of the UK's largest integrated waste management businesses, providing collection, landfill and special waste services to local authorities and industrial/commercial clients.[50] 'It also promotes biological methods and recycling as waste disposal solutions, and in that sense is different to other waste companies' [23]. Also Shanks, operating in the UK, Belgium and the Netherlands, offers an innovative range of waste management solutions within its various collection, transport, recycling, treatment and disposal services [18].

The Environmental Services Association (ESA) is an umbrella organisation representing the UK's waste industry. It works with government, parliament and regulators to bring about a sustainable system of waste management for the UK.[51] The ESA has 150 members, both big companies like Biffa, and smaller members specialising in one waste stream or in components, like batteries [13].

European Union

The recently expanded EU comprises 25 member states (EU-25) and covers a large part of the continent of Europe.[52] Sustainable development is a top priority for the EU, which takes

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[50] Biffa (www.biffa.co.uk/ accessed 9 May 2004).

[51] ESA (www.esauk.org accessed 10 January 2004). Previously known as the National Association of Waste Disposal Contractors, it established the ESA Research Trust Ltd. with the majority of the Board (9) consisting of landfill operators (4) plus the ESA representative, in order to take advantage of the Landfill Tax Credit Scheme (Hencke and Parry, 2000).

[52] With a further two countries hoping to join in 2007, the enlarged EU of 27 countries will have a population of nearly half a billion (Europa, http://europa.eu.int/abc/keyfigures/index_en.htm accessed 16 July 2004). Information presented here is mainly from the website. See Europa (http://europa.eu.int/abc/panorama/howorganised/index_en.htm#commission) for details of how the EU is organised: in particular, the European Commission (EC) manages the day-to-day business of implementing EU policies and spending EU funds. It is independent of national governments, and drafts proposals for new European laws, which it presents to the European Parliament and the Council. Also, the EC can act against rule-breakers, taking them to the Court of Justice if necessary.

environmental concerns into account in all its policy-making. The EU Sustainable Development Strategy, adopted in 2001, aims to reconcile economic development, social cohesion and protection of the environment.[53] Ten themes (comprising a hierarchical framework of indicators) representing the policy priorities of the Strategy include economic development, poverty and social exclusion, ageing society, public health, climate change and energy, production and consumption patterns, management of natural resources, transport, good governance and finally global partnership. Although various barriers to integration of environment and development objectives remain, significant efforts, at the behest of the EU, are being undertaken by national governments to overcome them. The sustainable development processes in the UK are hastened and aided by the pressure from the EU.

The 'paradigm of sustainable development allows the EU as a whole to commit to the reconciliation of economic and environmental interests, while simultaneously allowing member-states discretion with respect to their choice of policy options to put this commitment to practice' (Baker et al., 1997, p. 29).[54] The aims of the EU's Fifth Environmental Action Programme to integrate environmental considerations into sectoral policy, namely tourism, industry, energy, transport and agriculture (Baker et al.) are commendable. According to Joaquin Almunia, Commissioner for Economic and Monetary Affairs, the EU is firmly committed to sustainable development, based on balanced economic growth and price stability, a competitive social market economy, a top level of education and social progress, and an advanced protection and improvement of the environment.[55] However, it is 'clear that EU development cannot yet be considered sustainable or even heading towards sustainability. Very few targets set in the EU sustainable development strategy in 2001 are within reach' (p. 212).

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[53] Eurostat -
http://epp.eurostat.cec.eu.int/portal/page?_pageid=1998,47433161,1998_47437045&_dad=portal&_schema=PORTAL (accessed 16 July 2004). According to Baker et al. (1997), it interprets sustainable development as promoting sustainable consumption and sustainable production.
[54] For Baker et al. (1997, p. 26) at least in the liberal democracies characteristic of EU member-states, the outcome of participation is usually a policy or set of policies representing a compromise between competing interests. Though the state may seek to prevent loss of policy-making powers endangered by the EU (see Liberatore, 1997).
[55] In foreword to European Commission (2005) report measuring progress towards a more sustainable Europe. Municipal waste collected and treatment is one indicator under the theme of production and consumption of the Sustainable Development Strategy.

The EU faces huge pressures (often divergent) and bargaining in their day-to-day strife, to arrive at decisions.[56] The EU is also beset with the larger question of supranational institutions undermining national sovereignty.[57] This is further complicated by differing levels of environmental accomplishments and standards amongst the members. Nevertheless, it is a resourceful international organisation with powers to sanction any defaulters. The environment sector alone represents over a third of all infringement cases concerning instances of non-compliance with Community law investigated by the Commission (Commission of the European Communities, 2003). Between 1998 and 2003, 18.3% of the infringement cases brought in front of the Court of Justice of the European Communities related to the environment (EC, 2005).

Municipal waste (generated, landfilled and incinerated) is a structural indicator of EU policy on Environment.[58] Within the EU, the UK is hardly a forerunner on environmental issues and is regarded as the 'dirty man' of Europe.[59] Table 6.1 compares the municipal waste generated, landfilled and incinerated across the EU with that of the UK.

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[56] In Euro-policy game, uncertainty of outcomes is high and rarely does one player or group of players control the game (Richardson, 2000). See also Baker *et al.* (1997), Lowe and Ward (1998) and ENDS Environment Daily *NGOs demand bigger role in EU standardisation* (8 June 2000). See Lenschow (2002) for a good account of greening the EU policies including the bottlenecks and opportunities to practice environmental policy integration.

[57] The Landfill Directive had a longer than average gestation period, taking many years in negotiations because it was 'so hard to agree on' in view of the different waste disposal practices in member countries [16]. See also Golub (1996a) who regards the EU's Packaging Directive as a good example that throws open the questions of sovereignty surrounding European integration. For a good account of instruments available to the states, see Gunningham (1998).

[58] See Eurostat -
(http://epp.eurostat.cec.eu.int/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&scr een=welcomeref&open=/&product=STRIND_ENVIRO&depth=2) for comparative figures of EU member states. The amount of municipal waste generated consists of waste collected by or on behalf of municipal authorities and disposed of through the waste management system, the bulk of which is from households, though similar wastes from sources such as commerce, offices and public institutions are included (wastes from agriculture and industries are not included). Landfill is defined as the depositing of waste into or onto land, including specially engineered landfill and temporary storage of over one year on permanent sites. The definition covers landfill in internal sites (i.e. where a generator of waste is carrying out its own waste disposal at the place of generation) and in external sites. Incineration means thermal treatment of waste in an incineration plant as defined in Article 3(4) or a co-incineration plant as defined in Art. 3(5) of the Directive on the incineration of waste (Directive 2000/76/EC of 4 December 2000).

[59] Mainly pertains to the 1980s. Jordan (2002, p. 43) states that the 'Dirty Man' tag was really just a crude label for a host of organisational, political and financial problems that afflicted UK environmental policy in the 1970s and 1980s'.

Table 6.1: Comparison of municipal waste generated, landfilled and incinerated across EU and the UK

	1995	1997	1999	2001	2003
Municipal waste generated					
EU	461	490	517	529	531
UK	499	533	570	592	593
Municipal waste landfilled					
EU	295	293	288	278	255
UK	414 (e)	461	469	474	440
Municipal waste incinerated					
EU	69	74	81	87	91
UK	45	30	40	43	45

Source: Eurostat.[60] EU includes 25 countries. (e) = estimated value.

According to the EC (2005), the volume of landfilled waste has been declining particularly between 2000 and 2003, with an average annual decrease of 3% in the EU-25, but which has been counterbalanced by an annual increase of 3.1% of incineration. The same publication also states that landfill still accounts for more than 70% of disposal methods, and that further progress will need to be made to achieve the target of a reduction of 20% (landfilled and incinerated) between 2000 and 2010. 'Despite the considerable progress which has been made, overall waste volumes are growing and the absolute amount of waste going into landfill is not decreasing' (Commission of the European Communities, 2005, p.5). Further, there are wide discrepancies between Member States, 'ranging from those which recycle least (90% landfill, 10% recycling and energy recovery) to those which are more environmentally friendly (10% landfill, 25% energy recovery and 65% recycling)' (European Commission of the Communities, p. 4). For instance, Denmark, seen by many as one of Europe's most environmentally conscience nations, burns around 53% of its municipal waste, while Ireland and Greece do not incinerate any of their waste.[61] Thus, degrees of compliance and successful transposition of EU Directives also vary amongst the members.

Starting in 1975, with the Waste Framework Directive (75/442/EEC), the EU has introduced various principles and practices of managing waste amongst the member states. Only the main Environmental Action Programmes are discussed here. In 1986, the EU adopted the Fourth Environmental Action Plan, which highlighted the three themes of waste reduction, recycling and

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[60] 'The EU figures should be treated with caution as they mask discrepancies at national level' (EC, 2005, p. 114)
[61] BBC 'Q&A – Waste Incineration' (http://news.bbc.co.uk/1/hi/sci/tech/4622484.stm accessed 22 January 2006).

re-use, and the safe disposal of unavoidable waste. A more determined concentration on waste soon followed. The European Commission's *Waste Management Strategy*, adopted in 1989, forms the cornerstone of EU waste policy. It highlights the proximity and self-sufficiency principles, producer responsibility/'polluter pays' and the waste hierarchy (including waste prevention as explained in Chapter One).[62] The proximity principle aims to manage/dispose of waste as close as possible to the point of generation to eliminate the need to transport waste elsewhere, thereby reducing the environmental impact of waste. Additionally, the principle makes the producers of waste more responsible for the waste produced and may assist the local economy through employment opportunities generated by waste management facilities. The principle is closely related to 'self-sufficiency' principle, which recommends EU Member States to adopt necessary measures to make the EU self-sufficient in waste treatment and disposal. Another principle that runs through the EU Directives is that of 'subsidiarity', which implies that environmental action should be taken at the most appropriate level.

Of interest are the two main principles that underpinned the Fifth Environmental Action Programme (1993-2000): the integration of the environmental dimension in major policy areas, and that only by replacing the command-and-control approach with shared responsibility between the various actors, e.g. governments, industry and the public, could commitment to agreed measures be achieved.[63] Thus, the concept of environmental protection was broadened to include integration of environmental concerns into other EU policies, along with a gradual shift of emphasis from pollution control to pollution prevention.[64] The Sixth Environmental Action Programme (EAP), which covers the period 2001 to 2010, focuses on sustainable management of

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[62] Based on the themes identified in the over-arching Article 130R(2) of the Single European Act, 1986. 'EU policy gives preference to waste prevention (i.e. avoiding waste generation), then to recovery (re-use, recycling, composting, and incineration with energy recovery), incineration without energy recovery, and, as a last resort, landfill' (EC, 2005, p. 103).

[63] The EU defines environmental integration as making sure that environmental concerns are fully considered in the decisions and activities of other sectors (http://europa.eu.int/comm/environment/integration/integration.htm accessed 12 June 2003). 'Environmental integration [recognised in Article 6 of the EC Treaty] was given an institutional impetus in 1998 with the launch by the European Council of the so-called Cardiff process requesting different Council formations to develop strategies to this effect (Commission of the European Communities, 2004, p.2). In 2001, the European Commission (EC) adopted a Strategy on *Integrating the Environment into EC Economic and Development Cooperation*, which outlined how in the overall context of poverty reduction, EC economic and development cooperation can best assist developing country partners to respond to the environmental challenges they are facing.

[64] EU Environmental Information and Legislation Database (http://www.ncte.ie/environ/fifth.htm accessed 18 December 2005).

resources and wastes as one of four priority areas.[65] The Sixth EAP seeks to 'achieve a decoupling of resource use from economic growth, through significantly improved resource efficiency, dematerialisation of the economy and waste prevention' (EC, 2005, p. 106).[66]

Thus, the EU's waste legislation comprises three main elements: horizontal legislation (which establishes the overall framework for the management of wastes, including definitions and principles), legislation on treatment operations (such as landfill or incineration) and legislation on specific waste streams (such as waste oil or batteries).[67] The Landfill Directive (Council Directive 1999/31/EC on the landfill of waste) promotes material recycling and biological treatment by setting targets to divert biodegradable waste from landfills. The Waste Incineration Directive (2000/76/EC) aims to reduce pollution caused by emissions into the air, soil, surface and groundwater.[68] It consolidates incineration controls into single EU legislation.[69] Other examples include the Directive on Environmental Liability (Directive 2004/35/CE, to be implemented by 30 April 2007), which aims to establish a framework of environmental liability, based on the 'polluter pays' principle, to prevent and remedy environmental damage. The Directive seeks to standardise the rules on environmental liability throughout the EU. These principles find expression in UK's various MSW policy documents, notably *Waste Strategy* (2000), discussed in the following section.

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[65] *Sixth Environment Action Programme – Environment 2010: Our future, our choice* (http://europa.eu.int/scadplus/leg/en/lvb/l28027.htm accessed 16 July 2004).

[66] There are encouraging signs of a relative (but small) decoupling of total waste generated compared with GDP from 2000 to 2003, as GDP grew by 1.33 % on average during the same period (EC, 2005, p. 103). Decoupling is understood as dematerialisation, i.e., an economic growth linked to a reduced throughput of mass, and delinking economic growth from environmental pressure (EC).

[67] Waste online (www.wasteonline.org.uk/resources/InformationSheets/Legislation.htm accessed 15 December 2005).

[68] See Europa (http://europa.eu.int/scadplus/leg/en/s15002.htm accessed 12 July 2004). 'Incineration offers a potential for recovery of energy and reduction of waste volumes, it also has drawbacks including the emission of toxic gases such as dioxins, production of ashes/residues which are then usually landfilled and pollution of water from flue gas cleaning' (EC, 2005, p. 113). Both landfill and incineration release air pollutants and affect the proportion of people suffering from noise and pollution; also incineration is linked with the energy indicators as incineration requires energy but also offers a potential for energy recovery (p. 114).

[69] The Waste Incineration Directive updates the municipal waste Directives (89/429/EEC and 89/369/EEC) and parts of the Waste Oil Directive (75439/EEC), merging them with the Hazardous Waste Incineration Directive(94/67/EEC) (Environment *information* Bulletin, 122, August/September 2002).

6.2 Principles and nature of environmental policy

MSW policy functions within the context of general environmental policy-making and implementation in the UK. For instance, sustainable waste management is recognised as an important policy area and an *indicator* of sustainable development. This section provides a brief on sustainable development as interpreted in the UK context, features of environmental policy and outlines the basic principles on which MSW policy is based.[70]

Sustainable development in the UK context

Despite having published the first comprehensive White Paper on the environment, titled *This Common Inheritance*, in 1990,[71] 'the government's *Strategy for Sustainable Development* in 1994 emphasised changes only in the machinery of policy-making and the establishment of advisory committees rather than a commitment to specific policy measures' (Weale, 1997, p. 104). In 1999, *A Better Quality of Life: a strategy for sustainable development for the UK* broadly defined sustainable development to include social progress which meets the needs of everyone, effective environmental protection, efficient use of natural resources, and maintenance of high and stable levels of economic growth and employment. 'The challenge is to find a new model of development that is far more efficient in its use of natural resources. In turn, that means thinking broadly about the impacts of decisions, looking ahead and harnessing innovation' (DEFRA, 2002a, p.1). Thus, the approach focused on efficiency and innovation in largely economic terms.

In 2002, the Secretary of State, Margaret Beckett, launched DEFRA's strategy for sustainable development in *Foundations for Our Future*, setting out in more detail how it intended to make sustainable development part of the culture of government.[72] The Sustainable Development Unit within DEFRA prepares an annual report monitoring the progress government departments make on integrating sustainability into operations and policy-making. 'DEFRA works closely with partners throughout Government, academia and the public, private and voluntary sectors to ensure that our sustainable development objectives are widely shared and understood, and that the

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[70] See Annex 6b for a detailed list of legislation.
[71] This White Paper recognised 'environment' as a policy area distinct from matters of environmental pollution. It was generally regarded as a 'damp squib' (Weale, 20003, p. 304).
[72] It includes the Integrated Policy Appraisal framework (developed with DEFRA and other departments), which considers the economic, social and environmental impacts of policy options, including distributional effects in relation to both different areas (e.g. rural, urban) and groups of people (e.g., elderly, low income). The framework aids existing appraisal requirements such as Regulatory Impact Assessments.

necessary connections are made. For example, transport and land-use planning impact directly on climate change, air pollution, noise, biodiversity and rural development' (DEFRA, 2002a, p. 2).

Environmental policy

Environmental policy in the UK is 'generally criticised as weak in nature' (Russell and Millstone, 1995, p. 242). The environment as a policy area in the UK has not only been misunderstood by the British government but also has been particularly prone to being *ad hoc*, improvisational and piecemeal (McCormick, 1991). In a similar vein, for Weale, 'the environmental policy paradigm is yet to be found in the UK' (1997, pp. 104). Traditional British practice was 'characterised by a number of features, including reliance on scientific and expert consensus, use of minimal framework legislation with detailed implementation and standard setting left to local authorities and semi-autonomous special government agencies' (Haigh and Lanigan, 1995, p. 29). Overall, the British approach to environmental regulation has been flexible and informal, making extensive use of self or voluntary regulation and encouraging close cooperation between government officials and representatives of industry (Vogel, 1986).[73] While ideological differences between parties do have effects, these are limited by factors endogenous and exogenous to the UK,[74] for example, freeing the market from the state (during the Thatcher period) or adopting the 'Third Way' (New Labour governments since 1997).[75] Though both shifted towards reliance on the private sector, the contractual arrangements for private sector provision of public environmental protection services were altered in tandem with the ideology.[76]

One significant common factor that cuts across party lines is a passive-reactive approach to the contingencies of a situation. The foot and mouth crisis and the consequent review of food and

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[73] For Vogel the approach is characterised by several elements: absence of statutory standards, minimal prosecution, flexible enforcement strategy, considerable administrative discretion, decentralised implementation, close cooperation between regulators and the regulated, and restrictions on the ability of non-industry constituencies to participate in the regulatory process. See also Lowe and Ward (1998) who, amongst other features, list Britain's island status as contributing to no practical experience of cross-boundary environmental regulation.

[74] See Seel *et al.* (2000) who associate the rise and decline of environmental protest in the UK to the stance of the party in power on environmental issues. John Major's Conservative administration lasted from 1990-1997, when the Labour government won electoral victory under the leadership of Tony Blair. Except for the rather insignificant Ecology party, the British environmental movement has not itself campaigned directly for public office (Vogel, 1986).

[75] According to Weale (2003, p. 315), 'two features of the Thatcher government programme made vigorous development of pollution control unlikely': desire to maintain strict controls on public expenditure and its adherence to neo-liberal, laissez-faire economics.

[76] See Rydin (2003) for a good review of the development of planning policy in the context of the changing nature of social, economic and political processes.

farming policy is a case in point. In addition, sheer physical constraints transcend party policy. For instance, the UK is rapidly running out of landfill both in terms of sites and capacity and therefore needs to reduce its dependence on this method of disposal (The Environment Council, 1999). Externally, the Conservative government of the early 1990s faced increasing pressure from the EU to introduce environmental protection measures, largely filtered through conflict between the UK and Europe over the detail of policy (Rydin, 2003). During 1990-1996, the Conservative government introduced approximately 18 legislation/policy documents on sustainable development and/or waste management, compared with around 45 that were initiated by the Labour government from 1997 to 2004. Thus, Labour governments since 1997 have been more encumbered with the responsibility to deliver on the various EU Directives and legislation.

A number of UK policy documents confirm the pressure exerted by the EU Directives.[77] The EU has significantly changed traditional environmental policy-making within the UK, taking its range of actors beyond the national or sub-national level of politicians, civil servants and local officials to now involving supra-national officials, European pressure groups and European politicians in a significantly more multi-leveled system of environmental decision-making (Jordan, 2002).[78] The Environmental Protection Act (1990), the Control of Pollution (Amendment) Act (1989), the Waste Management Licensing Regulations (1994), and the Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations (1991) are UK legislation to implement the Waste Framework Directive.[79]

Municipal Solid Waste policy

MSW policy in the UK exhibits a high degree of EU predominance. For instance, the EU's Landfill Directive has on its own caused a major upheaval in the way waste is managed in the UK [4, 7, 2, 10]. 'Undoubtedly, the EU was driving policy when we produced *Waste Strategy* (2000) and, given the huge global and local effects of waste, the policy is too reactive [mainly to

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[77] For instance, *Waste in England*, DEFRA (www.defra.gov.uk/environment/waste/intro.htm accessed 20 October 2003), WasteWatch (1999).

[78] The EU policy process itself is best characterised as multi-level, multi-arena, multi-venue game, with the EU providing a multitude of access points for policy professionals and interest groups of all kinds (Richardson, 2000). See Gray (1995) for details of hierarchical (mediated by national government), consultative (triangular relationship with mutual exchange of views) and participative (complex web of policy networks indicating a stronger role for sub-central government) models on inter-governmental relations between EU, national and sub-central government.

[79] Waste online, 'Legislation affecting waste' (http://www.wasteonline.org.uk/resources/InformationSheets/Legislation.htm accessed 15 December 2005).

initiatives from the EU]' [10]. Coupled with domestic/physical constraints,[80] the EU Directives decisively challenge MSW policy in the UK. Commissioning the SU Report *Waste Not Want Not* in 2000 by Number 10 is evidence of this heightened interest.

Waste in the UK is defined as in the EC Waste Framework Directive (75/442/EEC): 'any substance or object in the categories set out, which the holder discards or intends, or is required, to discard' (see Annex 6c for the categories). MSW is defined as that waste which is collected and disposed of by or on behalf of the local authority (Thurgood, 1999, p.5). Therefore, MSW comprises (see Figure 6.1) household waste, bulky waste collected directly from households, waste deposited by households at civic amenity sites, litter and street sweepings, and those (usually small amounts of) commercial wastes collected by the local authority (Thurgood).[81] Household waste typically comprises (2002 figures) garden waste (17%), paper and board (18%), kitchen waste (17%), general household sweepings (9%), glass (7%), wood (7%), scrap metal/white goods (5%), dense plastic/plastic film (8%), textiles (3%), metal packaging (3%), nappies (2%) and soil (2%).[82] Waste is collected by different methods including kerbside collections, civic amenity sites and 'bring banks'.[83]

Waste policy is interpreted within the broad framework of sustainable development and incorporates the key principles of Best Practicable Environmental Option (BPEO), a waste hierarchy and proximity principle along with an 'integrated approach' to waste management.[84] 'Sustainable' waste management is defined as using material resources efficiently to cut down on the amount of waste produced and, where waste is produced, dealing with it in a way that actively

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[80] For instance, it has been estimated that the Thames region has the landfill capacity for five more years worth of waste at current levels of production (Great Britain PLC, 1997).

[81] A civic amenity site is a facility provided by the Waste Disposal Authority to the public to deposit waste which cannot be collected by normal household waste collection round (http://www.planningportal.gov.uk/england/government/en/1115310687878.html accessed 14 February 2006).

[82] J. Parfitt in SU's Report *Waste Not, Want Not* (2002).

[83] Kerbside collection requires the householder to place waste and/or recyclables in a bag or container for collection on specific days. This is also referred to as 'door-to-door' collection. 'Bring' collection is a system where householders take their waste and/or recyclables to a designated collection point.

[84] Integrated approach interpreted broadly includes recognising each step of waste process as part of a whole, involving all key players and adopting a mixture of waste management options (*A Way with Waste*, 1999). The Royal Commission on Environmental Pollution defines BPEO as the outcome of a *systematic consultative and decision-making procedure*, which emphasises environmental protection and conservation across land, air and water. For a given set of objectives, it establishes the option with the most benefits or least damage to the environment as a whole, at acceptable cost, in the long and short term (PPG10). See Porter (1998) for a good account of the application of these principles in the UK. See Davoudi (2000) for a good critique of the BPEO.

contributes to the economic, social and environmental goals of sustainable development (DETR, 1999a).

Figure 6.1: Municipal waste arisings, England: 2001/02

Source: Defra

* Excludes recycling
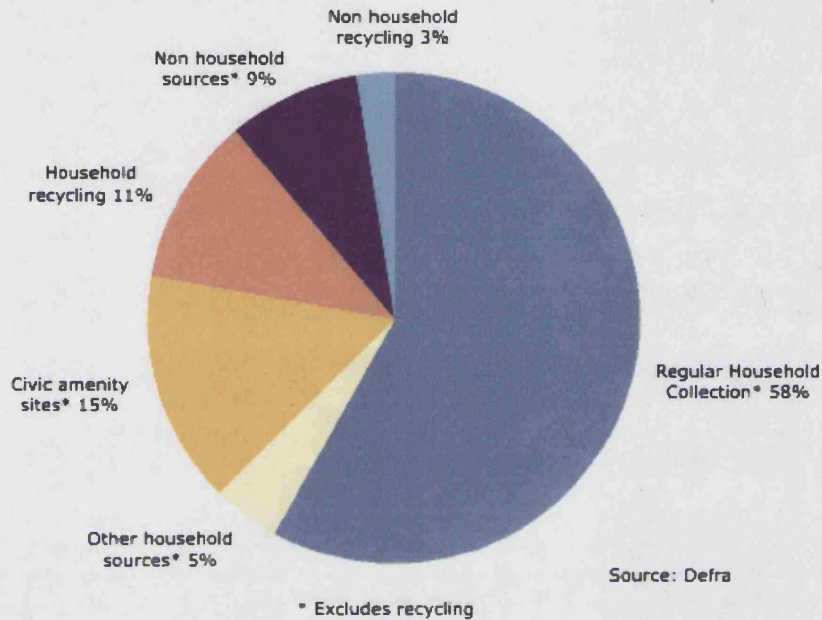
Source: DEFRA *Municipal Waste Management Survey (2001-02)* (August 2003) (www.defra.gov.uk/environment/statistics/index.htm accessed 10 January 2004).

While other waste disposal alternatives to landfill continue to be tried in different parts of the country, especially after the recognition given to an integrated approach to waste management, landfill still remains the dominant means of waste disposal in the UK (see Figure 6.2). In the year 2002-2003, 75% of municipal waste was still landfilled in England and Wales, clearly indicating a need for more environmental sustainability.

Figure 6.2: Municipal waste management, England (2002/2003)
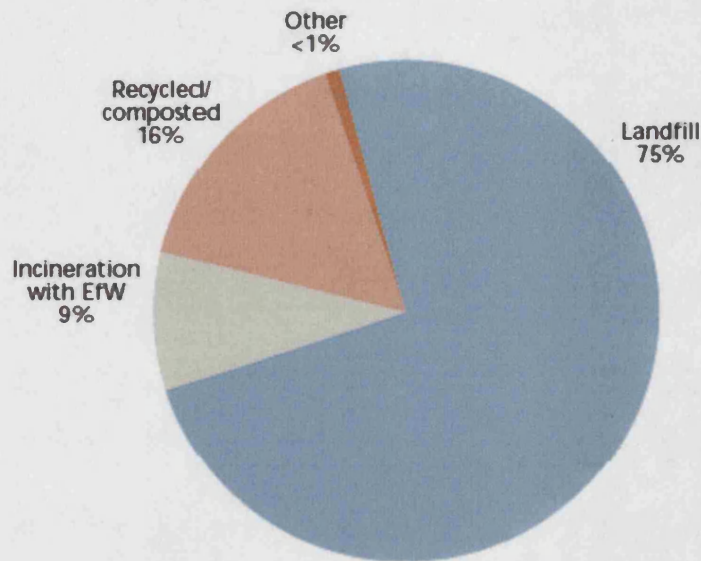
Source: DEFRA (2004). EfW = Energy from Waste

Earlier legislation in the UK addressed the specific issue of waste as part of a general approach to 'environment'. The principal enactment, the 1990 Environmental Protection Act (EPA) provides the statutory framework for most forms of pollution control; it is based on the principle of Integrated Pollution Control (IPC). The EPA thus reflected the growing realisation that integrated solutions to environmental problems were needed that 'treat the environment as a whole' (Weale, 1997, p. 92).[85] The Act introduced significant changes to waste management by establishing the

The strategy for waste outlined in the White Paper (1990) prioritised waste minimisation and recycling, setting a target of 25% for recycling household waste by the year 2000 (in accordance with the EU Landfill Directive). However, the priorities became clearer in 1995 when the government published its waste management strategy for England and Wales entitled *Making Waste Work*, which set out actual plans for sustainable management of waste. The government expressed commitment to the use of economic instruments, or broadly markets, in policies for sustainable waste management.[87] In *Making Waste Work* it introduced the economic instrument of landfill tax, which levied £7 per tonne on active waste going to landfill in order to encourage alternatives such as re-use, recycling and promotion of waste minimisation.[88] The standard rate of landfill tax is set to rise by £3 per tonne annually until it reaches £35 per tonne.[89] This policy document also included a marked promotion of incineration (with energy recovery) in par with recycling and re-use.

Waste Strategy (henceforth the *Strategy*) released by the government in 2000, is the national programme for developing waste management and includes targets for waste reduction, re-use and recovery, while seeking to limit disposal methods such as landfill.[90] The *Strategy* made two commitments at the heart of sustainable waste management: tackling the amount of waste *produced* (by breaking the link between economic growth and waste production) and putting the waste to good use (through substantial increases in re-use, recycling, composting and recovery of energy). The government wanted to base future waste management decisions on the principles of BPEO for each waste stream, namely, regional self-sufficiency, a waste hierarchy and proximity. The waste hierarchy is described by the *Strategy* (DEFRA, 2000, Part 2a, p. 29) as a 'conceptual framework that acts as a guide to the options that should be considered when assessing BPEO', making reduction in waste generation the most effective environmental solution. The proximity principle, according to the *Strategy*, links the waste hierarchy and BPEO, so that lower options in the hierarchy determine BPEO where environmental impact or cost of transport to a distant reprocessing facility outweighs the benefit of recovering value from the waste. The *Strategy* adopted the Royal Commission's definition of BPEO, with due regard to international

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[87] Also see *This Common Inheritance* (1990).

[88] The standard rate increased to £10 tonne from 1 April 1999 with the lower rate for inactive waste frozen at £2 per tonne. Inert waste used in the restoration of landfill sites and quarries was exempt from 1 October 1999 (*Making Waste Work*).

[89] Stands at £14/tonne (budget 2003-04) while giving tax breaks for companies that manage their waste better.

[90] DEFRA *Waste Strategy 2000 for England and Wales Part 1 & 2*. The 1995 Environment Act ensured that EU requirements were met to prepare national waste strategies for England, Wales and Scotland. The *Strategy* will be reviewed in 2005, in accordance with EU law.

obligations, national policy framework set out in the *Strategy*, and the policy guidance at regional and local level (DTLR, 2002). By considering local environmental, social and economic preferences in any decision, it allows for different BPEOs for the same waste in different areas, or for the same type of waste in the same area but at different times (for example, when the economy is growing or in recession) (DTLR, 2002).[91] Thus, it attempts to ensure sufficient flexibility in meeting the requirements of sustainable waste management. The *Strategy* also instituted statutory performance standards (as part of the Best Value Framework, which requires local authorities to set challenging targets to improve waste management services) to ensure that local authorities contribute to and achieve the targets. The *Strategy* obliges them to draft their individual waste plans in ways that balance between recycling and incineration (or energy from waste).

Self-sufficiency is sought in treating or disposing of waste within the region in which it is produced, without exporting it from the UK for disposal.[92] The 'relationship between waste management facilities and the transport network (road, rail and water) is a significant factor affecting the implementation of the proximity principle', along with land often developed for higher value uses (DTLR, 2002, pp. 33-34). The location of new waste facilities is a key factor influencing proximity and hence self-sufficiency. Therefore, the policy of waste management brings together land use planning and environmental protection (DTLR).

The government also targets specific materials to divert them from landfill through various pieces of legislation. The *Strategy* (2000) aimed to tackle different waste streams through producer responsibility (which was also promoted by the 1995 Environment Act). The Packaging Recovery Notes (PRNs) are based on this principle. Described as the 'new currency in recycling' they also provide the evidence that businesses have met the requirements of the Packaging and Packaging

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[91] For example, the adverse environmental, social and economic impacts associated with an extension to a local landfill may, when aggregated, be less than those associated with transporting waste to the nearest waste recovery facility. Factors considered might include, traffic generation, energy use, pollution, local employment and environmental enhancement associated with landfill restoration (DTLR, 2002). Also, the allocations made by WPAs within a region in their development plans should meet the regional requirements for waste management capacity of various types identified through the strategic level BPEO assessment.

[92] According to the DTLR (2002, p.35), 'the Regional Technical Advisory Boards play a key role in the implementation of self-sufficiency by providing information about existing waste management facilities and the volumes of waste to be managed'. The 'policies for self-sufficiency can be framed in either positive or negative terms', i.e. providing for new facilities with consequently less waste being exported across boundaries or restricting new waste management proposals, and thereby explicitly recognising that this would involve cross boundary movements of waste (DTLR, p.36).

Waste Regulations.[93] Applying to one tonne of material, with the accounting year running from January to December, the prices are typical market prices, with large volumes attracting a discount. Packaging Export Recovery Notes are issued on material sent to approved processors overseas. Tradeable Permits, announced in *Strategy* 2000, is another market-based instrument used to limit the overall amount of biodegradable waste local authorities can landfill.[94] These permits give authorities the flexibility to share the burden of meeting the waste targets. Waste Disposal Authorities whose costs of diverting waste from landfill would be very high can choose to continue landfilling waste by buying permits from those with lower additional costs (DETR, 2001).[95] The Waste and Emissions Trading Act (2003) is a positive measure enabling the UK to meet its obligations under the European Landfill Directive, developing the statutory framework for the trading scheme, combating climate change and moving towards sustainable waste management.[96] The recent Municipal Waste Recycling Act (2003), introduced as a Private Member's Bill (by MP Joan Ruddock), stipulates that every home in England should have a separate doorstep collection of at least two recyclables by the year 2010.[97] In addition, it requires the Secretary of State to report (to parliament) on the policies that can ensure recycling of 50% of municipal waste in the UK by 31st December 2010.

Financial initiatives include the Private Finance Initiative, which was introduced under the 1992 Finance Act. The Initiative allows key infrastructure projects to be financed from private sector funds. The private sector, in turn, earns returns through both market prices/rents and public sector payments for the use of services arising from the infrastructure. The public sector thus becomes

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[93] Letsrecycle.com (www.letsrecycle.com/prices/prnPrices.jsp accessed 20 July 2005). The Regulations for Packaging and Packaging Waste, introduced in 1997 in the UK, are in keeping with the EU Directive on Packaging and Packaging Waste (94/62/EC). The PRN instrument, issued by the reprocessor who carries out the final recovery, enables producers (or compliance schemes) to procure the necessary documentary evidence to show that they have had the specified tonnages of packaging waste recovered or recycled according to their particular obligation (DEFRA, 2003a). Also, a voluntary accreditation scheme for reprocessors was created, to ensure that recycling had actually occurred. The obligated businesses (as defined by the legislation) meet their obligations by acquiring PRNs, usually buying them from accredited reprocessors of materials who sell PRNs or by joining compliance schemes who buy PRNs on their behalf.
[94] The scheme implements England's contribution to the UK targets in Article 5(2) of the EU Landfill Directive for reducing the amount of biodegradable municipal waste landfilled, by increasing recycling and composting. This allows time for development of alternative schemes. An authority would incur considerable financial penalty if it over-runs its allowance (DEFRA www.defra.gov.uk/corporate/consult/landfill/ accessed 2 March 2004).
[95] The cost of alternative technologies is in many cases greater than landfill but will still be less than the proposed penalty (DEFRA www.defra.gov.uk/corporate/consult/landfill/ accessed 2 March 2004).
[96] *Waste and Emissions Trading Bill* (www.epolitix.com accessed 13 November 2002). See also *Waste and Emissions Trading Act (2003)* (www.epolitix.com/data/legislation accessed 21 November 2003). Applied in 2004, hence beyond the purview of this research.
[97] Baronness Gale is credited with successfully negotiating it in the House of Lords.

the purchaser of services rather than the owner of an asset. Compulsory Competitive Tendering (CCT) was introduced initially for construction, maintenance and highways work by the Local Government, Planning and Land Act (1980). The Local Government Act (1998) subjected refuse collection services, like kerbside collection contracts, to CCT.[98] A local authority can, through its own Direct Services Organisation, carry out these services in-house, so long as the work has first gone out to tender.[99] Though it did not preclude the imposition of commercial contract conditions on successful contractors, CCT was refined by the Best Value Framework. Best Value (BV), which came into effect on 1 April 2000, seeks to alter the way in which local authorities contract waste services, as well as requiring them to involve the general public in the decision making process.[100] According to DTLR (2002a), the Best Value Performance Indicators (BVPIs) help monitor the amount of waste handled and then disposed of or treated in various ways. 'Attached to these indicators are statutory performance standards for each local authority for the proportion of household waste collected that is composted or recycled' (DTLR, p. 64).[101] *Guidance for waste management planning* (DTLR, 2002, p.10) provides a checklist for policy which should be based on the following considerations: 'BPEO and its link to the waste hierarchy, need, proximity principle, regional self-sufficiency, environmental protection and site selection'.[102]

In sum, various legislation and policy documents reiterate the principles of sustainable waste management in the UK. However, placed within the context of a reactionary and *ad hoc* environmental policy-making in the UK, MSW policy relies more on principles made necessary by the EU.

6.3 London: general introduction

London's government, in keeping with reorganisation of local government initiatives in England and Wales, has seen frequent restructuring.[103] The Greater London Council (GLC) was established in 1965 to oversee Greater London. At the same time 32 new authorities (together

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[98] ODPM (www.odpm.gov.uk accessed 10 December 2003).
[99] Department of Environment (secretariat to the Review Group) *Report of the Review Group on the Local Authority Role in Recycling* (February 1997) Review Group on the Local Authority Role in Recycling, London. (www.odpm.gov.uk accessed on December 2003).
[100] The Local Government Act (1999) gave councils a duty to achieve 'Best Value' in all their operations.
[101] Waste Management BVPIs include: quality and fair access (BV 82a, 82b, 82c, 82d, 84, 91) and cost and efficiency (BV 86, 87) (DTLR, 2002a, p. 64-68).
[102] See Annex 6e for the various principles and instruments.
[103] For instance, the 1974 reorganisation of local government amalgamated smaller local authorities.

with the Corporation of the City of London) were established to deliver most local services.[104] These are the London boroughs of today. However, the responsibilities of the GLC, abolished in 1986, were shared between the boroughs and several new bodies with strategic responsibilities for London (*Focus on London*, 1998). The Labour government, which came into power in May 1997, re-examined the way London was governed in the light of the challenges facing the capital. This resulted in the establishment of new directly elected authorities for London: the Mayor and the Greater London Assembly (GLA). In accordance with the GLA Act 1999, Ken Livingstone (current Mayor), is required to produce Reports on the State of the Environment every four years and draft various strategies, including for waste management in London; for instance, he produced the first Report 'Green Capital' in 2003 (GLA, 2003b).[105]

London is home to about 7.3 million residents, comprising 3.1 million households, and has seen continuous growth in the 20th century.[106] London households produced an average of 1.1 tonnes of waste each in 2000/01, which overall accounts for a quarter of all waste in London (approximately 17 million tonnes/year, including household waste, business, industrial, construction and demolition, and other waste).[107] During 2000/01, the proportion of waste going to landfill in London was 72% compared with England's average of 75% (81% in 1999/2000).[108] Figure 6.3 shows the different methods of waste disposal used in London. The largest proportion of London's waste is exported to licensed landfill in surrounding counties of Essex, Buckinghamshire, Bedfordshire, Kent and Cambridgeshire.[109] The incinerators are located in Enfield (Edmonton Solid Waste Incinerator) and Lewisham (SELCHP).[110] The methods of transport for the waste sent for disposal includes road (67%), barge (16%) and rail (17%).

[104] The City of London provides local government services for the financial and commercial heart of Britain, the 'Square Mile' (City of London, www.cityoflondon.gov.uk/Corporation/about_us/_whatis.htm accessed 14 February 2006). It is comparable to the New Delhi Municipal Corporation.
[105] It provides 32 indicators which can be used in future surveys.
[106] London is not entirely built-up, containing 33 Sites of Special Scientific Interest, and is surrounded by the Green Belt (National Statistics: www.statistics.gov.uk/cci/nugget.asp?id=385 accessed 10 January 2003). The population is projected to increase to nearly 8 million by 2018 (GLA, 2003b).
[107] Statistics mainly from the National Statistics and www.capitalwastefacts.com website (accessed 12 December 2004). Of the 3.1 million households, 6.1% are detached, 19.3% semi-attached, 26.2% terrace, 33.3% purpose built flats, 15.0% converted flats, and 0.1% other housing.
[108] Regionally, the highest recycling regions in England in 2002/03 were generally in the South (20%), while the lowest was the North East (7%) followed by London at 11% (DEFRA, www.defra.gov.uk/environment/statistics/waste/kf/wrkf07.htm accessed 10 June 2004).
[109] The London Waste Recycling Programme, Association of London Government (ALG).
[110] The Edmonton plant deals with about 16% of London's household waste to produce electricity generating 232 thousand megawatt hours annually. It has recently built an extension (Edmonton B) as a Materials Recycling Facility (MRF). The SELCHP began operations in November 1994 with a design capacity of 420 thousand tones/year of municipal waste from Greenwich, Lewisham and Southwark, and an electricity generation capacity of 29 megawatts.

Financed by the council tax from households, the costs (financial and environmental) of collecting and disposing of municipal waste in London are as high as £70 per tonne on average.[111]

**Figure 6.3: London's MSW (thousand tonnes), 2000-01**
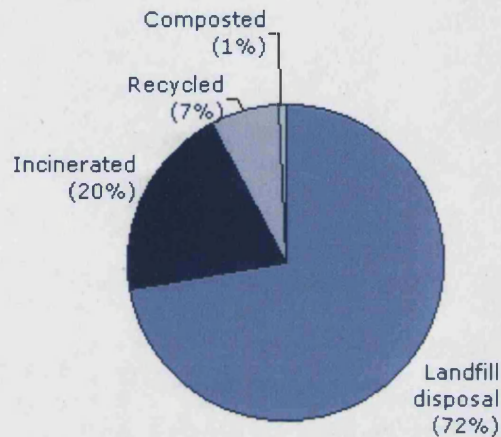
Source: DEFRA, ODPM, EA. (National Statistics: www.statistics.gov.uk/cci/nugget.asp?id=385 accessed 21 August 2003).

Recycling, which stood at 7% in 2000-01, had increased to 11% in 2002/03.[112] Placed in the context of a 16% increase in municipal waste in London between 1996/97 and 2000/01, the rate of recycling is clearly inadequate. Furthermore, the average recycling rate hides a highly discrepant rate amongst the local authorities of London (see Figure 6.4). The recycling performance for MSW in London of local authorities varies from as low as 4% to the highest of 25% (increased approximately to 35% in 2002/03). As explained in Chapter Three, Barking and Dagenham (with 4% in 2002/03 [1]), Barnet (with 12.5% [3]) and Sutton (with approximately 20% [2]) were selected to study the existing scenario in London. In general, 'recycling rates differ between authorities for many reasons, including type of scheme, materials collected, household participation and levels of social deprivation' (Audit Commission, 1997, p. 41).

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[111] Consultants Enviros RIS (in The London Waste Recycling Programme). Council tax is calculated on the basis of 8 property bands, for instance, it is nearly double for band H property owners than band D. The tax introduced in 1993, replaced the unpopular Community Charge or Poll tax (wikipedia - http://en.wikipedia.org/wiki/Council_tax accessed 10 January 2006).
[112] According to capitalwastefacts, in 2001-02, London's municipal recycling rate was 8%, rising to 11% in 2003-04 (http://www.capitalwastefacts.com/index.html accessed 26 January 2006).

Figure 6.4: Recycling rates (%) in London Unitary Authorities and Waste Disposal Authorities (1999-2000)
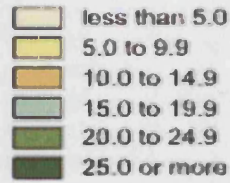
Source: EA (1999/2000).

Local government in the UK traditionally has a strong responsibility for implementing environmental policy as stipulated, for example, in the 1998 Waste Minimisation Act, aimed at reducing waste for disposal and requiring the BV Framework. However, local authorities attracted criticism for their record in waste management, particularly in planning sufficient capacity for waste disposal and in establishing handling and treatment facilities for specialised wastes (Gary, 1995). This is why the EPA separated the operational and regulatory functions with the intention of opening up waste disposal to competitive tendering and encouraging local

for disposal by the four JWDAs (see Figure 6.5).[114] These JWDAs came into existence in 1986, through the Waste Regulation and Disposal (Authorities) Order 1985 to assume the waste disposal functions of four areas within the Greater London Council. These operations are regulated by the EA. Both public and private sectors, including the voluntary sector, carry out the collection and disposal of waste[115] through bidding for contracts.[116]

Figure 6.5: London Boroughs organised into Waste Disposal Authorities

method of waste collection is hugely influenced by the type of residential building. Both this strategy and the strategy on Municipal Waste Management have statutory force.[118]

Various detailed statistics reveal the urgency associated with the problem of waste. According to the Association of London Government (2000), if projections (demographic and economic) for London are accurate, municipal waste will increase from 3.5 million tonnes/year to 6.7 million tonnes by 2020. Furthermore, even if waste generation rate per household were held constant, forecast increases in household numbers alone would bring the total to 4.1 million tonnes/year by 2020.[119] Brockes (2002) lists more statistics behind waste generation: well-off households produce an average of 5 kg more waste per week than poorer ones; people in cities discard more than those in the country; people who live alone waste more than those who co-habit. Packaging accounts for 35% of the weight and 50% of the volume of household waste (as opposed to 80% dust and cinders in 1892) (Brockes, 2002). Since single middle-class city dwellers opting for 'meals for one' is a rapidly growing demographic in Britain, the waste mountain looks likely to continue increasing.[120]

Barking and Dagenham

The ELWA is responsible for managing waste in the Borough of Barking and Dagenham, and it awarded a 25-year contract to Shanks East London in 2002 to manage waste disposal facilities, including civic amenity sites and recycling bins.[121] The contract is a 'truly Private Finance Initiative' [1], which requires Shanks to transform civic amenity sites into Reuse and Recycling Centres, and operate the kerbside orange bags recycling scheme.[122] 'It is hoped that with the new

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[118] See www.london.gov.uk/mayor/environment/waste/index.jsp for more details.

[119] A typical household generates between three quarters of a tonne and a tonne of waste each year (national average of 14.2 kg/household/week, so the extra 4 million households predicted by the government in its housing planning needs will equate to another 3-4 million tonnes of waste in the coming years (Thurgood, 1999, p.8).

[120] The increase in processed food has not had the advantage of reducing the amount of putrescible (easily biodegradable) waste. Prof. Rathje, a 'garbage archaeologist' from the University of Arizona, calls this the 'fast lane syndrome' - habit formed by busy professionals of buying fresh produce in the delusional hope of cooking it and, as a back-up, also buying microwave meals. The latter get eaten but the former winds up in the bin (in Brockes, 2002). Rathje also asserts that studying garbage is a good way to expose true consumer habits.

[121] Shanks (www.shanks.co.uk accessed 12 December 2004). See also ELWA (www.eastlondonwaste.gov.uk/ accessed 12 December 2004). Shanks East London is investing over £120 million in new recycling and waste-processing facilities to ensure that up to 67% of East London's rubbish is diverted from landfill and turned into a resource by 2016. It intends to raise ELWA's household recycling rate to 33% by 2016.

[122] The orange bags help indicate recyclable materials.

contract the rate of recycling in the Borough will eventually increase... [because]...part of the contract requires Shanks to be responsible to meet the Borough's recycling targets' [1]. The London Recycling Fund financed two new vehicles, a number of jobs and revenue expenditure to support the recycling scheme, though, after 2006 continuing the project would be Shanks' responsibility. Despite these measures, until a new MRF is ready, the waste will be landfilled at Bedfordshire.[123]

Barnet

The NLWA is the statutory authority responsible for waste disposal in Barnet and six other local authorities, with two Barnet council members sitting on the NLWA committee [3]. Waste collection is done in-house by the Environmental Services team. Approximately 99% of household waste is directed to Hendon Transfer Station. From the station it is either transported by rail to landfill in Bedfordshire which is rapidly reaching capacity [3] or by road to various recycling units, depending on the material, for example glass is taken to British Glass in Harlow.[124] The remaining 1% is incinerated at Edmonton. The approximately 10% rate of recycling in Barnet is largely due to doorstep collection of paper but multi-materials collection has also been introduced.[125] The number of initiatives include recycling from home (in partnership with ECT), flats recycling service, Civic Amenity and Recycling Centre.[126]

Sutton

As unitary authority, Sutton is responsible for both collection and disposal of waste. The company Sita is currently under contract for waste disposal and managing the MRF [2]. Sutton was the first unitary local authority to be awarded accreditation under the Eco-Management Audit Scheme for managing its own direct and indirect impact upon the environment.[127] The borough has pursued a recycling policy since 1989, when it introduced 'bring banks'. In 1990, it had

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[123] The 2002 Inspection Report on Street Services rated the borough with one star: fair but uncertain prospects for improvement. (Audit Commission - www.audit-commission.gov.uk/reports/PRESS-RELEASE.asp?CategoryID=&ProdID=15437A6B-7319-49A8-8927-2B24A57566EB accessed 20 April 2004).
[124] capitalwastefacts.com/ accessed 17 July 2003.
[125] The 2000 *Waste Management Service Assessment* rated the service as 'fair and unlikely to improve'. This was re-assessed in 2001 to rate the service as 'fair with promising prospects for improvement' (Audit Commisson - www.audit-commission.gov.uk/reports/BVIR.asp?CategoryID=&ProdID=B53FC4D0-03C2-11c7-B220-0060085F8572&SectionID=sect2# accessed 20 April 2004).
[126] Barnet www.barnet.gov.uk accessed 15 July 2003.
[127] Sutton www.sutton.gov.uk accessed 20 April 2003.

introduced kerbside collections for paper every fortnight, when no one knew what 'kerbside' meant [2].[128] The recyclables are sent to various companies/organisations by road.

Despite the local differences (as listed in Annex 6f) amongst the three boroughs, there are certain similarities necessitated by national legislation/guidance. For instance, the Unitary Development Plan drafted by all the boroughs is a statutory document for the most efficient and effective use of land in the public interest produced by the councils but based on the structure and content laid out by the central government.[129]

Conclusion

Diverse actors at the national level play a role in MSW policy in London. The interaction amongst these actors is explored in the next chapter. This chapter described the main policy documents that outline MSW policy. Certain basic principles adopted for ensuring sustainability in waste management, and the planning aspects associated with it, were explained in the second section. McCormick's and Weale's understanding of environmental policy in Britain is also reflected in MSW policy: endogenous and exogenous factors help create similarities in responses irrespective of party affiliations. Though London government has seen frequent restructuring, none addresses the awkward split between waste collection and waste disposal authorities. Coupled with huge increases in the amount of waste generated, this raises the question of how London's waste can be managed sustainably. The next chapter addresses this question by utilising Jänicke's model and its factors to analyse MSW policy in London. Further, it explores the institutional framework, including the resources/constraints and interactions of the various actors in the network and the consequent dynamics of the policy process.

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[128] The 2001 *Inspection Report on Environmental Sustainability* rated Sutton as excellent with promising prospects for improvement, because the council was concentrating on issues which mattered to the local people, including recycling and waste management.
(Audit Commission, www.audit-commission.gov.uk/reports/BVIR.asp?CategoryID=&ProdID=253C4202-76E0-4be4-9209-E342A69039D7 accessed 20 April 2004).
[129] Barking & Dagenham (www.barking-dagenham.gov.uk/8-leisure-envir/planning/plan-udp.html); Barnet (www.barnet.gov.uk/environment_transport/udp/index.php3); &
Sutton (www.sutton.gov.uk/environment/suttondevelplan/) accessed 12 March 2003.

Chapter 7

'Waste Not, Want Not': can London's institutional capacity deliver?

7.1 London's capacity for environmental policy reform

7.2 Institutional capacity for effective Municipal Solid Waste policy reform

> ➤ Sources of pressure

> ➤ Understanding the political-institutional framework conditions: the Municipal Solid Waste policy network

> ➤ Responsiveness: anything but effective Municipal Solid Waste policy reform

London is a generation behind Berlin in its approach to recycling.

Mayor Ken Livingstone in his Report on London (GLA, 2003b)

As established in the previous chapter, the UK is not a pioneer in introducing measures to achieve sustainable waste management. As recently as 10 to 15 years ago, waste was a 'backwater' but, with the influence of EU forces, the UK has had to get onto a steep learning curve [21].[1] Mainly driven by the EU and the fear of impending sanctions, the UK's waste policy is largely reactive. Consequently there is little opportunity to discover and create immediate win-win constellations amongst the actors. Could the low institutional capacity of London to reform its MSW policy help explain why it is behind Berlin in its approach to recycling?

In the broad context of environmental policy and organisational set up described in Chapter Six, this chapter applies Jänicke's model to analyse London's MSW policy process. Policy networks help elaborate on the political-institutional framework conditions, identified as one of the structural framework conditions in the model. By studying how the institutional framework

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[1] At 81.51%, the UK has the lowest rate of implementing EU Directives in the environment sector, in comparison to the average of 92.30% amongst other member states (Secretariat General, European Commission on Situation of the notification of national measures of implementing Directives (http://europa.eu.int/comm/secretariat_general/sgb/droit_com/pdf/mme-sector_20020510_en.pdf accessed on 12 June 2004). Certainly, the UK does not adopt radical alternatives in its waste management like other member states, for instance, Germany that tends to go beyond mere compliance [4].

mediates the relationship between pressure for environmental protection and responsiveness, it is established that the institutional capacity impacts more on MSW policy in London than is recognised in Jänicke's model.

7.1 London's capacity for environmental policy reform

Jänicke's model comprises the factors: **actors**, **strategies**, **structural framework conditions**, **situative context** and the **problem**, which are applied to the case of London, in the order presented in the model. Weale (1997), as mentioned in Chapter One, has applied the model to assess Great Britain's capacity for pollution control. He maintains that the 'modern institutional development of environmental policy institutions' (p. 91) began in the 1970s, with the establishment of an environment ministry under Mr. Heath's Prime Ministership. Further that the institutionalisation of environmental policy was accompanied by some legislation, like the 1974 Control of Pollution Act. He concludes that traditionally the policy style favoured cooperation rather than confrontation with industries to be regulated, and could not be detached from the political leanings of the party in power. For instance, the neo-liberal political strategy of the Conservative governments since 1979 involved giving substantial policy concessions to industry in order to boost the UK's economic performance. For Weale, the main actors included environmental policy institutions (for instance, DoE, Her Majesty's Inspectorate of Pollution, local authorities), green organisations (mainly environmental pressure groups, like FoE and Green Alliance), media, other proponents amongst business organisations (like the Confederation of British Industry, which has to balance its environmental awareness with concerns among its members about costs, particularly those arising from regulation), and target groups (which included the main polluters, like the Central Electricity Generating Board and the water industry).

Of particular interest to this research is Weale's analysis of capacity-building in terms of: an increase in number, strength, professionalism and independence of proponents; increase in general resources for proponents of environmental policy (derived from public opinion, institutional sources like courts, and international organisations); and policy integration (internal and external). He refutes the 'traditional characterisation of British policy-making as dominated by small elites, relatively closed from a wide range of influences but operating with close informal networks' (p. 100). For him various factors have contributed to opening up the policy-making process. He lists the following influences: the technical features of environmental policy

mean that scientific advisers often have high status in the policy process; environmental pressure groups have themselves become more technically expert and more adept at using the opportunities provided by European legislation to embarrass the government; and the growing influence of parliamentary select committees in the 1980s. He also states that 'public opinion at large has a diffuse, but significant, influence on thinking, even if it is difficult to detect its influence in policy' (p. 101). However, there is one area where he argues the policy process has not opened up:

> Despite these trends towards greater openness, standard-setting for pollution control is still conducted by processes that are relatively closed to the public at large and dependent upon negotiation between industry and the regulators [....] Moreover, openness in government often means openness to conflicting, and not always equally resourced, forces. (1997, p. 101)

However, according to Weale, there is little policy development that follows the central tenets of ecological modernisation. For instance, there is little use of pollution charges in accordance with the polluter pays principle and only haphazard encouragement of research and development for cleaner technologies. He concedes that although the environmental movement has some influence in government, the role of industry is stronger, part reflecting the priority given by the government to reversing the UK's economic decline, thus creating a dependence upon industry. He also notes the influence of the technical and scientific experts within the policy-making system, and the pressure exerted from the European Union.

However, combinations of certain aspects of political culture and institutions constitute the main structural restrictions on the development of environmental policy: the electoral system, which imposes severe limits on the scope of party competition and on the growth of new parties[2]; the widespread belief among policy elites of all persuasions that the chief priority of public policy is to counteract the perceived long-term decline in the international competitiveness of the UK economy; and finally, perhaps most importantly for the point of view of the thesis, the extremely powerful Treasury, which combines the functions of a finance ministry, tax ministry and an economic policy ministry. The Treasury 'is traditionally suspicious of capital expenditure that cannot show a tangible return within a suitably discounted period of time', which gives rise to a systematic bias against investing in environmental projects (p. 106). Furthermore, the relatively

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[2] 'There is thus no chance of a green party playing a potentially pivotal role in the formation of a governing coalition, and therefore there is no opportunity for the sort of policy bargaining that might bring environmental policy more prominently to the fore' (1997, p. 106).

limited powers and resources of local government compound the main restrictions listed. In his evaluation of pollution control policy, Weale concludes that it is not effective: while efficient in terms of low ratio of policy inputs to policy outputs it is not effective in terms of committed and coordinated measures to achieve sustainable development. Indeed it is difficult to point to concrete steps being taken towards pollution prevention and sustainable development.

In sum, though Weale accounts for positive trends in capacity-building of environmental proponents, he concedes that there are major restrictions in the path of mainstreaming sustainable development and ecological modernisation. The remainder of this section profiles London's MSW policy on the different factors of Jänicke's model, presented in the sequence used in the model. The factor of 'actors' in particular, follows Weale's analysis of identifying actors and highlighting some problems associated with them.

Actors

The actors in the UK range from government departments, NGOs, local community organisations to industries. The parliament as the legislative body, and the PM and his Cabinet as executive head of the government determine the strategies for sustainable waste management in the UK. However, 'there are always particular problems with politicians, the prevalent and well-known phenomenon "NIMTO" (not in my term of office) applies both at national and local levels and they may want to put things off to another day' [5]. The government reorganisation in 2001 which created the Department for Environment, Food and Rural Affairs (DEFRA) (and the Office of the Deputy Prime Minister, ODPM, later in 2002) 'reflected in some ways the priorities of the government, creating distinct areas of focus for the departments' [10].[3] Besides, the Department of Environment Transport and Regions (DETR) was too big to manage, and could not do everything [21]. Faced with the constraint of staff shortages to commit to the MSW issue, DEFRA is responsible for the development of waste policy [10]. The policy-making process is subject to influence from the Department of Trade and Industry (DTI), Treasury and ODPM in particular. The Cabinet Office (CO) as the 'neutral facilitator' has the responsibility for facilitation of a (so far as possible) consensual and 'united' position amongst the Whitehall

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[3] According to Gummer (2002, p. 17-19), 'the genesis of DEFRA was unhappy [....] DEFRA's birth was the result of political accident and manoeuvring and although individual ministers have proved committed and tenacious, the department is institutionally unsound'. John Gummer was the Secretary of State for the Environment, UK.

departments [16].[4] Manned by generalist career administrators, the CO offers non-partisan advice on policy to the Cabinet as well as Ministers and officers [16]. However, the Strategy Unit (SU) was more widely mentioned in the interviews at various levels, in view of its *Waste Not, Want Not* Report (2002).

The streamlining of the London government with the creation of the Greater London Authority (GLA) and the Mayor recognised the need for a more focused approach to resolving London's problems, including environmental problems. According to [19b], 'this new authority shares some weaknesses as the rest of government does: perennial focus on process rather than product. The problem is to let process masquerade as product.' Although the Mayor produced the waste strategy in line with DEFRA's policy [19, 10], he does not have any direct responsibility for dealing with waste. In fact, DEFRA had to make sure that the London boroughs pursued the national policy [10]. The provision of waste services is the responsibility of the boroughs, which are often faced with mainly financial constraints to provide services like recycling [1, 2, 3, 3a].

The nature and impact of the NGOs on the policy process varied in objective, style and level of success. Each NGO adopted different strategies to exert influence. One NGO aims for symbolic commitments because 'getting the PM to speak for 45 minutes on research that has taken up 40 years makes a huge difference' [7]. Another NGO works with local authorities to meet targets [4]. Most NGOs face resource constraints which could relegate waste issues to the background. The recent massive squeeze in government funding, coupled with the 'bust' in funding from the market, has led to series of strategic overviews within most of the NGOs [6]. Participation by NGOs is generally encouraged, though the three selected boroughs in the case study did not have an active participant from the NGO sector.[5]

As mentioned in the previous chapter, the policy process is open to lobbying not only by NGOs but also the Environmental Services Association (ESA), representing the waste industry, along with individual waste companies. There are about 578 registered landfill operators in the UK [13a]. As the representative of industry, lobbying is a key activity at ESA [13]. Its position is based on three central points: regulation, funding and planning. According to [13]:

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[4] Any unresolved disagreements can be taken to the Ministerial level [16].
[5] The Centre for Environmental Initiatives in Sutton is mainly sponsored by the Council [2] and carries out only awareness projects on waste issues (www.thecei.org.uk accessed 16 May 2003).

Our industry is driven by regulation. Without waste management legislation, there would be no waste management industry. What we ask for is fair and consistent legislation which is transparent and promotes growth of industry. Waste management has to be funded *fully* to meet the challenges of targets from the EU. We need a good planning system to deliver those targets and the 2000 facilities (composting/recycling/energy from waste (efw)/new technology) we need.

Further, the industry adopts a multi-agency approach [18], interacting with DEFRA, DTI and Environment Agency (EA).[6] Therefore, it broadly 'supports the work of the EU [....] [aiming] for a balance between environmental outcomes and environmental sustainability' [13]. Individual waste companies are consulted by the departments on policy documents. They seek 'to operate economically and competitively, but need to have a certain scale of operation [....] The technology increase requires a two to three times increase [in scale], and importantly it is a commercial risk' [23].

Though various public attitude surveys indicate that the public attach slightly lower priority to waste management than other issues, there are local community groups, like GAIN, which was created in response to the specific planning proposal to build an incinerator in Guildford. There was local opposition, in coordination with the local FoE, to the proposed SELCHP (incineration plant in Lewisham). However, it was fragmented and did not succeed [26]. According to [26], recently they were successful in forcing the local authority of Lewisham to conduct a health assessment of the plant.

Strategies

The official MSW policy reiterates in principle the waste hierarchy, focusing on the options of recycling, composting and waste minimisation.[7] The task of the UK government, especially in view of the Landfill Directive, is to divert waste from landfill. Instruments include landfill tax, Landfill Tax Credit Scheme (LTCS), Packaging Recovery Notes (PRNs), tradeable permits and others. Recycling and composting have consequently been placed 'at the heart of a fundamental shift in our attitudes to waste management'.[8] However, there is evidence of a distinct policy shift

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[6] According to Davoudi (2000), although the EA contributed to the co-ordination of the regulatory functions, it weakened the links between the waste licensing and the land use planning systems, because the two functions carried out by a single local authority were now split between two organisations with one accountable to its local constituency and the other to the central government.
[7] See for instance, *Less Waste, More Value* (1988).
[8] Former UK Environment Minister, Michael Meacher in 'New Waste Management Program Launched in Britain' (November 29, 2000) *EarthVision Environmental News*, London.

amongst the alternatives. Meacher (then Environment Minister) in 1997 advocated landfill with energy recovery as more sustainable than transporting waste to an incinerator.[9] However, two years later, he declared that modern incinerators (Waste-to-Energy) offered a feasible solution with tight controls, adequately protected human health and the environment and played an important role in solid waste management (Biffa, 2000, p. 6).[10] Interestingly, *Waste Strategy* (2000) suggests considering incineration with energy recovery only *after* opportunities for recycling and composting have been examined.[11] Yet there is a growing and misleading emphasis on incineration in various circles (mainly government and industry) [4, 6, 7].[12]

The 'waste hierarchy (in the UK) puts energy recovery through incineration on par with material recovery through recycling, on the grounds that both options reduce the amount of waste landfilled' (Davoudi, 2000, p. 170). 'As recycling is still a fledgling national industry with under-developed markets, there is only one obvious candidate: high volume energy from waste plants' (Biffa, 2000, p. 8).[13] Some bureaucrats and industry representatives interviewed emphatically stressed the need for refining the planning system to enable the speedier construction of waste-to-

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[9] Landfill bio-gas schemes exploit landfill gas to produce heat or electricity and there are approximately 33 in operation in the UK (Gandy, 1993).

[10] Margaret Beckett, Secretary of State, DEFRA has endorsed energy from waste (EfW) as an option for dealing with waste, stating that 'we cannot allow ourselves the luxury of too easily closing down our options' (see www.letsrecycle.com 27 October 2001 *Beckett waste summit welcomes by ESA*). In the same article, the ESA's Chief Executive, Dirk Hazell welcomed her acknowledgement of the role of energy from waste option.

[11] According to Biffaward (2003, p. 40), 'Electricity production from current waste incinerators is less than 0.5% of total demand. If all MSW was incinerated then it could provide 5% of the UK electricity demand. This would be good if the incineration of waste produced less carbon dioxide per kilowatt-hour than the combustion of gas, oil or coal, but it does not'.

[12] In 1997, the Audit Commission in its *Good practice in waste management* advised local authorities to compare waste-to-energy costs with landfill forecasts. In its Exhibit 30 (p. 67), the title states 'forecast of landfill costs versus fully integrated solution' but the explanation reads 'it is possible to calculate the financially optimal point to switch from landfill to incineration'.

[13] In essence the government favours EfW plants over mainly landfill *but also* (my emphasis) recycling (Biffa). According to Biffa, the government estimates that 165 more incinerators (average capacity of 200,000 tonnes) will be needed by 2015 (in addition to the 12 existing in 1999), and plans only 100-200 new materials recovery/recycling plants (average capacity 50,000 tonnes) and 150-300 composting plants (average capacity 20,000 tonnes). This over reliance on incinerators could skew the market against reuse and recycling (Biffa).

energy plants.[14] At the other end of the spectrum, waste minimisation is mentioned in both EU and domestic legislation.[15]

Structural framework conditions

This factor is divided into cognitive-informational, political-institutional and economic-technological framework conditions. The following section on MSW policy network discusses the political-institutional framework condition in further detail.

The UK government, NGOs and, interestingly, even the waste management industry in general, actively provide *information* on waste management, accessible to the wider public.[16] Government invites stakeholder participation by organising open consultations (usually via the internet) for policy initiatives for waste, thereby generating a certain degree of debate on the issue.[17] Waste statistics are produced by the Chartered Institute of Wastes Management, EA and the National Statistics Office, which sometimes show discrepant figures. The NGOs publish responses to government policy statements and independent reports. The waste management industry occasionally commissions research into various aspects of waste management.

The government has attempted to ensure *intra-policy cooperation* by carving out a role for the different levels of the political system. For instance, the *Waste Strategy* (2000) accredits local authorities with playing a key role in delivering more sustainable waste management, especially in view of their responsibility for land use planning and the control of development. In fact, the *Strategy* leaves the local authorities to decide the importance or weight attached to a Best Practicable Environmental Option (BPEO) assessment in the planning process. This is also reiterated in the Planning Policy Guidance (PPG) 10. Local authorities consult the public on

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[14] 'The cumulative effect of EU prohibitions against co-disposal and against landfilling particular products will be to force a potential crisis in the lack of available treatment plants, if alternative facilities are not brought on stream in time [....] The European Environment Agency has estimated that to meet the requirements of the Landfill Directive alone, the UK will have to divert nearly 27 million tonnes of biodegradable municipal waste from landfill by 2016 [....] [however] planning remains a serious barrier to the delivery of the Government's strategy' (Environmental Audit Committee, 2003, p. 28-29).

[15] The UK's Waste Minimisation Act (1998) removes any legislative grounds for a council's hesitation in considering waste minimisation options, though the council cannot enforce change on individuals and businesses. The feasibility of achieving zero waste, especially in the near future, was questioned by both local and national government officials [1, 10, 11], and is not considered in this analysis.

[16] The situation has vastly improved since 1997, when Weale (1997) found figures on waste management to be less freely available than figures for air and waste pollution.

[17] A distinction can be made with consultation invited for waste policy and that invited for by the planning system for location of waste infrastructure, etc.

planning decisions for the location of waste facilities. In addition, the councils inform residents about recycling and composting initiatives through leaflets [1, 2, 3].

Inter-policy coordination, internationally recognised by the Brundtland Report (1987) as vital for success of environmental policy, remains a difficult objective to achieve in the context of waste management in the UK. 'One key barrier to recognition of environmental pressure is how it fits with other government policies, otherwise there are no particular barriers' [10]. Encouraged by the EU and coupled with the 'growing realisation that end-of-the-pipe environmental regulation does not in itself address the causes of environmental degradation' [10], this has gained some recognition within the government. Nonetheless, this fails to cultivate what Jänicke calls *capacity for strategic action*.[18] Generally, the *ad hoc* nature of the environmental policy, as emphasised in the previous chapter, makes the environment a subsidiary consideration in other policies.

The UK is one of the strongest economies in the world. It has an annual growth rate of 2-3% (Pre-Budget Report, 2003). According to the OECD (2002), since the early 1990s, per capita Gross Domestic Product (GDP) has grown 20% in real terms. Further, it states that the rate of municipal waste generation showed no sign of decoupling from GDP growth in the 1990s. Under the sub-section of 'protecting the environment', UK budgets have focused on cleaner transport and energy efficiency through the economic instruments of climate change levy, fuel duties, vehicle excise duty, air passenger duty and others.[19] The tax system was proposed as one instrument in combination with others, like regulation and voluntary action, to deliver environmental objectives (Treasury, 1997). The introduction of the landfill tax in the 2001 budget aimed to promote *better* waste management (Budget 2001). The UK spends around £5bn per annum on waste management which is equivalent to around 0.5% of Gross Domestic Product [13a]. 'This is fairly low relative to many other EU Member States' [13a]. Both DEFRA and EA encourage using technologies that divert waste from landfill and divide them into broad categories of biological, chemical and physical.[20] Application of technological solutions from other countries has also been explored in the UK context [20], yet waste continues to be landfilled.

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[18] According to the OECD (2002, p. 7) 'much remains to be done to translate sustainable development orientations into practice and to achieve fill integration of economic, social and environmental considerations in important sectoral policies'.

[19] See Treasury (www.hm-treasury.gov.uk/budget accessed 25 September 2005) for details. The 2001 Budget included an aggregate levy to reduce environmental impacts of quarrying, returning the revenue earned to business and local communities.

[20] EA's Waste Technology Data Centre (www.environment-agency.gov.uk/wtd/679004/?lang=_e accessed 29 August 2004).

Situative context

The *short-term variable conditions* of action currently do not favour an increased focus on the waste hierarchy in managing waste. The main emphasis in policy circles seems to be meeting the various EU Directives, without due consideration of the bigger questions of production and consumption cycles. As a consequence, more EfW plants are encouraged to resolve the MSW problem.

Problem

The *nature* of municipal waste and the inherent problems in its management (for instance, in collection, disposal, and shortage of financial resources) are accentuated by the pressure from the EU, growing volumes of waste and diminishing space for landfill. There were 'plenty of former mines and quarries that could be used as landfills' [22], which were cheap options to deal with waste [7] and to a large extent dulled the immediacy of the MSW problem. As [21] sums it up, the waste issue is largely overlooked because it is not piling up around us, so there is a tendency not to do anything.

The above sub-sections highlighted the factors of actors, strategies, structural framework conditions, situative context and nature of the problem in relation to MSW policy in London. As discussed above, Weale (1997, p. 107) used Jänicke's classification to evaluate UK's pollution control policy. He found little evidence of efficiency defined ambitiously to mean raising the productivity of the population to achieve sustainable development, along with little evidence of the commitment to intelligent and coordinated measures to make this goal possible. Further, he argued that it was difficult, within the context of UK institutions, to point to concrete steps being taken towards pollution prevention and sustainable development (p. 107). For example, emission standards are tightened and new substances are controlled but this may happen some years after the enabling legislation has been passed. However, Weale does not analyse the factors explaining this delay.

As discussed Weale (1997, pp. 91-93) argues that, in the UK 'a participative policy style (cooperation rather than confrontation with the industries to be regulated, with an emphasis on voluntary compliance)' is broadly pursued. However, Weale also asserts that 'there are strong pressures restricting the development of more forceful regulation' (p. 93). With respect to

integrative capacities, Weale states that economic instruments have been given only a minor place in the control of emissions in the UK, with persistent attempts to pursue an agenda of deregulation to boost the UK's economic performance, and furthermore, that both internal and external integration of environmental policy is questionable. Therefore, there are some similarities between Weale's study and findings of the present study.

The model when applied to London in the context of MSW management, presents a simplistic account. Strong economic foundations, high pressure for reform, prescribed strategies and urgency of the problem, together suggest a greater capacity for sustainability in MSW in the city than is currently evidenced. The UK's management of waste remains not only at the bottom of the league in Europe but its policies, like the *Waste Strategy* (2000), remain ambiguous and confusing, especially on the aspect of recycling vs. incineration [7]. With a 'chaotic system' that is difficult to manage and a lack of awareness (amongst diverse actors but mainly government departments) of EU legislation, there are likely to be crises in abandoned vehicles and pesticides, similar to the fridge crisis [22].

The government failed to take steps to build the recycling plants to remove ozone-destroying cholofluorocarbons (CFCs) gas from the foam in old fridges before disposal in time for the EU deadline on 31 December 2001. For example, 'the fridge mountain' for which SHANKS and others made representations to government to 'get their act together' but were ignored [18]. The then Environment Minister, Michael Meacher, held the incompetence of the European Commission responsible for the failure, stating that it had failed to answer nine separate requests for clarification between early 1999 and mid-2001. Margot Wallström, the European Environment Commissioner, however, described his claim as 'entirely unfounded' and stated that the British officials were kept informed at every stage after the proposal was first put forward in 1998.[21] It was not until 19 November 2001, that DEFRA informed the EA officials that the foam had to be extracted under the new law, just six weeks before the deadline. As a result, 6,500 old fridges were dumped in streets or the countryside per week, or were stored by local authorities at a cost of more than £75 million. In total the fiasco was estimated to have cost £250 million.

Prior to the introduction of the regulations, approximately 70% of fridges/freezers were exported, 15% were refurbished for resale within the UK and 15% were disposed/recycled. Thus 85%

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[21] The minutes show that laggards such as Britain were to work out temporary arrangements with neighbours until their own recycling plants were ready (Evans-Pritchard, 2002a).

financed the disposal of 15%.[22] Britain was slow to develop the relevant technology because it had a flourishing export business, sending them to the Third World, a trade now suddenly illegal (Evans-Pritchard, 2002a). According to DEFRA, the problem of fridge disposal arose because the UK did not have the technology to comply with a new EU ruling that foam containing CFCs must be removed to protect the ozone layer.[23] The Environment, Food and Rural Affairs Select Committee of the Parliament found that the UK officials should have alerted ministers to the issue earlier, and that there was too great a delay in securing definitive interpretation of vital parts of the regulation. The UK industry has since invested in about 16 plants to enable safe disposal of fridges in the UK.

7.2 Institutional capacity for effective Municipal Solid Waste policy reform

The need for the government to do more has never been clearer.[24] The abysmal record on reuse and recycling of household waste, its mountain of disused fridges, and the widespread public resistance to plans to build incineration plants has sounded the alarm in Downing Street over the country's waste problem (Brown and Hencke, 2000). In addition, London is different from other cities: it is huge and dense; land is at a premium and difficult to use for waste facilities [13]. Fears of prosecution in the European Court of Justice and fines of millions of pounds per day have compelled a rethink of MSW policy in the UK. But is enough being done to ensure environmental sustainability in MSW management?

Diverse actors impact on both the style and nature of the network and the direction of policy. The actors are broadly categorised into state, industries, non-governmental organisations and the public. This section captures the broad features and the dynamism of the network. Three main relationships amongst the actors can be discerned: between departments, between different levels of government and between the different stakeholders (government, industry, NGOs and the public).

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[22] Evans-Pritchard (2002; 2002a).
[23] DEFRA (2002) Select committee reports on the disposal of fridges (www.defra.gov.uk/news/latest/2002/fridges.htm accessed 28 July 2004).
[24] 'Despite all the rhetoric about putting the environment at the heart of its policies, the reality is that the government only tinkers with sustainability at the margins...Will they listen to public concern, or over-ride it in the interests of their big-business friends?' (Charles Secrett, FoE former Director in FoE, 9 September 2002).

Sources of pressure

The main source of pressure for reform, as mentioned in Chapter Six, comes from the EU which has focused on waste since the 1970s. All the actors interviewed during the fieldwork agreed that the EU determines the urgency and direction of the waste policy. For example, it was in order to comply with the EU Directives that the *Waste Strategy* was adopted in 2000. Apart from the EU influence and pressure, the UK is also 'running out of landfill (both in terms of sites and capacity) and needs to reduce its dependence on it as a route for waste disposal'.[25] This situation has become more urgent with the hugely expanding growth of household rubbish.[26] There are growing green concerns amongst the public to place the environment alongside health, education and crime as one of the most important issues facing the government.[27] Yet, pressure is also exerted by local residents, exhibiting degrees of NIMBYism: while recycling and composting initiatives find favour amongst the public at large, 'no one wants to live near a recycling or composting site' [21].[28]

Another source of pressure for reform comes from the private sector, reflecting two main positions. Firstly, to 'restructure the policy framework to enhance conditions for profit-making' (Rydin, 2003, p. 137), including alternatives that are more pro-business. Secondly, the pressure comes from 'environmentally conscious' waste industries which seek reform, for instance, of the planning system to enable more widespread use of environmental technologies.

Understanding the political-institutional framework conditions: the Municipal Solid Waste policy network

The network comprises several actors with many, often different and conflicting, but stable interests. There is a high degree of awareness amongst the actors of roles and strategies employed to influence the policy process. The governmental (both central and local) actors, strengthened mainly by authority and political legitimacy, show high awareness of the problem of waste *and* the low rate of success in resolving the problem. Waste management industries with a huge investment potential in waste collection and disposal services are organised into two broad

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[25] The Environment Council (1999).
[26] If the amount of household rubbish grows at the current rate nearly twice as many waste management facilities would be needed by 2020 (*A Way With Waste*, 1999).
[27] *Survey of Public Attitudes to Quality of Life and to the Environment: 2001* (DEFRA).
[28] Not In My Backyard (NIMBY).

categories: those supporting incineration vs. those supporting recycling and composting, including biological methods of waste disposal. The NGO sector with varied resources mainly lobbies against incineration. Table 7.1 lists the actors involved in MSW management in London and their resources and constraints. In addition, it highlights their 'position' in the network; being a policy community member implies a more direct role in the policy process.

Table 7.1: Policy actors, objectives, resources/constraints and influence over MSW policy process (adapted from Smith 1997)

Policy Actor	Objectives	Resources/Constraints	Network Member /(Policy Community)
UN	Ensure sustainable development	International repute and backing/lack of enforcement and monitoring resources	No (No)
EU	Ensure EU-wide sustainable development	Legal obligation, power to sanction/open to influences (members & others)	Yes (Yes – only as an external actor)
CO/ SU/No. 10	Re-election concerns & to ensure sustainable MSW (under EU pressure)	Legislative authority; reorganise departments/lack of resources to monitor, reliance on local government for implementation	Yes (Yes)
Treasury	Formulates financial & economic policy	National financial body, enforcement powers (through Public Service Agreements)/lack of independence	Yes (Yes)
DEFRA	National environmental executive agency	Formal authority over waste management under environment/low staffing levels, inability to ensure sustainable MSW strategy	Yes (No)
DTI	Represents industry	Influence based on economics/pressure from EU & others for inclusion of environmental objectives	Yes (Yes)
EA	National watchdog with prosecution rights	Autonomous body/open to 'regulatory realities'	Yes (No)
ODPM	Planning for sustainability in waste management	Responsible for national planning/local government implements the guidelines	Yes (Yes)
London government (GLA & Mayor)	Responsible for London Waste Strategy	Direct legitimacy, re-election/many other priority issues	Yes (No)
Local authorities	Collection & disposal responsibilities	Directly elected with statutory basis for waste management/inadequate resources, especially financial	Yes (No)

Policy Actor	Objectives	Resources/Constraints	Network Member /(Policy Community)
Households (Local community organis-ations)	Least-cost/effort collection of waste	Voters, right to court/lack of environmental awareness, NIMBYism	Yes (No)
Environ-mental NGOs	Greater access to information, tougher standards	Ability to mobilise public support & highlight environmental excesses by state & industry/resource constraints, NGO politics	Yes (No)
Waste management Industries	Influence legislation (present & prospective)	Economic legitimacy to contribute/regulation	Yes (Yes)

Relationship between levels of government

While central government directs MSW policy, its implementation falls within the remit of local government. Existing legislation allows local government to determine the details of collection and disposal, like the kind of receptacle from which to collect household waste. However, 'local government wants to do what they think is the right way to deal with issues and central government wants to impose solutions' [15]. This creates friction between the local authorities and the ODPM, for instance. Some local authorities complain that the recycling targets are too high, thus favouring only those local authorities with a good record already, and should be set against the background of growing waste [10]. Resentment about receiving directions from above is especially strong when it is not accompanied with the necessary support to ensure successful implementation. *Waste Strategy* 2000 is a good example, setting targets that need to be achieved by local authorities but offering no support, in particular financial, to help them meet those targets. It contained statutory performance standards for local authority recycling in England to meet the targets.[29] Spending nearly £1 billion annually on the management of household waste (Audit Commission, 1997), local authorities could face an even bigger resource crunch when they pursue new obligations to introduce recycling of at least two materials by 2010 under the Household Waste Recycling Act 2003. According to [22], local authorities are constantly hit by surprises, and even where funds are available, it is good if you are one of the winners, but a lot of

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[29] These performance standards are part of the Best Value framework which requires local authorities to set challenging targets to improve waste management services.

local authorities are not successful, and funds become 'challenge funds', with local authorities
bidding for allocation.

Apart from financial support, local government looks to central government to take action in the
following areas: reducing the level of packaging and other materials that enter the waste stream;
developing, as a matter of urgency, new markets for recycled materials, exploring incentives to
encourage reinvestment of recycling credits and landfill tax credits in improvement of waste
management services including recycling [3, 3a]. Though organisations like LARAC, ALG and
others exist to channel local government influence, they are quite inadequate and often under-
utilised. In fact, one interviewee was doubtful of the GLA's role. According to [1],

> It is worrying from my side: what we need is guidance/support not to set
> standards which do not reflect local realities, not to be a bureaucratic system of
> civil servants. It [the GLA] should facilitate a supporting role. Mayor is not
> essential. Personally, it only goes to increase the bills in an attempt to support the
> Mayor and the whole organisational set up. The council tax has gone up to
> maintain that.

There were no regular and open channels of communication between DEFRA and the local
officials, which contributed to a lack of information. They were unclear of the sanctions that
would ensue if the statutory recycling targets were not met. Besides, not all were directly
consulted prior to the *Waste Strategy* [1]. According to [5], 'DTI as government operating at
national level is concerned with strategic work rather than local issues [...] there is no time to be
involved in local issues'.

At the local level, ODPM is a powerful player [10]. Its Planning Policy Guidance 10 (on waste
management) provides clarity on what is required to ensure that decisions are made at the most
appropriate regional/local level and in a timely fashion that delivers sufficient opportunities for
sustainable waste management.[30] It is in this context that the Landfill Directive expects
responsibility for delivery [....] from the local authorities [for] getting the public to participate
[20].[31] Therefore, the bureaucrat [20] was of the view that the local authorities responsible for
implementation should design the strategies it regards as the most effective. This would also
ensure clarity amongst the local government staff regarding details of policy. Thus, central-local
government relations can be described as largely strained.

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[30] ODPM (www.odpm.gov.uk accessed 18 June 2004).
[31] See Rydin (2002) for a good brief on strategies for promoting public participation.

Relationship between government departments

UK policy on the environment involves many different central government departments, yet relations between them are difficult, with competing hierarchies of decision-making and lack of communication. Though DEFRA is the department responsible for environmental issues, it is often superseded by the Treasury and DTI in directing policy. Some departments not responsible for the environment are more influential in the development of environmental policy in the UK [7]. The policy process is 'overwhelmed by the Treasury' [23]. Furthermore, departments fail to inform one another [20, 21]. The fridge crisis, for instance, was caused because the 'connections were not made with relevant industry capable of recycling fridges (by DEFRA) [21]. According to [21],

> Had the government talked to other parts, [this] clearly would have been resolved [....] Probably not! DEFRA and DTI were at each other's throats for the misunderstanding. There was an agreement to deal with it later. There might be a capacity issue. Now if a Unit had been in DEFRA not every body would be sitting in it [and] [....] there would still be need for liaison. There is bad communication/bad advice amongst departments, apart from not looking ahead enough.

Also, [20] stated that:

> The responsibility was entrusted to three departments: DTI, DEFRA and ODPM [....] [which makes it] more difficult for the new targets to be achieved. To get the three different departments involved is like involving three different players.

Gummer (2002, p. 19) sums it up when he states that:

> [....] DEFRA has proved to be a failure institutionally. It lacks the clout that it had when part of a great Department of State with the levers of power deriving from Planning and Local Government. It is easily ignored and just as easily blamed.

The SU supports the CO to achieve the inter-departmental coordination necessary for a substantive policy on the issue of waste.[32] For the period of a commissioned project, it thus 'links up to everyone who is relevant, but this is not a permanent link' [14]. Either DEFRA or DTI can lead on a policy issue, depending on which department has the highest interest. For instance,

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[32] See Brockes (2002) who states that central government plays a huge coordinating role in environmental policy legislation and implementation.

DEFRA leads on MSW policy in the light of EU Directives,[33] while the DTI, focusing on the interests of industry, took the lead on the Waste Electrical and Electronic Equipment (WEEE) Directive.[34] This arrangement of taking leads in EU negotiations came about for historical reasons, 'which is not a bad thing as it practices "joined up" government [because] to liaise is better' [5]. DTI ardently avoids placing unnecessary burdens on industry pushing for implementation proportionate to what can be called 'gold plating' [5]. The DTI's impact on public life has been more than most government departments; indeed the department has had 'a finger in almost every administrative pie'.[35] The ODPM, with its overall responsibility for planning, decides the guidelines for waste planning.

However, the Treasury emerges as the most influential actor, deciding not only the budgets of DEFRA and DTI, but also establishing their priorities through Public Service Agreements (PSA).[36] The Treasury perceives MSW policy as a 'difficult issue' which makes it important to 'give certainty to business and not to over-burden it [....] because a decrease in profits would result in a decrease in tax which would then lead to a decrease in revenue for the government' [11]. Further, it generally has the last word on introduction of taxes/charges. For instance, WRAP, responsible for developing markets for recyclables, will 'need to approach the Treasury for the ultimate decision of introducing a tax on use of virgin materials' [11].[37] A Report by the Environmental Audit Committee of the House of Commons (2003) concluded that the Treasury's behaviour over the Landfill Tax, and the absence of any further environmental measures in the Budget, reinforces the view that it remains timid in its use of fiscal instruments to tackle environmental issues (para 62). The Treasury also blocked the SU from introducing measures to

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[33] Though in connection with the Landfill Directive, the DTI had problems with the waste acceptance criteria. The deadline for the Landfill Directive wherein co-disposal of hazardous waste is not allowed is fast approaching...yet another example that despite the deadline, the waste acceptance criteria is up in the air, and the charges for different materials going to landfill are yet to be determined [18].

[34] Bureaucrat [5], states that 'my emphasis has always been on trying to encourage work that is helpful for industry, as [per] DTI objectives'. According to [21], DEFRA is the custodian for sustainable development strategy. All government departments have signed up to that. DTI has its own sustainable development strategy; at departmental level there is the high level aim about prosperity and competitiveness. Sustainable development as a priority sits within that context whereas DEFRA has the responsibility for achieving that overarching goal'.

[35] DTI (www.dti.gov.uk/about_dti_history.html accessed 5 March 2004).

[36] Spending review 'holds huge importance, not just in terms of what government departments are able to spend but also for the direction of the government's political strategy....But critics say that the new procedures – especially the agreements that departments now have to sign with the Treasury outlining their performance targets – give too much power to the Treasury, and the chancellor, to centralise power' (BBC – What is a Spending Review?, 12 July 2002, http://news.bbc.co.uk/1/hi/business/2042420.stm accessed 20 August 2003).

[37] www.wrap.org.uk (accessed 10 August 2002).

restrain incineration because it wants to keep incineration as a low cost option for dealing with residual waste.[38] Its significant role is substantiated by the SU's report *Waste Not, Want Not* (2002) which recommended the creation of a short-term Ministerial Group to report jointly to the Secretary of State and the *Chief Secretary to the Treasury*.[39] As a corollary, the Treasury can be a positive force supporting sustainable waste management.

There are a few instances of formal collaboration amongst departments. For example, the then DETR introduced joint collaboration schemes with DTI such as ENVIROWISE, Global Action Plan, and others.[40] The DETR also set up a Market Development Group to highlight ways to make the market for recyclates more competitive. The DTI publishes various studies conducted to identify constraints on recycling, for example, the Waste Paper arisings and Recycling Rates (2002).[41] The departmental reorganisations (for instance, creation of DEFRA) were occasionally accompanied by the re-launch and introduction of a multiplicity of inter-departmental schemes. The WRAP set up in 2001 (as part of the Government's *Waste Strategy* 2000) introduced as one of the 'key mechanisms for delivery [....] commitments in the *Waste Strategy*'.[42] Supported by DEFRA and DTI, it operates as a not-for-profit company and is an important part of the government's plan to deliver the waste strategy and recycling targets.[43]

However, both the DTI and Treasury were individually rated by the interviewees as more influential than DEFRA or such collaborative schemes on the development of the MSW policy in the UK. Besides, DEFRA is a relatively new department with economic interests well entrenched through the DTI and Treasury [10].[44] This complicates the inter-departmental relationships, which also lack coordination and are wrought with conflicts in objectives.

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[38] FOE (2002) *Government Waste Strategy: Treasury keeps waste fires burning*, Press release (27 November). (www.foe.co.uk/pubsinfo/infoteam/pressrel/2002/20021127175826.html accessed 2 December 2002.

[39] The Group was responsible for developing public expenditure programmes and institutional arrangements needed to implement the report's recommendations (*Waste Not, Want Not*).

[40] See Pratt and Phillips (2000) for details on waste minimisation clubs initiated under ETBPP, with industry, and their role in correcting market and information failures.

[41] DTI (www.dti.gov.uk/sustainability/downloads/paper.pdf accessed 5 August 2002).

[42] Former Environment Minister, Michael Meacher in 'New Waste Management Program Launched in Britain' (November 29, 2000), EarthVision Environmental News, London.

[43] www.letsrecycle.com *WRAP: Waste and Resources Action Programme*.

[44] 'Some of you I know are sceptical about the creation of my new Department. Some suggested we had simply been rebranded, like a baked bean manufacturer who sticks a brighter label – a green label – on his tins, but does nothing to improve the quality and taste of the contents. I think you're wrong [....] We have to make you wrong' (Margaret Beckett, Secretary of State at DEFRA, quoted in www.letsrecycle.com 27 October 2001 *Beckett waste summit welcomes by ESA*).

Government departments' resentment towards the EU

A notable feature was a degree of resentment in the departments of DEFRA and DTI, in particular, towards the EU. It was said that EU legislation on waste, unfortunately, tends to be determined or especially influenced by Scandinavian countries, at least on this particular policy area [21, 4, 5, 16], because the EU expects other member states to achieve higher, Scandinavian, levels of targets. Further, the EU approach was inappropriate:

> For instance, DEFRA led the negotiations on the Landfill Directive, which was a flawed Directive with fundamental problems and required self-regulation of waste, and divides waste into hazardous/non-hazardous, inert/non-inert. However, the UK practices co-disposal, and have instituted safe practice to do that [....] but with the new system it will be a melting pot [....] waste will be stored in perpetuity. The query was where to store that? We had to argue that, the EU members did not understand the process of co-disposal [5].

There has been talk of strengthening the influence of the UK on policy processes at the EU level [5, 21].[45] In fact, this concern found expression in the 47th Report (2003) of the Select Committee on the EU of the House of Lords, which focused on the EU Waste Management Policy. It stated that the UK has a poor record in influencing EU waste policy, and that it needs to operate at a more strategic level and not just react passively to legislative proposals from the European Commission. In inviting evidence from witnesses, the Committee put the question to them: could the UK be more pro-active in influencing the development of EU policy?[46] As [11] (government) stated, 'business is weary of over-regulation, weary of EU Directives and also of how they are negotiated in Brussels'. Further, though the legislation comes from EU and is transcribed into UK legislation, this process is 'not quick enough, not clear enough' [18].

Governmental arrangements for scrutiny

An interesting feature of the network is the in-built mechanisms for scrutiny. For instance, the SU's Report *Waste Not, Want Not* was a scathing attack on the government's waste strategy and recommended ways in which its implementation could be improved. However, overall the recommendations failed to break new ground and 'to implement the framework that allows other

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[45] In a similar vein, Weale (2003, p. 304) maintains that 'for some time the British government has also held up the process that eventually led to the Montreal Protocol, to the Vienna Convention and an international agreement to phase out the use of chlorofluorocarbons'.
[46] The *Minutes of Evidence* provide an interesting insight into the views of the diverse actors.

players to act' [7].[47] It fell short of recommending distinct ways in which to ensure a more consistent management of different actors and their interests.[48] At the local government level, the Environment Scrutiny team of the GLA, responsible for achieving coordination, organises meetings between the Environment Committee, ALG, the GLA and others [19]. The GLA has contracted work to a consultancy to determine London's *Waste Strategy* progress and to identify the ways to improve implementation. But despite this apparent system of monitoring, the government is largely unable to ensure environmental sustainability in waste management. Furthermore, the local officials were unaware of this role of the GLA.

Relationship amongst the actors

There are different avenues to determine the relationships amongst the stakeholders. The government officially consults the different stakeholders. But how do the stakeholders perceive the process and its consequences? The mutual perceptions amongst the actors are also examined here.

The UK government is widely seen as consulting different stakeholders on drafts of policy documents apart from reviews. For instance, the government's consultation paper *Less Waste: More Value* (1998) sought widespread feedback from stakeholders towards a national waste strategy. According to [20, 21], government consultations with industry in the UK are 'regarded as one of the best in Europe'. However, there are widespread reservations. 'The government consults; on that front it is active [....] how much it listens to is debatable' [17].[49] However, despite this view, consultation is regarded as the 'right way to go [....] because the planning system has to regard local peoples' wishes' [22]. A change or reversal of this process towards the French system is unlikely. DEFRA itself was launched with 'the promise of putting genuine participation and partnership at the heart of its work, however despite some promising signs it still has a long way to go' (Colbourne, 2002, pp. 20-21).[50] According to [4a]:

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[47] Also in 'Waste Not, Want Not: a collection of responses to the government' (2003), Green Alliance, London.
[48] Further, the measures taken by each party: local government, regulators, producers, waste managers need to be implemented in an integrated way (Coe, 2003).
[49] [17] is from the NGO sector.
[50] In a similar vein, Harris and Robinson (2002, pp. 24-25) maintain that the 'call for a public debate is the government's get out clause in a crisis'. They raise the questions: *where do these 'public debates' take place? Have you ever been to one – or met anyone who has?* They recommend the Integrated Policy Design and Delivery Process (ID2DP) as a generic model that seeks to show how national, public decision making could be more consensual, better informed, more accessible and more efficient.

> One of the difficulties of dialogue process is ensuring that every voice is quite properly heard as equal, how can one have the right balance? Where there is no right representation you get a skewed answer [....] Impossible to control unless you become very formal [....] I felt that government departments had a very low profile when they were represented. They didn't really participate. No real government view was expressed and forthcoming. The impression (they gave) was 'we want to hear what everybody else said.' Did leave the view that stakeholders weren't having an impact on government thinking. A lot of [government] people but actually it was not going to make one jot of a difference once the process is over.

Furthermore, the government did attempt to reform planning, and abolish public inquiries for infrastructure projects, like airports and roads.[51]

At the broader level, it is interesting to study the results of the evaluation of the National Waste Dialogues (NWD) organised by The Environment Council (TEC) between 1999 and 2002.[52] One question in the evaluation was whether it was appropriate that the public were not involved as stakeholders in the NWD. A bureaucrat [5] stated that it is 'extremely difficult to involve the public at that stage [NWD stage, because] perhaps they would be more interested in local issues than broad strategy discussions'. A private sector representative [4a] agreed with that view, adding that 'if lots had come it would have been reduced the value of the dialogue between the so called experts, [besides] if there were people of particular interest it is possible that their representatives were there anyway, [for instance] Greenpeace was there'. Interestingly, the representative from the NGO sector [7] also agreed with this view: 'the debates were on strategic policy issues. The public are entitled to get involved, but this was an expert audience.' In fact, there was strong agreement (82%) with the decision of the NWD not to involve the public.[53] Interestingly, in spite of the implicit ambition in Phase 1 of the NWD to be the 'uniting initiative to bring all parties together to talk, discuss and resolve these issues (TEC, 2001), not one questionnaire respondent in the present study felt that the NWD was central to the wider context (see Warburton for details). In fact, 50% of respondents felt the NWD was simply marginal or

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[51] According to Perret and Wilson (2002) this can only mean a return to confrontational protest. The intended reform was not successful.

[52] TEC also organised the evaluation exercise. Apart from undertaking extensive literature review, the project findings are based on 17 detailed interviews and questionnaires to 107 people (with a 21% response rate). I was involved with TEC's evaluation project and interviewed three participants of the dialogues. I have explicit permission from TEC to use statements from those interviews. Furthermore, I interviewed these participants at a later date for the purposes of my own research.

[53] See Warburton (2003) for details. She was the principal researcher for the project.

one of many debates on the topic, although one commented that it was naïve to expect anything else.

In addition, 'waste planning is part of the local government initiative' [21] which places the onus on local government to ensure consultation on a planning application. There was no strong presence of local community groups/NGOs in the three Boroughs [1, 2, 3a].[54] One exception was the protest organised by Greenpeace largely behind the government's decision to reject the expansion of the existing Edmonton incineration plant (see Annex 7a for pictures of the protest).[55] Also, GAIN, an organisation that campaigns against incineration, was mentioned during the fieldwork:

> In September 2000, residents were made aware of a planning application and proposal to build an incinerator in Guildford. An almost clandestine mode of publication and consultation prompted a vast cross-section of the population of Guildford to join forces and form the Guildford Anti-incinerator Network [25].

This brings into question the process of consultation adopted. Two interviewees mentioned France as an example where the state works more vociferously towards implementing what it regards as national priorities [20, 21]. Some interviewees [21, 22] were of the opinion that consultation adopted by the planning system slows down the process of creating the infrastructure needed for managing waste:

> The consultation issue is interesting because [the] UK planning system is very consultative [....] waste planning is part of that local government initiative. The local residents have wised up to how to use the planning system to stop things from happening [....] [which] creates problems in creating infrastructure for waste. In France, the planning system is more directional. If [the] French are going to build a railway line, they use the argument that it is in the interests of national objectives and pay compensation etc., and just build it [21].

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[54] The Centre for Environmental Initiatives was one community organisation mentioned in the interview in Sutton. Though its website (www.thecei.org.uk accessed 10 June 2003) states that it is an independent community organisation run by local people, the interviewee stated the local council sponsors it [2]. Amongst other projects, it provides information on recycling facilities in Sutton.
[55] See Greenpeace -
www.greenpeace.org.uk/contentlookup.cfm?CFID=3879554&CFTOKEN=16232420&SitekeyParam=D-D
& LondonWaste – www.londonwaste.co.uk/shownews.asp?/ID=137 (accessed 12 January 2005). It was only found out later that the Mayor, Ken Livingstone had backed calls not to expand the incinerator plant (Greenpeace (2001)
www.greenpeace.org.uk/contentlookup.cfm?ucidparam=20001010150236&CFID=1044260&CFTOKEN=
accessed 20 January 2005).

Making a distinction between the political and administrative branches of the state, [23] asserts that:

> There are mind-set problems in civil service, with civil servants in key positions not being environmentalists [....] so many millions of pounds [are being directed] towards subsidies instead of putting on a good system, like in Germany. When standards have proved stupid, we are going to point out error of ways. Civil servants do not like that!

The Local Government Act (1988) extended Compulsory Competitive Tendering (CCT) to waste collection, and thereby institutionalised interactions with the private/NGO sector in the provision of waste services. However, the division of local authorities into Waste Collection and Waste Disposal Authorities (WDAs) deterred waste management companies from entering into contracts with WDAs because of lack of guarantee that the Waste Collection Authorities would provide appropriate waste.[56] However, the three Boroughs had contracted out waste collection and disposal services to various private firms. As stated earlier, the waste industry comprises two distinct, polarised groupings: (1) those that support biological methods of waste disposal (pro-regulation and use of economic instruments) and (2) pro-incineration. The first group, as represented by [23], regards the Cabinet as exhibiting a 'phobia' about upsetting industry. Similarly, DEFRA is 'not bold enough' and the Treasury is 'not adventurous enough' [23].[57]

> [The] moment once DTI senses an environmental regulation threat, it marches and takes an interest and control. *Waste Strategy* should be part of an industrial strategy. The government toes particular lines. There is in general 'blinkered thinking' [23].

'What we ask for is fair and consistent legislation which is transparent and promotes growth of industry' [13]. For its part, the representative of the incineration company interviewed [4a], maintained that 'with waste management you cannot set off with the risk of failure. For example, it is no good closing down landfill - an unattractive but practical option unless you have alternatives already in place and operating effectively. Too much lack of reality about closing down certain options assuming other options are easily available, just in time to replace them'. In addition, opinions about waste management and recycling in particular seem to vary across the wider market. For instance, TESCO asserts that a tax on plastic bags is a 'headache', and that

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[56] Environmental Audit Committee Report (2003). In addition, it states that this perhaps explains why the majority of Private Finance Initiative deals in waste have occurred in Unitary Authority areas.

[57] One respondent in the TEC Evaluation project stated that 'Defra is not Government'.

converting used plastic bags into traffic cones is the way forward, after receiving an award for initiating a plastic carrier bag recycling scheme.[58]

Within the group of NGOs interviewed, perceptions of each other and their attitude to other key players contributed to how the environmental campaign progressed. For instance, one NGO, regarded as mainly radical, was said to 'want a "gold-plated" solution tomorrow' [20]. Thus, even within the NGO sector, it was regarded as too extremist.

> The more sensible the approach, the more accessible people are [....] [however] [....] some use the radical and aggressive approach. If [point] A to F is achieved some NGOs appreciate the government's efforts [....] [while this organisation] tends to focus on what has not been achieved i.e. A to Z, with no appreciation of governmental efforts, however small [7].

Another NGO's strategy was to appreciate whatever little the government accomplished, in the hope of persuading it to gradually set higher targets. Therefore, to a large extent, though immensely popular in public, the radical NGO was not the most 'listened to' within the policy circle. In addition, some NGOs, for example the FoE, regard the government targets as too unambitious and suggest recycling targets of 50% by 2010, 75% by 2015 with the ultimate aim of zero waste.[59] Further, that the 'imminent EU legislation was largely ignored while other EU countries got on with it once they decided to do something' [7].

Householders form another group of actors. Their attitudes towards waste are generally a reflection of their 'socio-economic' profile (DETR, 1999d). People living in comfortable boroughs are more receptive to recycling initiatives than in poorer ones. According to [16], culturally there is no pressure for change in the UK.[60] In general, the public is sending a 'confusing message' in terms of their priority for the environment [20]. There is also a perception that waste is a problem that the government has to resolve ([1a, 2a], CO 2002a)[61] with the public being 'highly schizophrenic when it comes to waste' [20]. In addition, the interesting reasoning that came out from the householders [in the National Waste Dialogue] was:

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[58] www.letsrecycle.com 'Waste Management News: Tesco urges more recycling rather than levy on plastic carrier bags' (14 April 2003) and 'Waste Management News: Supermarket chain commended on plastic bag recycling' (13 June 2002).
[59] FoE press release (26 November 2002).
[60] The same interviewee also thought that cultural reasons explained why some (EU) countries are more (environmentally) advanced.
[61] However [1a] also stated that 'people need to be made responsible.'

> The local authorities make money out of recycling, so pay us to recycle. Obviously, there is still a lot of misunderstanding, misconception etc. [....] [they] do not understand what they pay [for] [....] they assume that they are paying £200-300 [a year] for recycling to the local authorities, which in actual fact can be as low as £100 or below [20].[62]

Thus, the householders can have misconceptions regarding waste management despite the awareness initiatives by both the government and NGOs. There are various elementary barriers to awareness, for instance only around half of those households with a kerbside collection scheme are aware that this is available to them (CO, 2002a). The education and environmental awareness component is higher in the EU at large than the UK, and 'it would need a generation to go through before any change can be achieved' [20]. The public attitude survey conducted by DEFRA showed a decrease in the recycling rates, especially of cans and bottles (see Annex 7b and 7c). The most common reasons for not recycling regularly were location of recycling facilities too far away, lack of storage space and no kerbside collection.[63] Among respondents aged 18-24 a lack of time or desire was more often mentioned than by other age groups. The 2002 Review by the CO found that waste was not at the forefront of their minds, and the salience of waste issues can be increased through association with other global and local environmental issues, like climate change, street cleaning, etc.[64]

Of interest is the finding that the majority of the public believe the UK's recycling performance is poor in relation to European counterparts, leading to a desire to 'catch up' and learn from best practice. However, it also drew attention to the adverse side effect of the 'recycling good/landfill bad' message on waste minimisation; people do not feel it necessary to call on/require manufacturers to reduce packaging if they are able to readily recycle.[65] Therefore, despite the availability of information from diverse sources, there is insufficient clarity, awareness and inclination towards sustainable management of waste amongst the public. This is, in part, also a

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[62] One of the recycling 'myths' stated by one in three, is that they do not believe the council recycles all of the materials collected (CO, 2002a).

[63] DEFRA (2001) Survey of Public Attitudes to Quality of life and to the Environment. (www.defra.gov.uk/news/2002/021009c.htm accessed 17 June 2002). 'The public are unaware that alternatives of composting and recycling do not require any new additional infrastructure at the home level. [....] I bought a composting bin at a discount from the council, and take the recyclables to the supermarket every weekend' [20].

[64] Interestingly, it states that because it is based on a small cross-section of the public, the findings are illustrative and indicative, and not statistically representative; attributable to the *participants* rather than the *public* (CO, 2002a).

[65] See Brockes (2002).

reflection of the inadequacy of the awareness initiatives rather than just the lack of priority for the environment amongst the public.[66]

The core and periphery

After a brief overview of the features, the policy network can be divided into two distinct constituents: the core and the periphery (see Figure 7.1). The most active, influential and assertive actors during policy formulation and reform constitute the core. These are also the actors with the resources of authority, money, political legitimacy, more control over information and organisation. The periphery comprises those actors whose impact is limited or contained and, to a large extent, managed into particular directions. Statements from the actors corroborate the evidence from secondary sources and existing literature regarding their position in the network.[67] Core actors as a group are quite independent of others in the network. Since they dominate an issue and its definition, these actors are able to direct or manage other influences in line with their position. This ensures and depends on a certain degree of insulation from external influences, making it a closed policy community. This, in effect, cements their independence from other actors in conditioning policy.

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[66] Only one interviewee [25] maintained that there is a high level of awareness, with residents only too eager to participate in recycling schemes.
[67] With one exception: though the Guardian Report (Hencke and Parry, 2000) maintains a huge role of the ESA in the Landfill Tax regulations and LTCS, the field work did not reveal substantial evidence to include the ESA as a core actor.

Figure 7.1: MSW policy network in London
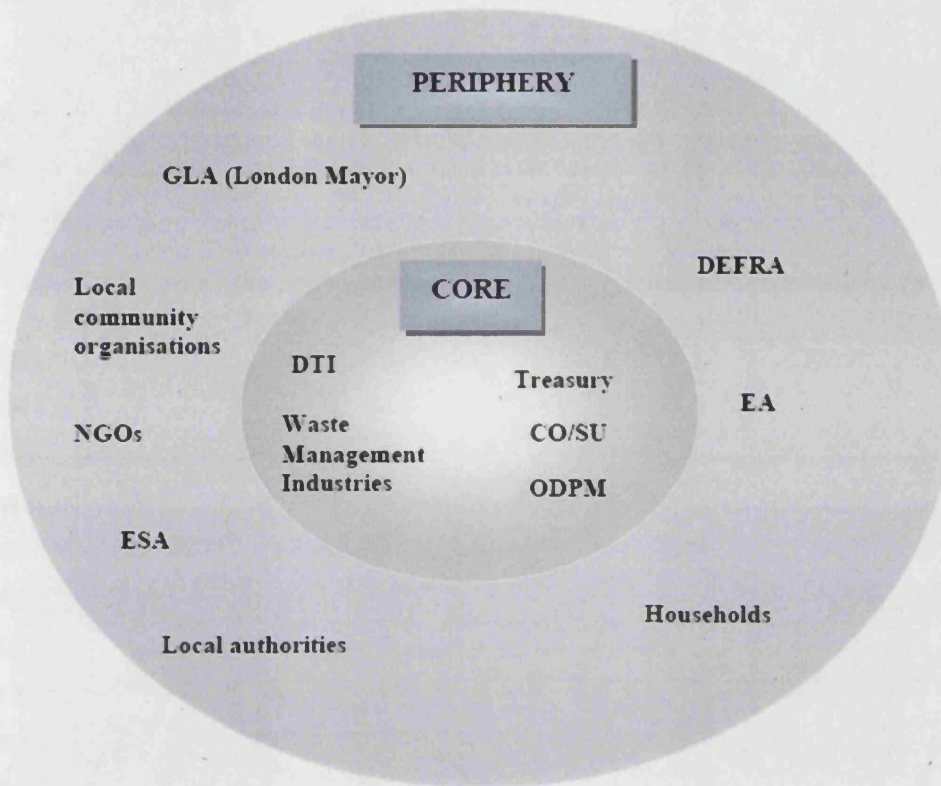
CO=Cabinet Office; DEFRA=Department for Environment, Food and Rural Affairs; DTI=Department of Trade & Industry; EA=Environment Agency; ESA=Environmental Services Association; GLA=Greater London Assembly; NGOs=Non-Governmental Organisations; ODPM=Office of the Deputy Prime Minister; SU=Strategy Unit.

The core exhibits characteristics of consultation which helps confirm legitimacy and openness of the input processes. However, although there is consultation, the decisions usually reflect the views of the core rather than incorporating the views of the periphery. In other words, though there are channels to articulate diverse interests, the policy reform does not take into account this diversity, representing instead the preferences of the core. For instance, some are frequently consulted either in open forums or in Parliamentary hearings. This indicates a high level of interaction amongst the actors. However, as this research found, a core policy community actually decides on the direction and content of policy. Furthermore, the members closely guard the core, in pursuance of which they often bring the others into disrepute. According to [24]:

We will talk to anyone prepared to listen, but unfortunately many have closed minds. Accusations of scare mongering, intimidation, hijacking debate and spreading misinformation tends to be the response to logic and concern.

Receptiveness to the peripheral actors is, thus, restricted to acknowledging and consulting them but the final policy documents represent a diluted version of the consultation [5, 7, 17]. For instance, the final draft of the Household Waste Recycling Act 2003 decreased the initial target of 50% recycling by 2010 to 30%.[68]

Interactions amongst the actors were embedded in daily routines. Interviewees (government, industry, NGOs) were able to identify the other main constituents of the network *and* their policy positions. These roles are lucid and more importantly *consistent* to the participants, for example, the leanings of an industrial lobby organisation towards waste-to-energy plants as viable alternatives to landfill.[69] This consistency establishes and affirms the friction-less functioning of the network. Over time these relationships get both entrenched and more obvious. For instance, the ESA is consulted regularly by both DTI and DEFRA. In fact, there were huge concerns raised in *The Guardian* Report (authored by Hencke and Parry, 2000) regarding the influence of the ESA over the Environmental Trust Scheme Regulatory Body (ENTRUST) and the formulation of the Landfill Tax Credit Scheme.

However, this clarity in interaction is insufficient in itself to guarantee an efficient and pro-active response to legislation from the EU because it also helps to perpetuate the closed nature of the network and the policy option preferred by the core. The evidence is not only in the process of policy but also in policy content. The European Waste Framework Directive set a minimal framework for waste management and resource use in 1975 however it was not until 1990 that the EPA partly transposed the Directive into national legislation (Gervais, 2002). This institutional embeddedness of these interactions makes consideration of other alternatives that require a different institutional arrangement, like recycling and composting, more challenging.

In sum, the core policy community in London is highly integrated with stable relationships between members, continuity of the relationships, restrictive membership (especially of actors with challenging views), clear interdependence within the core of the network and insulation from

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[68] See Letsrecycle.com (www.letsrecycle.com/legislation/household2.jsp accessed 19 October 2004).
[69] In fact during the interview [13] any mentioning of 'incineration' was politely corrected to 'energy from waste.'

other networks. Mutual perception as representatives of clearly defined interests is high. How does this impact on the institutional responsiveness to the pressure for environmental sustainability in waste management?

Responsiveness: anything but effective Municipal Solid Waste policy reform

Recognition of the MSW problem

Official recognition of the problem of MSW in the UK has been considerable, as mentioned in Chapters One and Six. The then Environment Minister, Michael Meacher admitted in 2000 to Parliament that the recycling rate was 'pathetically low'.[70] The House of Commons (Environment, Transport and Regional Affairs Committee) Fifth Report in 2001 also expressed disappointment 'that waste management in this country is still characterised by inertia, careless administration and *ad hoc*, rather than science-based decisions'.[71] It goes on to assert that no clear policy has emerged to reduce waste. While central government has lacked the commitment, the local government has lacked the resources to 'put a sustainable waste management strategy in place.' The SU Report *Waste Not, Want Not* lists the following reasons: responsibility for waste management is split between a number of different government departments, making coherent policy-making difficult; and between tiers of local government causing inefficiency between collection and disposal authorities. Furthermore, obtaining planning permission for waste facilities can be difficult and time-consuming. Local people concerned about noise, pollution, traffic and effect on house prices often oppose such facilities. These reasons were also mentioned in the interviews conducted in London. The bureaucrats cited lack of political will and an overall apathetic public as reasons for the slow response, including failure to provide resources. The industrialists mentioned immense confusion in government circles and lack of planning reform. The NGOs stated both lack of political will and dominance of economic interests.[72]

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[70] The Planet Ark (25 January 2000).
[71] Website: www.publications.parliament.uk/pa/cm200001/cmselect/cmenvtra/36/3602.html (accessed 12 April 2003).
[72] One interviewee, who also heads a body of local government, believed in exception to the general findings, that 'recycling is very popular with the public' [20]. According to her, 60% recycling was achieved in her council mainly because she has a 'get on with it' attitude.

Organisational and policy initiatives

Organisational initiatives include the creation of DEFRA, attempts at improving inter-departmental coordination, and ensuring compliance by local government. The machinery of government can sometimes be rational, sometimes open and sometimes pseudo-rational with the Chief Executive (of the borough) often doing what he wants [21]. Rural problems were high on the government's agenda and the objective of creating DEFRA was to ensure a way to get the farming industry to be more environmentally concerned and to create rural diversification beyond farming [21]. Also, transport was moving up the agenda, including the growing realisation that the new transport agenda was a mess [21].[73] With the creation of DEFRA, to that extent, the [MSW] policy got clearer [10] but otherwise, there was no identifiable direct impact on the policy [21]. Therefore, the reason for creating DEFRA was specifically to address rural and transport issues. In addition, there was considerable departmental restructuring undertaken by New Labour to ensure policy integration and 'facilitate joined-up thinking' (Rydin, 2003) in the mid- to late 1990s which impacted on this pattern. However, this 'joined-up thinking' was not realised to the extent planned. According to [23],

> The split and rejoining of departments was not effective to streamline efforts towards sustainable waste management. EA is at odds with DEFRA. DEFRA is short of good people [and] the pay structure implies a dead end. And DEFRA is over-influenced by the agricultural lobby, allowing farmers to burn plastics, etc.

This restructuring also faced entrenched departmental cultures which do not change overnight even when departments restructure (Rydin, 2003). Equally, the civil servants do not operate in a vacuum [that is separate] from the political process [21]. Further:

> If a government is committed to deregulation, there is no point in recommending something that will not [accept that recommendation], therefore, officials will look at things rationally but also politically [21].

At the local government level, the Mayor's Waste Strategy (2003) provides a more stringent approach towards action, and required all boroughs to introduce recycling collections from homes by September 2004, and to expand/improve recycling and encourage recycling by developing a rebate scheme as an incentive to recycle. Importantly, it suggested the creation of a single waste disposal authority for London to coordinate waste management. This is in line with the recent

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[73] Also see Rydin (2003, p. 92).

thinking amongst government circles for an inter-departmental/organisational Waste Unit, with overarching responsibility for waste issues [21].

Since 1990 there have been increasingly loud calls to achieve an integrated crosscutting approach to sustainable development policies. This found manifestation in, for example, the new position of 'Green Ministers' in all government departments. The government's overarching sustainable development strategy outlined in *A better quality of life: A strategy for sustainable development for the UK* (1999) set headline indicators to measure progress for all government departments. Other efforts at increasing inter-departmental coordination include the Standing Committee of Cabinet Ministers.[74] However, these were not mentioned in any of the interviews.

Various Acts have been passed by Parliament aimed at sustainable MSW management, mainly in recognition of pressure from the EU.[75] These have been briefly summarised in Chapter Six, for example, the EPA in 1990 made a hesitant beginning towards sustainability by requiring local authorities to *consider* recycling in their waste strategies. The White Paper *This Common Inheritance* in the same year set the *aspirational* target of 25% for the recycling of household waste by the year 2000. More recently the *Waste Strategy* 2000 (and the consequent Waste Summit 2001) implied the determined review and revision of waste policy as a direct response to the EU Landfill Directive.[76] It also states recycling (or compost) targets of at least 25% of household waste by 2005 (extending the year of the target in the White Paper), 30% by 2010 and 33% by 2015. The other initiative is the Landfill Tax Credit Scheme (LTCS).

The LTCS, introduced in 1996, allowed firms registered landfill site operators to contribute up to 20% of their landfill tax liability to environmental bodies approved by the Environmental Trust Scheme Regulatory Body (ENTRUST) in return for a 90% tax credit.[77] *The Guardian* Report on

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[74] The Committee drafted the first environment White Paper *This Common Inheritance* in 1990 and recognised the existing policies reflected largely divorced government departments. Though it was retained, it meets infrequently and in secret (Rydin, 2003).

[75] Other international influences also accounted for the policy shift. As Rydin (2003) asserts the Rio Summit (1992) helped place the concept of sustainable development on the forefront of the policy agenda. The BATNEEC was also introduced by the Act.

[76] 'The Waste Strategy 2000 is not so much a waste strategy but a strategy for complying with some of the requirements developed in the European Union. Even with that interpretation, it has still not proved effective in delivery' (Environmental Audit Committee, 2003, p.25).

[77] ENTRUST, The Landfill Tax Credit Scheme explained (brochure). Also www.entrust.org.uk (accessed 19 October 2003). ENTRUST was set up as a private company to regulate the scheme with a light touch designed to win over industry sceptics, however it became dominated by waste industry figures and carried out very few audits (Bowers, 2005).

the Landfill Tax and the LTCS, contained examples of manipulation of the Scheme and cases of Landfill Tax non-payment.[78] According to [8], who worked for an environmental body registered with ENTRUST, the scheme had always been criticised in its lifetime, people did not understand it, it was not structured, it was not transparent enough and that the landfill operators had too much influence over where the money was spent. Subsequently, mainly in reaction to the Report in the Guardian [8], the LTCS was reformed, with ENTRUST continuing to be the regulator of the scheme.[79] The system was simplified through a reduction in the level of information required from projects and improving audit/evaluation processes and through the use of commons systems wherever possible.

The slow transposition of EU legislation into national policies has contributed to the UK's low image within Europe, which is corroborated by noticeable voices of dissent closer to home. According to [23], there are four failures in the transposition process:

a. Fragmented (with DTI only getting interested if it is a threat to industry).

b. Combative and dilutive (DEFRA/DTI first reaction is – this won't happen, it won't happen to us, it will happen but not how the EU expect, it won't happen on time, let's delay it). For example, fridges, tyres etc.

c. One where no one takes ownership of outcomes (dilutive consultation is an opportunity to set retailers against manufacturers (WEEE), manufacturers against reprocessors (end life vehicles) and every one to dump on local authorities (batteries and WEEE)). It comprises one glorious game of 'pass the parcel' until implementation date.

d. Dogged by the subtle differences between English law (where the original working is crucial for prosecution and enforcement) and the European Napoleonic Code (where loose drafting is deliberate to permit a more relaxed 'spiritual' interpretation based on common sense enforcement).'

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[78] Authored by Hencke and Parry (2000).

[79] www.letsrecycle.com 'Senior waste MP warns of huge loss of funds in landfill credits reform' (3 April 2003). ENTRUST was the Environmental Trust responsible for administering the LTCS. According to [8], three main changes were announced (enforced in 2003): two thirds of the money for LTCS was passed to the government to distribute and spend on waste management, 6.5% of tax would go into LTCS and the rest of the 20% to the Treasury (with landfill operators funding only public benefit funds), and the 'olive branch' was to introduce a new category of funding of biodiversity projects (close to landfill sites but not necessarily public access) of benefit.

These sentiments were also echoed in varying degrees across most of the interviewees in London. Gervais (2002) reports that the European Court found that, as of June 1999 the UK had failed to implement parts of the Waste Framework Directive and, in particular, to draw up waste management plans covering the whole of the UK. As a consequence, the *Waste Strategy* was adopted in 2000 to define a new framework for waste management plans as well as to comply with the 1999 Landfill Directive, the 1994 Packaging Waste Directive and the 1991 Hazardous Waste Directive. However, the *Strategy* failed to provide mechanisms for delivery.[80]

The process is mirrored in waste legislation initiated elsewhere. A Private Member's Bill by MP Joan Ruddock became the Household Waste Recycling Act in 2003. It was backed mainly by pressure group FoE (also by Community Recycling Network and Waste Watch). The Act was however, a much toned-down version from its initial aim of 50% recycling by 2010 after more 'discussions' [15, 23]. The target is now more in line with the target of 30% recycling by 2010 set under the government's *Waste Strategy*. Similarly, though the *Women's Environmental Network* was able to initiate the Waste Minimisation Act (1998), which lacked more depth apart from 'clearing any legislative uncertainty about whether the councils could actually carry out initiatives to reduce the amount of waste (as opposed to recycle it).' It essentially allowed local authorities to initiate steps to reduce waste at its discretion. Placing no obligation on the local authorities to carry out such initiatives discourages them from imposing any requirements on business or householders in their area [22].[81]

Various policy instruments make incineration a more economically viable option. A Report in 2002 (by Hogg and Hummel) concluded that the legislative instruments currently in place generate economic incentives which, in relative terms, actively *discourage* recycling when compared with other waste management options. It goes further to state that no policy initiative introduces an economic incentive that makes recycling and/or composting the option of choice in the management of resources. In a scathing attack, it states that though there is a system of tax and tradeable permits designed to divert waste away from landfill, neither implies that the diverted waste will be recycled or composted, diverting instead to alternative waste options, like

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[80] Anglo-Welsh Audit Commission (www.audit-commission.gov.uk/ac2/NR/LocalA/wastemanage.htm accessed 20 December 2004).

[81] The Mayor's strategy on waste and the Household Recycling Act, should provide new basis for the local authorities to carry out more schemes.

EfW.[82] The Environmental Audit Committee's (of the House of Commons, 2003) Report concluded that there are insufficient drivers in place in the *Waste Strategy* to prevent it from becoming an 'Incinerator Charter'. It also states that, though the proportion of municipal waste sent to landfill is declining, but the overall amount sent to landfill is still increasing, and therefore, the UK is moving further away from the requirements of the Landfill Directive (para 33). The DETR (2001) itself acknowledged that the tradeable permits cannot *of themselves* reduce landfill, which can only be achieved by the sustained effort of local authorities to reduce waste and divert waste from landfill. With some waste industries lobbying for EfW, NGOs fear that this would force the government towards fast but short-term solutions instead of long term sustainable options of recycling and composting [4, 7, 17, 23]. The FoE has criticised the government for doing little to restrain the building of massive incinerators across the country. Removing the £50 million worth of subsidies given to incineration, adding an incineration tax and a moratorium on large-scale incineration were measures not considered by the government.[83] Furthermore, the lack of markets for recyclables along with growing waste volumes continues to be a major setback.[84] Regarding WRAP, [23] maintained that 'you do not need to develop markets for recyclables, [just] increase landfill tax!'[85]

In sum, the official response to sustainability in waste management is often 'insufficient' [7], 'isolated and fragmented [....] and a passive approach at lowest cost' [4]. 'The interesting thing would be to get an answer to the question of whether the maximum or minimum is being achieved' [7]. Strategies, in themselves, are piecemeal and lack a coordinated effort. For instance, as the ALG (2002) maintains, recycling is not simply the collection of materials, it must also involve the sale and reprocessing of those materials, which has proved to be the crucial weak link.[86] On a broader scale, waste policies have not been good [because] there is no link made between the energy debate and waste [23].

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[82] Additionally, it shows that whilst the multi-material collection of dry recyclables is more expensive than other operations, the collection and treatment of source separated bio-wastes is not as expensive an option as frequently portrayed [....] to the extent that the dry recyclables collections are more expensive, this is partly because existing policies make it expensive (p. 24).
[83] FoE Press release (27 November 2002).
[84] Despite uncertainty in the necessary markets for the collected materials, central to the success of recycling initiatives, work continues under *London Waste Action*. (www.letsrecycle.com 'Paper News: Export Market crucial as more paper is collected says BRPA president', 11 April 2003).
[85] However, [23] also maintained that 'subsidies do not let the market function; [you] cannot beat the market'.
[86] Lack of resources permits a reactive approach though the ALG has made efforts to develop markets for recyclates (see AEA Technology (1999) 'Developing Markets for Recycled Materials: A report' produced for DTI). *London Pride Waste Action Programme* (1996-99) successfully increased annual recycling and

Financial commitments

Financial commitments have often also been made to develop recycling programmes or develop markets for recyclables. For instance, the Prime Minister while launching the Sustainable Development Commission also announced the creation of the New Opportunities Fund with £150 million to help the environment, especially in areas of renewable energy technology, waste and improving local environments.

In the latest budget (2003-04), the government has backed away from a decision on bringing in variable charging for household waste.[87] Stating that more work is needed to be carried out in cooperation with the Local Government Association and other stakeholders into the practicalities and potential disadvantages of waste charging systems, the government categorically ruled out a national tax on household waste.[88] While the government is keen on producer responsibility/'polluter pays' the Treasury has repeatedly moved away from applying the principle to householders.[89] The budget was criticised by various organisations for showing clear intent to support more sustainable waste management but lacking in detail on funding, delivery and operational issues.[90] The criticism was echoed by [23] who remarked on the government having 'more ambition than substance' in its budget. According to him, the absence of any reference to enabling legislation in this finance act with regard to charging households for waste merely confirms the political fears this administration has when tinkering with environmental economic instruments.[91] Similarly, the increases in landfill tax to induce local authorities towards alternatives were regarded as 'still quite low' [7, 20, 23].

The 1997 *Statement of Intent on Environmental Taxation* stated that 'how and what governments tax sends clear signals about the economic activities they believe should be encouraged or

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composting levels from 8.6% to 12.8%, but waste generation increased as well resulting in a net increase in the amount of waste landfilled.
[87] www.letsrecycle.com - 11 April 2003 'Local Authorities News: Government still to decide on variable charging'.
[88] www.letsrecycle.com - 11 April 2003 'Local Authorities News: Government still to decide on variable charging'.
[89] However, the SU's 2002 Report *Waste Not, Want Not* recommended that councils be given the power to charge householders for their waste.
[90] The Chartered Institution of Wastes Management in the report 'Waste Management News: Waste management sector criticises the Budget for lack of certainty (11 April 2003) in www.letsrecycle.com.
[91] DEFRA defended its lack of clarification by insisting because of 'purdah' rules it could not announce new policies or projects that influence upcoming local government elections and that further policy details will be announced as part of its response to the SU's *Waste Not, Want Not* paper.

discouraged, and the values they wish to entrench in society [....] Just as work should be encouraged through the tax system, environmental pollution should be discouraged' (Treasury, 1997). However, the *Statement* also states clearly that environmental taxation must meet the tests of good taxation and must be designed to meet objectives without undesirable side-effects: it must keep deadweight compliance costs to a minimum; distributional impact must be acceptable; and care must be given to implications for international competitiveness. Where environmental taxes meet these tests, the government will use them (Treasury). Subjecting environmental taxes to these tests clearly watered down the intention which, therefore, remained 'merely a useful set of principles' (Secrett and Jenkins, 2001).

However the government has introduced reforms in some of its programmes. Treasury's reform of DEFRA's £140 million Waste Management Performance Fund, as a 'non-ring-fenced' fund for local authorities to improve household waste management, is one example.[92] Although this is regarded as too little by many in the sector [1, 4]. The Treasury had two direct and obvious responses to the pressure from the EU and the SU Report critical of the government's performance on recycling and other sustainable waste options [11]. The first was to raise the Landfill Tax, which was largely a political decision. The second was to set up a PSA target for DEFRA. The Green Alliance welcomed the Chancellor's statement that the landfill tax will increase to £35 a tonne but said that the rate of increase is far too slow. London Remade maintained that increasing Landfill Tax itself is not a solution to UK waste challenges, unless investment is made to develop recycled product markets, an area in which London Remade is breaking new ground, this will simply amount to another revenue-raising exercise for the Treasury.[93]

Conclusion

The general overview suggests that the UK government is slow in its response to EU Directives, largely unable to coordinate their transposition and implementation optimally. The 'fridge fiasco' is a case in point. Besides, the fridge crisis only reiterated the dire need for policy coordination at

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[92] www.letsrecycle.com 'Local Authorities News: Revenue neutral Landfill Tax Plan for councils in Budget' (11 April 2003). The operational details are yet to be finalised following a government consultation with local authority stakeholders.
[93] (Letsrecycle.com (2002) 'Landfill Tax rise is first part of government response to Strategy Unit', 27 November. http://www.letsrecycle.com/materials/plastics/news.jsp?story=1785 accessed 16 June 2003).

various levels, both the inter-departmental and inter-governmental (central and local) levels. The LTCS was also beset by controversy and was subsequently reformed to exclude certain types of projects. Candid admissions from the government about the non-existence of facilities and/or general systemic features litter the policy arena.[94] Besides, the calls for policy coordination or what the government prefers to call 'joined up' government have been extensively heard from within the government.[95] This includes the 'local delivery of central policy' (Better Regulation Task Force, 2002).

The network appears to function on a 'balancing of interests' [22] or 'compromise' [15] basis but a deeper probe reveals more influence of certain actors. However, the government departments function as interest groups, often competing for stronger influence on policy, taking advantage of the complex and inter-dependent nature of both waste management and policy making in general.[96] The government consults but retains control of the policy, filtering the influence of peripheral actors, in contrast to the core.

It might be prudent to place the UK's capacity for sustainable waste management in the wider context of its ability to ensure sustainable development. MSW is not the only policy area that lacks an effective, efficient and successful strategy.[97] The government is 'accused of being slow in implementation' with clear reform of planning and regulation lagging behind. Although the MP interviewed saw any policy a result of a 'balancing act', the substitution of the 'green' Michael Meacher with Elliot Morley is an obvious indication of the government's drive to sacrifice the environment to economic interests.[98]

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[94] 'We don't have an existing national WEEE scheme like some European countries', DTI presentation on WEEE (www.dti.gov.uk/sustainability/weee/ accessed 5 March 2004).
[95] See BRTF report 'Local Delivery of Central Policy' (July 2002).
(www.cabinet-office.gov.uk/regulation/TaskForce/2002/LocalDelivery.pdf accessed 5 March 2004).
[96] Also see Richardson and Jordan (1979) and Page (1992).
[97] 'UK carbon dioxide emissions soared in 2004' (26 February 2004), FoE Press release (www.foe.co.uk/resource/press_releases/uk_carbon_dioxide_emission_26022004.html accessed 28 February 2004).
[98] Recycling was pushed over incineration for two reasons: Meacher was not in favour of incineration and showed a fair degree of resistance (to incineration plants) [10].

Chapter 8

Delhi and London buried in waste?

8.1 Comparative analysis of Delhi and London: Applying Jänicke's model

8.2 Jänicke's model: clarifying the institutional dimension

8.3 Institutional capacity for effective MSW policy reform: comparing Delhi and London

8.4 Increasing institutional capacity for *effective* MSW policy reform

In the preface of his classic 'Risk Society', Ulrich Beck says that he wrote most of it overlooking a picturesque lake, and that readers should imagine a lake in the background. I wrote most of this book overlooking a garbage dump; one day soon it will be a park.

J. S. Dryzek, Preface, *The Politics of the Earth* (1997)

The thesis brings together a range of concerns and debates regarding capacity for environmental protection in general and analyses of MSW policy reform in particular. Growing MSW is a problem for both Delhi and London. Both cities face constraints on achieving environmental sustainability in MSW management which has significant ecological, social, political and economic implications. Martin Jänicke's model of capacity for environmental policy reform articulates the different factors impacting on the MSW policy. In evaluating the explanatory value of his model, this thesis has sought to establish the significant role of the institutional framework in MSW policy in the cities of Delhi and London. In addition, the policy networks approach was used to study how institutions played a mediatory role between pressure for environmental protection and policy reform. The highly integrated networks in the two cities, identified in keeping with the policy networks approach, indicate a high degree of embeddedness of conventions, norms and interactions that constrain adoption of more sustainable waste management practices, like recycling, and influence the ability of the existing institutional framework to respond to pressures for environmental protection. I therefore argue that policy reform accompanied by a reform of institutions to decrease embeddedness could help achieve effective MSW policy reform.

The first section of this chapter identifies the similarities and differences between the two cities when Jänicke's model is applied. The second section summarises the issues that this thesis has raised about limitations in the explanatory value of Jänicke's model and the lack of adequate emphasis on institutional capacity to ensure environmental sustainability in MSW management. The third section examines the broad themes of the research and compares the institutional capacity for effective MSW policy reform in Delhi and London. The final section offers suggestions on how institutional capacity might increase based on the findings of this research and aided by Jänicke's model.

The research covered the period from 1990 till 2003. It should be noted, however, that there have been some developments since then which reaffirm the existence of increasingly strong environmental pressure. In some instances in both cities, institutional change has strengthened the drive towards environmental sustainability, which substantiates the argument that institutional change along with policy reform is required for the successful pursuit of environmental sustainability in MSW management.

8.1 Comparative analysis of Delhi and London: Applying Jänicke's model

Jänicke's model of capacity for environmental policy reform identifies five factors that constitute capacity: actors, strategies, structural framework (cognitive-informational, political-institutional, and economic-technological), the situative context, and the character of the problem. Jänicke places these five main 'fundamental conditions' in an international context. In addition, he regards economic performance as strongly influencing the character of problems as well as the capacity to respond to them.

This section highlights the differences and similarities when Jänicke's model is applied to the cases of Delhi and London. A comparison is also drawn with some of the 30 countries studied by Jänicke and Weidner (1997; 2002), which led them to conclude that:

> [....] although capacities for environmental policy and management have continued to expand remarkably over the past decade, particularly from the institutional point of view, the global ecological challenges (especially in climate change) and certain national and regional problems (such as decreasing biodiversity, soil pollution, depletion of water resources, deforestation, urban expansion and sprawl) have increased. Clearly, the 'negative capacities' [....] in

both developing and advanced countries are still strong enough to hinder any ecologically sustainable change of direction (p. 410).

This research found institutional embeddedness of certain norms and interactions amongst the actors that constrained efforts towards more environmental sustainability in MSW management as mainly comprising negative capacity. The following paragraphs present the findings from the fieldwork conducted in both the cities.

Actors

In the two cases under study, diverse actors, governmental and non-governmental, with a range of objectives and interests were involved in the MSW policy. Key actors, both proponents and opponents of environmental sustainability in MSW management, were identified based on the findings from the field work and various secondary (both governmental and non-governmental) publications in Delhi and London. Governmental organisations at the centre and local levels, with their inherent resource dependencies including financial considerations/constraints, design and implement MSW policy. While decentralisation has made local government relatively more important than previously in MSW policy process, without adequate financial resources, it· remains a provider of local services in Delhi. This further constrains the introduction of user charges and fees to recover costs associated with the provision of waste services. Similarly, though the system of variable charging has been adopted in many European countries and worldwide, it is yet to be considered in the UK.[1] However, in London, there have been significant moves towards compulsory recycling, as initiated in the London Borough of Barnet. Hackney is the latest borough to adopt this measure.

The relationship between the levels: the staff working for different branches of government and various government departments in Delhi spoke of friction between their departments more openly during interviews than in the case of London. In London, some friction between the local level and the Mayor; and between the ODPM and DEFRA could be ascertained. Evidence in London suggested dissatisfaction on the part of local authorities at the lack of guidance and support from the centre to ensure action to reduce the level of packaging and other materials, and creation of new markets for recycled materials etc. Instead the focus was on setting targets bringing local authorities with unequal resources in competition. In a pre-general election bid to

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[1] See Gale (1996) for details on Ontario.

fend off council tax rises, the UK government reduced recycling targets for 103 English local authorities to 30% for 2005-06, which undermines its plans to improve the UK's recycling record and risks fines of up to £180m/year from the European Commission.[2] According to the FoE press release, this forces the government to rely heavily on high-performing local authorities and on more waste being produced in these areas than others which could aid in boosting up the figures for recycling.

In London too there are problems with interactions between government departments. Furthermore, though there has been frequent restructuring of the UK's organisational setting for environmental policy, none address the awkward split between waste collection and waste disposal authorities in London nor the lack of communication channels between departments that could avoid crises like the fridge crisis discussed in Chapter Seven. The creation of DEFRA in an effort to streamline environmental policy left this relatively new department without much clout in its own area of remit. It is often accused of being 'easily ignored' and more focused on rural issues to the detriment of urban environmental issues. This becomes particularly evident when the departmental relations between DEFRA, ODPM and the Treasury are studied. Two years after the NRWF study the House of Commons, in its 2004 Report, acknowledged that there is evidence that policies promoted by other departments in fact conflict with the aims of DEFRA.[3] Importantly, the Report challenged the permanent secretary about how effective DEFRA has really been in 'embedding sustainable development across government'.

The fieldwork revealed that the UK Parliament played a small and sporadic role in shaping MSW policy despite assembling standing and *ad hoc* committees on various issues of the environment. Similarly, the Indian Parliament has not played a significant role in MSW management in the country. The UK's Strategy Unit provides a relatively well established system of scrutiny of the functioning of the government departments in comparison to Delhi, where this role is fulfilled more by the non-governmental sector, including the media. Interestingly, political affiliations in both the cases did not seem to determine the inclinations of the policy.

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[2] FoE (2004) Government cuts recycling targets for Councils (13 December).
(www.foe.co.uk/resource/press_releases/government_cuts_recycling_13122004.html accessed 25 January 2005).
[3] For instance, it identified the failure of the Department for Transport to accept the disparity between its policy on aviation and the major commitments the Government has given to reduce carbon emissions and develop a sustainable consumption strategy.

Judicial activism, expressed through PIL filed in the Supreme Court of India plays an important role in directing the executive towards firstly performing its duties, and secondly to ensure that environmental sustainability is pursued. In the case of London, the European Union plays a parallel role, with the power to sanction defaulters. This feeds the feelings of resentment amongst government departments towards the EU. However, both, the Indian Supreme Court and the EU can be lobbied. In fact, this was evidenced in the Committees constituted by the SC in response to the PIL filed for sustainable waste management. The UK, on the other hand, is exploring ways to strengthen its influence on EU environmental policy processes with the constitution of the House of Lords *Select Committee on the EU.*

The NGOs dominate as environmental proponents in both Delhi and London. Nevertheless, diversity of objectives and lack of adequate resources dilutes their impact on MSW policy. Furthermore, to varying degrees these organisations were in competition with each other. Delhi has a huge informal sector, comprised of rag pickers, that aids in the collection of recyclables apart from the RWAs that liaise between householders and local councillors. However, the potential of RWAs and the informal sector to create more sustainable options for managing waste remains untapped. Industries were largely regarded as negatively influencing policy in both cities. Nonetheless, London has a recognised group of companies that promote environmental technologies for managing waste. This forms a different category of influence from those supporting incineration or landfill.

Strategy (general approach to the problem)

Interestingly, both cases express support for the waste hierarchy as an accepted strategy (or general approach to the problem) of introducing environmental sustainability in MSW management within the broad framework of sustainable development. While the direction of MSW policy is determined by the national governments, the interpretation and application of the concept of sustainable development is different in the two cases. The Indian policy documents have gradually moved away from identifying environmental problems as reflecting the inadequacy of development to distinguishing between two kinds of environmental problems: those arising from the very process of development, and those arising from poverty and under-development. However, when combined with issues of social justice, equity and human rights, including right to livelihood, both the idea and possibility of achieving environmental sustainability gets more complex. Coupled with minimal financial outlay of the state and central

government budgets, this makes the general environmental policy *ad hoc*, end-of-pipe and reactive. The strategies for MSW management in particular are unable to introduce environmental sustainability. They fail to direct the functioning of the market and control negative externalities, and ensure practice of the waste hierarchy. Furthermore, governmental ministries support contrasting solutions. The MNES supports WTE technologies by providing subsidies to start up such plants despite evidence of their lack of feasibility on both economic and environmental grounds as found by studies conducted by other central government institutions. The MoEF in turn pushes for adoption of the waste hierarchy.

Policy documents in the UK interpret sustainable development as improving efficiency and innovation in the use of natural resources to meet the needs of everyone. Yet environmental policy making in particular has been criticised as 'weak in nature'. This insufficient emphasis on environmental sustainability often leads to lack of clarity for local authorities who are inclined to adopt WTE or incineration as an alternative to landfill in order to meet targets set by EU Directives. In other words, options are mainly assessed on the criteria of diverting waste from landfill which is a cause of concern.[4] In addition, the research questions the conclusion reached by Weale (1997) when applying Jänicke's model to the UK, that various factors have contributed to the opening up of the policy-making process.

By contrast to the scenario in Delhi, local authorities in London have recently received a funding boost through the Behavioural Change Local Fund of WRAP. Also, at government departmental level in the UK, certain cross-cutting guidelines and principles have been introduced in order to create greater coordination, a feature not found in Delhi. For example, the Best Value framework and Public Service Agreements aim to ensure bench marks and standards not only for the government departments but also in their liaisons with the private sector when services are contracted out.

Structural framework conditions

Jänicke characterises the political-institutional, economic-technological and cognitive-informational as *structural framework conditions*. The political-institutional condition is discussed in detail in section 8.3.

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[4] See BBC 'Waste incineration set to rise' (http://news.bbc.co.uk/1/hi/uk/4621710.stm accessed 16 February 2006).

There are major differences between the two cases when compared in terms of the *economic-technological* framework conditions. Both cities have significant economic resources, although Delhi is undergoing rapid economic change as compared to the more established economic situation in London. Despite economic advances and GDP growth rates, India has consistently failed to incorporate environmental sustainability. In fact, there is widespread concern that India will soon become the third biggest polluter (Watts and Ramesh, 2007). The lack of integration between development and environment percolates through most of MSW policy formulation. The UK has introduced various economic instruments to divert waste from landfill amongst other objectives, like the Packaging Recovery Notes, landfill tax and tradeable permits. However, these instruments and their application are not without critics.[5]

Differences are also apparent when the cities are compared on the *cognitive-informational* framework condition. The government in India has since 1997 endeavoured to produce and distribute more information on the issue of the environment in general and MSW in particular. However, the questions amongst the public regarding their reliability remain. In stark contrast, the non-governmental sector is credited both with more reliability and diversity in coverage. However, this gets diluted when the focus is determined by the saleability of the issue and politics of competition amongst NGOs. Perhaps of more significance is the high degree of awareness amongst the public, NGOs, media and the government of the unsustainability of current MSW practices, with little getting translated into ensuring intra- and inter-policy integration.

The level of environmental knowledge made available is significantly higher in London than in Delhi. In London, information on MSW related policies and issues is provided by the UK government, NGOs and even the waste management industry in general with easy access. In addition, stakeholder participation is often invited by the government through open consultations for policy initiatives for waste which generates a certain degree of debate on the issue. In contrast, open consultations are a relatively new feature in Delhi with the government only recently inviting views on its new draft National Environmental Policy.

Situative context

The *situative context* in both cities is potentially more favourable than currently realised. For instance, the possibility of employment generation in the recycling industry, coupled with

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[5] See for instance, European Topic Centre on Resource and Waste Management (October 2005).

environmental sustainability, can serve as a beacon for other policy areas. However, this potential is not being realised although it must be acknowledged that London continues to do more in this regard than Delhi. In Delhi, the government concentrates mainly on the provision of the MSW service with little consideration for the broader goal of sustainable development. Furthermore, there is no 'politics of reconciliation' between the goals of development and environment at the local level as maintained by Agarwal and Yokozuka (2002). There is sensitivity to environmental issues although not towards environmental sustainability. Other issues, like vehicular pollution, have received more attention backed by substantial policy and institutional shifts leaving little space for the consideration of issues like MSW. Some environmental disasters and PILs filed in the Supreme Court have drawn attention to the issue of MSW management however these have failed to generate systematic follow-up pressure.

London experiences this lack of situative opportunities but to a lesser degree than Delhi. The recent media focus on climate change issues has considerably raised the profile of the related issue of managing waste sustainably. The Waste and Emissions Trading Act 2003 also introduced the Landfill Allowance Trading Scheme (launched on 1 April 2005), which strives to include economic incentives in measures for sustainability at the local authority level.[6] However, where the companies and broad industrial sector is concerned, the government fails to be assertive.

Problem

Both cities acknowledge waste as a looming problem with huge environmental implications made more severe by constraints of space. Apart from differences in the actual quantity and composition of waste between the two cities, the pressures for responding to the problem also vary. Space is more of a problem in London where also the pressure from the EU can transform into financial penalties for the local authorities. The policy makers in Delhi have largely ignored the actual composition of waste when suggesting alternatives to landfill. The focus on incineration has distracted attention to the detriment of the environment apart from cost implications associated with adopting a fuel driven waste disposal strategy. In actual fact, the

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[6] The scheme allocates tradable landfill allowances to each waste disposal authority to landfill a certain amount of biodegradable municipal waste in a specified scheme year. Each authority can decide how to use its allocation of allowances in the most effective way, including trading with other authorities, save them for future years or use some of its future allowances in advance. See DEFRA's website - www.defra.gov.uk/environment/waste/localauth/lats/intro.htm for details.

existing landfill site at Okhla no longer fills waste into land, but is a huge heap of garbage a few storeys high.

In sum, the two cities exhibit varying degrees of similarity and difference when compared on the factors identified by Jänicke. Both show evidence of a possibly sound capacity for environmental policy reform, and indeed environmental sustainability in MSW management as identified and defined by Jänicke. However, large number of actors including existence of proponents of environmental policy reform, increasing pressure for environmental policy reform, economic capabilities and awareness of the MSW problem do not ensure adequate consideration of environmental sustainability in MSW practice. The difference between the two cases in the degree and extent of that consideration should be reiterated. Although London scored somewhat higher in attempting to introduce environmental sustainability than Delhi, when compared to countries like Germany and the Netherlands in the EU, London's achievements are clearly limited.[7] The overall findings did suggest a much lower institutional capacity for environmental sustainability in MSW policy in Delhi. However, it maybe that the interviewees in Delhi were more forthcoming with information. To that extent, the field work in London was therefore not as detailed. Nevertheless, the conclusion that a highly integrated network with a high degree of embeddedness was disadvantageous for environmental sustainability in MSW in both the cases could still be reached.[8]

Recent developments

Recent developments in both Delhi and London confirm and reiterate the findings of this research. The necessity of institutional reform becomes clear through various recently introduced

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[7] Jänicke and Weidner (2002) conclude that the Netherlands, Denmark and Sweden are front-runners, a status achieved by the far-reaching institutional reorganisation they have initiated in various policy areas to accelerate integrative environmental policy in the direction of ecological modernisation and sustainable development. The central elements of this new environmental strategy include flexible, cooperative governance, strategic long-term planning, eco-taxes and stakeholder dialogues. Extending the comparison to other western European countries of Italy and France, according to Jänicke and Weidner, both do not show high levels of improvement in waste management. Italy's low recycling rates and weak legal arrangements and controls mean that waste disposal if often far below the standards of other OECD countries. In France, there are many waste disposal sites for household waste that do not operate with state-of-the-art technology. Regarding institutional capacities in developing countries, their study shows that the greatest weaknesses are in implementation (p.420).
[8] As noted in Chapter Two, institutional embeddedness can also possibly enable initiatives towards sustainable development. Embedding new open networks, for example, would aid such initiatives, even if they require new institutional arrangements.

initiatives, whether successful or otherwise. These initiatives also confirm the enabling role of the government.

In 2004, the Indian Environment Minister, Ramesh Bias, acknowledged that there was in effect no environment policy in India.[9] Nearly 70 leading environmental organisations and campaigners launched a nation-wide drive on 16 September 2004 to pressure the Indian government to adhere to environmental norms before clearing projects that damage the country's fragile ecology. Accusing the government of a marked pro-industry bias (Kumar, 2004), they petitioned the President APJ Abdul Kalam and Prime Minister Manmohan Singh, MoEF, Chief Ministers of the states, and bureaucrats across India. They also petitioned to make the draft National Environmental Policy available to the public for comments. After initial claims by the government that the draft had gone through a participatory process, it succumbed to the demands to seek public consultation thereby opening up the policy process. Interestingly, the MoEF marked it 'secret' when the draft was submitted to the Cabinet for clearance. Equally concealed is the fact that the policy is being drafted not by the MoEF, but by TERI (The Energy Resources Institute). On the flip side, there is a trickle of good news. The Indian authorities turned back a French 'toxic' ship (asbestos-lined warship), *Clemenceau*, from its ship-breaking yard in western state of Gujarat, after complaints from environmentalists led by *Greenpeace*.[10] The important question is if this trend of governmental assertiveness will be sustained?

Faced with a huge resource crunch, the Municipal Corporation of Delhi (MCD) has sought an immediate bailout package from the Delhi government including an interest free loan for Rs. 500 crores.[11] The Master Plan for 20 years of the MCD, drafted by the *COWI*, a Danish company in association with *Kadam Environmental Consultants* (based in Gujarat, India), includes optimal waste treatment and disposal based on public-private partnership (Krishna, 2004). Although it recommends a multi-pronged approach instead of depending on any one technology or method, it still favours landfills and WTE plants, clearly constraining more environmentally sustainable options. In the meantime, 230 households in Sarita Vihar (neighbourhood in Delhi) have

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[9] *Times of India* (19/01/04).
[10] BBC (2006) *Chirac orders 'toxic' ship home*, 16 February. (http://news.bbc.co.uk/1/hi/world/europe/4716472.stm accessed 25 February 2006). Interestingly, the day after India's ban, neighbouring Bangladesh banned an asbestos-lined French ocean-liner (BBC, *Dhaka bans toxic French liner*, 16 February 2006. (http://news.bbc.co.uk/1/hi/world/south_asia/4720918.stm).
[11] *The Hindu* (2005) MCD seeks 800 crores bailout package from Government (12 January). The financial crisis was caused by a sharp decline in property tax collections. For the fiscal year 2004-05, the MCD had collected less than Rs. 500 crores against a target of Rs. 12,000 crores. According to Krishna (2004), the MCD would require an investment in waste infrastructure of more than Rs 3,700 crores till 2024.

established it as the first zero waste neighbourhood.[12] The holistic waste practices adopted include segregation of waste, recycling through a private waste collector and composting in the neighbourhood park managed by the MCD staff. Thus, while on the one hand the local government in Delhi still has hurdles to overcome, the so far apathetic public has managed to achieve laurels.

In the UK, the recently launched DEFRA's consultation on how to tackle the growing problem of waste in England, proposes that 27% of all the waste produced by households in England should be burned by 2020 compared with 9% today and that the amount of waste put into landfill sites should drop from more than 72% today to 25% by 2020.[13] However, on 21st December 2005, the European Commission proposed a new strategy on the prevention and recycling of waste, which ties the strategy on the prevention and recycling of waste with two other initiatives: integrated product policy and the strategy on sustainable use of natural resources.[14] It also aimed to set treatment standards for waste recycled, to ensure that recycling facilities themselves do not pollute and to promote a level playing field for recycled material. This should force a rethink of UK's MSW strategy. On a broader level, in May 2004, 26 leading organisations sent a letter to the DTI, boycotting the UK Government's consultation on a Corporate Social Responsibility (CSR) framework, because of its refusal to consider binding CSR legislation.[15]

On the other hand, some instances raise significant concern. For example, on 5th December 2005 the BBC's 'Real Story' programme followed the trail of recyclables and found evidence that some goods collected in the UK for recycling are being sent illegally to the third world as mixed waste.[16] According to the Environment Agency (in the programme), about half of the 8 million tons of green bin material thrown out each year in the UK ends up overseas. The Agency clarified that the contractors who export waste instead of processing it in the UK are not breaking any law – as long as it is properly sorted and cleaned so that foreign mills and factories can recycle it.

[12] See Perappadan (2004) and Sengupta (2004).
[13] See Vidal (2006) and BBC 'Review launched to tackle waste' (http://news.bbc.co.uk/1/hi/sci/tech/4708758.stm accessed 16 February 2006).
[14] Commission Communication of 27 May 2003 entitled 'Towards a thematic strategy on the prevention and recycling of waste' [COM(2003) 301 - Official Journal C 76 of 25 March 2004]. See Commission of the European Communities (2005). See also Europa - http://europa.eu.int/comm/environment/waste/strategy.htm accessed 12 February 2006).
[15] FoE Press release (6 July 2004) - www.foe.co.uk/resource/press_releases/government_white_paper_let_06072004.html accessed 20 August 2005).
[16] Real Story: How green is your wheelie? - BBC ONE aired on Monday 5 December at 19.30 GMT. BBC (http://news.bbc.co.uk/1/hi/programmes/real_story/4493728.stm accessed 20 January 2006).

However, as in the case of Indonesia explored by the programme, the 80,000 green bins' worth of material is classified as hazardous waste. Clearly the management of MSW crosses national boundaries.

There have been promising developments at the local government level in London. Barnet became the first Borough to introduce a Borough-wide compulsory recycling scheme on 1 March 2005, which has participation rates between 69%-93%.[17] Barnet council empowered by the Environment Protection Act can prosecute as the last resort.[18] In Barking and Dagenham, the capacity of bring sites (recycling banks) is set to increase by an extra 20 bins and a recycling scheme will be introduced in selected estates during 2005/06. The new environmental strategy launched in May 2005 in Sutton aims to promote a greener way of life and supports zero waste.[19] David Sargent, the Managing Director of LondonWaste (that manages Edmonton Incineration plant) received the prestigious 2005 Green Apple National Champion Award at the House of Commons in recognition of LondonWaste's leading role in waste management, more specifically in recognition of the 40 acre EcoPark created on the site which includes composting and recycling facilities.[20] Thus in response to increasing pressure from the EU, there is increasing recognition, amongst the opponents as shown here, of the need to support more environmentally sustainable options.

8.2 Jänicke's model: clarifying the institutional dimension

Diverse countries around the world have been analysed by Jänicke and others using the conceptual repertoire of his model to understand the complex international and global trends in environmental policy. This testifies to the strength of the model and its general applicability to developed, developing, newly industrialised societies and countries in transition. Jänicke has confronted the challenge of attaining sustainable development and integrating environment and development objectives. He has thoroughly examined the role of different factors contributing to capacity for environmental policy. Jänicke's assertion that both developed and developing countries face environmental problems, with success often being more or less restricted to

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[17] Borough information from www.capitalwastefacts.com accessed 10 January 2005.
[18] Letsrecycle.com 'Recycling goes compulsory for all residents in Barnet' (6 January 2005) (www.letsrecycle.com/info/localauth/news.jsp?story=4070 accessed 17 January 2005).
[19] Sutton (www.sutton.gov.uk/environment/ accessed 8 August 2005).
[20] See LondonWaste (2005, 2005a) for further details.

problems that can be handled mainly by 'additive' technical standard solutions without restricting markets or relevant societal routines (1997, p. 2) is indeed substantiated by the two cases of Delhi and London. In addition, his conclusion that 'the relationship between affluence and environmentalism is significant but contradictory, that is, economic development leads to both improvements and deterioration in the state of the environment' (1997, p. 299) is also substantiated. However, some aspects of the model need further clarification and/or were found to be discrepant with the findings of the thesis, notably the weighting of the role played by the institutional dimension. Though he includes the political-institutional framework conditions in his model, it has been argued here that he under-emphasises both its role and impact on the environmental policy process.

It is also important to note a difference in premise. For him, success in environmental protection signifies comparatively best (or nearly best) achievement (including cases where the result is still insufficient but no better is known). From that perspective, *any* effort in the 30 countries investigated by Jänicke and Weidner (1995, 1997, 2002) qualifies as success. They conclude that 'there might have been increases in capacity for environmental policy and management in the last 25 years' (Jänicke and Weidner, 1997, p. 311) but this has also been accompanied by a general, and in some cases, aggravated lack of integration of environmental concerns in economic policy making around the world. By contrast, as discussed in Chapter Two, this thesis has adopted a somewhat stricter standard of effectiveness. The effectiveness of policy reform, in the context of achieving environmental sustainability in MSW management, is defined as the formation of optimal policies that can pursue the option of maximal recycling and minimal landfill and incineration. Thus, while studies use various criteria for success of a policy ranging from realisation of collective action to transparency, in this research, the extent of environmental sustainability achieved in MSW policy is the goal and the measure of success used here.[21]

This thesis has explored the structural conditions further by utilising the policy networks approach to show that the institutional framework including both proponents and opponents of environmental reform largely influences the system's capacity for environmental policy and its utilisation. In including opponents and their situative opportunities as well as proponents, the approach here also differs from Jänicke's. He reduces the opposing target group of polluters to

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[21] An interesting example is the Netherlands' City and Environment project which is an area-based approach that aims for cooperation between parties (national, regional, local authorities, companies, organisations and local residents), integration of different sectors (environment, spatial planning, health and economics) and if necessary, a flexible application of regulations.

the status of 'a restrictive factor and a part of the problem' (2002, p. 7) and by not studying how they affect the policy process, he largely leaves them out of the analysis. However, of interest is Jänicke's statement that a broad and stable consensus for a strategy of resource input reduction has not yet been reached because of the strong position of opposing economic interests. Besides, as in Delhi and London, many of the environmental proponents have inadequate resources and influence to determine how or when the capacity is utilised. This research examined whether the level of institutional capacity could explain the evidenced MSW policy failure in Delhi and London despite otherwise broadly favourable conditions; and whether there is a potential need for institutional change to introduce more environmentally sustainable practices like recycling in order to ensure sustainable MSW management.[22]

The political-institutional framework conditions

Jänicke evidently does recognise the importance of institutions under what he calls the political-institutional factor.[23] Yet this thesis has identified a number of problems with Jänicke's deployment of the category of the institutional, which deserve more general comment here. On the one hand, it is tentatively suggested that his conception of institutions is perhaps dominated by the classic paradigm of political institutions. This research indicates a broader significance to the revealing character of the policy networks approach. On the other hand, there is the key issue of the weighting to be given to the institutional factor. Jänicke rejects all mono-factorial accounts and asserts that no one factor is predominant. By contrast, it has been argued in this thesis that institutional factors, at least in the two cases of Delhi and London, have played the predominant role in explaining the failure of MSW policy reform. Discussion here thus elucidates how the institutional factor underpins (at least some of) the other factors of the model.

Jänicke relates the concept of capacity to the concept of political development or modernisation. As noted in Chapter One, Jänicke defines political modernisation as institutionalisation and internalisation of new stages of problem-solving capacities in reaction to (or anticipation of) societal challenges or crises.[24] There are two aspects that Jänicke emphasises. Firstly, that the

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[22] As explained in Chapter One, it is beyond the scope of this research to compare institutional failure with the entire repertoire of environmental policy failure arguments, namely, market failure, property rights failure, ethical failure and the failure of the state or intervention failure.
[23] Jänicke's earlier work (1990) presents the state failure perspective with respect to environmental protection measures, referring to bureaucracy-industry complexes, which cause state failure in political terms, that is, chronic inability to take decisions widely agreed to be necessary.
[24] Jänicke (1973 in German) quoted in Jänicke and Weidner (1997).

long-term process of capacity development usually begins with the *institutionalisation* of the new policy area and secondly, that the existence of a pluralistic and cooperative national institution for environmental planning represents a high level of institutional development (Jänicke, 2002, p. 12, emphasis added). Certainly, this supports the claim made in this thesis that an increase in problem-solving capacities would require changes in institutional policy-making styles and processes.[25]

In another moment, Jänicke subdivides the political-institutional framework conditions into participative capacity, integrative capacity and capacity for strategic action. As mentioned in Chapter One, by 'participative capacity' he means the openness of input structures of the policy process, with decentralisation and strong local communities as favourable conditions for participation. Integrative capacity comprises intra- and inter-policy coordination of environmental policy at different levels of the *political* system and cross-sectoral integration respectively. Finally, the capacity for strategic action is defined by the ability (of the state) to implement long-term common policy objectives against short-term special interests. Again, political institutions tend to be his main concern and level of analysis.[26] While in keeping with the state failure argument, this suggests that wider social science understandings of institutions and how they work may not be fully integrated into his work.

The network analysis used in this research has been offered as a very revealing supplementary approach. Put more boldly, network analysis shows up patterns that Jänicke's framework does not, for instance, the mutual perceptions of actors (including the inter-relationships amongst the actors) and levels of embeddedness of the interactions that constrain rather than enable strategies towards more environmental sustainability in MSW management. Although network analysis is not incorporated clearly in his model, he does state at one point that the crucial stage in capacity building is the 'opening' of closed policy networks, which make *de facto* decisions in ecologically problematic policy fields before proposals are decided upon by the representative institutions (1997, p. 18). This thesis has also indicated that network analysis is especially suited to new forms of governance. Jänicke himself briefly notes: 'network management has today become a highly sophisticated, professional strategy' (2002, p. 11). This research has thus

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[25] For instance, as discussed in Chapter Seven, Weale (1997) argues that the UK broadly pursues a participative policy style, while also asserting that strong pressures restrict the development of more forceful regulation.

[26] As stated in Chapter Five, Agarwal's and Yokozuka's suggestion of institutional change is restricted to decentralisation of environmental decision-making.

broadened the political-institutional factor of the model by studying the institutional framework conditions using the policy networks approach.

Turning to the question of the weight of the institutional factor, it is interesting to note that, in differentiating between capacity (a relatively stable condition of action) and its utilisation by proponents, Jänicke (intentionally or otherwise) gives the institutional factor a double effect: the institutional framework determines whether and how the systemic condition is utilised. The *actors* (proponents and opponents) are identified as *coalitions*, with 'stable general interests'. Importantly, their capacity for action is considered as dependent on their strength, competence and constellation but also on the *structural framework conditions* (which includes the political-institutional framework condition, under Jänicke's clarification).

Indeed, the other factors listed by Jänicke, in fact, exhibit a certain degree of dependence on the institutional framework. The second factor, *strategies*, according to Jänicke relies on capacities such as available knowledge or the possibility of strategic and coordinated action, which is another feature of institutional capacity. The conditions for producing, distributing, interpreting environmental knowledge are again determined by the dominant actors of the policy network in the two cities, for example, the role of the plastic industry in Delhi and Treasury in London. Although economic-technological framework conditions are mainly ascertained by the Gross National Product (Jänicke, 1997), the decision of what technology to use is made by the actors comprising the policy community in the two cities. In identifying win-win constellations which support both environmental and economic interests as an example of *situative context* and admitting that in times of recession environmental policy and management act under restrictive conditions, Jänicke again introduces the importance of the institutional framework. The reactions and perceptions of the public to the *character of the problem* (the final factor in the model), the economic relevance of the polluter and strength of the target group are all facets of the policy network. Thus, in effect, Jänicke introduces elements of institutional capacity at various points in his model, without due acknowledgement of its role in determining capacity for environmental policy and its utilisation.

In sum, Jänicke's model helps understand the general capacity for environmental policy reform in both cities but fails to answer why the two cities fail to achieve environmental sustainability in MSW management. These cities fulfilled many of the success criteria in Jänicke's terms yet institutional factors prevailed. Although Jänicke's model suggests the possibility of discord and

discontent between the proponents and opponents of environmental protection, it fails to realistically capture the manipulation of environmental policy by powerful entrenched interests. The empirical evidence proved that the model is inadequate in its under-emphasis on the institutional factor. This factor, decidedly, was the most determining in both the cases of Delhi and London.

8.3 Institutional capacity for effective Municipal Solid Waste policy reform: comparing Delhi and London

A comparison of the institutional capacity of the two cities under study also includes an analysis of their national situative contexts because the distinction between city and national contexts was often unclear. The very nature of waste, the reasons why and how it is generated and its potential for causing pollution increases the magnitude of actors affected by it. Both cities thus have a large number of actors in the area of waste management with an incentive to influence policy. For instance, industrial interest groups, environmental pressure groups, householder associations, government ministries and bodies, courts and, in the case of Delhi, the informal sector of rag pickers. Institutional capacity comprises the inter-relationships between these different actors, their resources, inter-dependencies and, importantly, the ability of the institutional framework to overcome institutional embeddedness and ensure effective policy reform.

The detailed questions used for the interviews in both the cases, and secondary publications helped identify the 'core' and 'periphery' actors. It was relatively easier to distinguish between these actors in Delhi, while in London often the guarded approach adopted by the interviewees made it more difficult. In that sense, London made for a more challenging case study which resulted in lesser detail than in Delhi. To a certain extent, this obstacle was overcome by following up on interviews and reading the latest publications. One significant aspect identified by the fieldwork was the clarity of mutual perceptions amongst the actors in the network. Everyone was aware of the 'rules of the game' and their stance on landfill, plastic waste, incineration, variable charging and other waste-related issues.

The high integration policy network indicative of stable relationships amongst members, restricted membership, interdependence within the network and insulation from other networks, are the characteristics of the networks in both Delhi and London. Interestingly, the periphery

comprises recognised (both in terms of identity and policy positions) actors with whom the actors in the core interact while keeping their core close-knit, distinct and resistant to change in both policy positions and new members.

The pressure for policy reform exerted by the EU (in the case of London) and the judiciary (in the case of Delhi) challenges the consistent consensus of the policy community. However, it fails to question the composition of the policy community and its high impact on policy. Institutional embeddedness is strengthened when, as often occurs, the same actors also interact in different policy settings, for example, in areas of Environmental Impact Assessments and pollution control in the UK. This contributes to familiarity, trust and an increased understanding of each other's perspectives and views. Therefore, any reform remains 'more on paper' or 'superficial' and 'difficult to achieve'.[27]

Both governments aim to improve MSW by focusing on the formal systems of waste management with little consideration of informal networks and the linkages between the two. While there is evidence of policy reform, this is externally induced and often falls short of being effective. Two factors aid in confirming the dominance of the policy community members in influencing the choice of policy alternatives: decision-making in both cities is concentrated in few actors and autonomy of the governmental actors from external influence, in particular industrial, is low. Failure, therefore, occurs because the governmental actors (political and administrative) are unable to mediate between the various interests and cannot limit the dominance of one particular actor.[28] It is also important to highlight the political definition and political acceptance of success or what relevant actors perceive as constituting such success.

In both cities, the interactions within the policy community were found to rely on the five central resources of authority, money, political legitimacy, information and organisation (Rhodes, 1986) but also quite heavily on the level of embeddedness of the interactions.[29] These interactions were 'time-tested and consistent' in their purpose and, most importantly, reliable, i.e., in stark contrast to the UK where industrial interest is adequately represented 'officially' within the policy community, the Indian policy network allows for direct access from affected industries. This opens up the possibility for often unaccountable and concealed influence, which gravitates

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[27] Various interviewees in both the cities.
[28] Further, as Anderson and Cook (2000, p. 235) point out effective alternatives for coping with social problems often become dysfunctional as formal bureaucratised 'solutions' become more powerful.
[29] Jänicke refers broadly to the resources and constraints of actors.

towards where the decision is being made, in this instance, the Supreme Court. The plastics case in Delhi and the Household Waste Recycling Act in the UK are indications of the nature of the interactions. Both policy communities actually seek overt cooperation at best or superficial support at least from 'external actors' like the NGOs. The different facets defining the policy network are, therefore, used to help identify the institutional capacity for sustainable MSW management in the two cities presented in the Table 8.1.

Table 8.1: A comparison of MSW policy network

Features	Delhi	London
Awareness of: a. MSW problem b. Actors & mutual perceptions	High High	High High
Comprehensive representation (real vs. superficial)	High (superficial)	High (superficial)
Level of embeddedness (flexibility/adaptability/ability to overcome embeddedness)	High (low)	High (low)
Insulation from other influences (autonomy)	High	High
Cooperation between all actors	Low	Low
Ability to respond to pressure	Low	Low
Institutional capacity	**Low**	**Low**

There is a high level of awareness of the shortcomings and MSW policy failure within government circles in both cities. The common themes underscored by policy documents in both cases were acknowledgment of institutional inadequacies and the consequent lack of enforcement, the need for creating public awareness and the role of NGOs in ensuring environmental protection through mobilising people at grassroots level. Most government publications recognise the need to integrate environmental and developmental objectives. However, implementation and reality on the ground differs.[30] This is often complicated further in London by a lack of clarity while transposing EU legislation. Thus, the high level of awareness in the two cases does not get translated into remedial and environmentally sustainable measures.

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[30] Galbraith (1992) states that it is not possible to deny the problem but it is possible to delay action by giving the appearance of action.

With a high level of separation from the core policy community, the actors in the periphery are not allowed adequate 'real' participation and inter-policy coordination is low. Similarly, what Jänicke calls 'intra-policy coordination' is not achieved in either of the two cities, with the different levels of the political system expecting the lower level to achieve environmental sustainability in MSW management. In addition, the high level of embeddedness in both Delhi and London does not allow long-term environmental goals to be pursued against the short-term interests of the dominant actors. At the governmental level itself, integration amongst the departments is difficult to achieve. Although the Sustainable Development Unit within DEFRA reports annually on the progress that departments make on integrating sustainability into operations and policy-making, it is clearly inadequate. Similarly, though the Planning Commission in India tries to ensure inter-departmental integration, there are no concrete measures enforced.

The constraints that arise from the institutional embeddedness of interactions are based on fostering two trends: firstly, the prevalent primacy of development (predominantly economic) agendas over the environment in policy circles and, secondly, as the corollary of the first, the lack of integration of development and environment agendas. Delhi faces pressure from the judiciary to institute environmental sustainability in its MSW management. However, the institutional capacity to respond to that pressure is low because the policy community has a high degree of insulation from other influences, like those from the periphery. Though it professes to seek comprehensive representation, this is nominal which results in a low level of cooperation between the core and periphery actors. This is mirrored in the scenario existing in London, where institutional capacity to respond to pressure for more sustainable outcomes in MSW policy is low. High insulation of the policy community, coupled with high level of embeddedness of interactions unfavourable to environmentally sustainable options, limit the institutional capacity for reform, as these options would require new institutional arrangements. Two conclusions can be reached. Institutional change aimed at decreasing institutional embeddedness increases the institutional capacity to respond to pressure; the more the institutional embeddedness, the more the need for institutional change along with policy reform to increase the possibility of *effective* policy reform. Thereby, substantiating the hypothesis presented in Chapters One and Two of this thesis.

The comparative analysis of the two cities shows that the institutional capacity to implement sustainable waste management policies is significantly low in both the cases. The mega-city

characteristics of the two cases, in particular, should in principle allow for greater environmental management opportunities.[31] This research found that the institutional frameworks in the two cities face increasing pressure for environmental sustainability in MSW management practices and mediate the response to that pressure. With the finding that institutional capacity to respond to environmental pressure determines the adoption and implementation of effective MSW policy reform, it can be concluded that institutional change to reduce institutional embeddedness and policy reform to introduce more sustainable options like recycling, are prerequisites for effective sustainable waste management policy reform in the cities. It seems that the question is no longer whether the cities need to introduce environmental sustainability in MSW management, but whether they can afford to ignore it.

8.4 Increasing institutional capacity for *effective* MSW policy reform

The thesis concludes that institutional capacity is inversely related to institutional embeddedness, which in effect, is a form of inertia that prevents adoption of more sustainable waste management practices. How can institutional change aimed at decreasing embeddedness be brought about? Three circumstances can bring about institutional change, if the pressure is too strong to resist; if the core actors themselves have changed preferences; and/or if the composition of the policy community is altered, including creation of a coalition amongst other actors even with the existence of dominant policy community. Despite pressure (external and internal) to reform MSW policy, the interests of the dominant actors find more expression in the policy in the two cases. Therefore, this section focuses on the last two possibilities for institutional change. The analysis from this research is broadly clubbed under the political, economic (including market actors) and social spheres.

Institutional reform in order to increase institutional capacity implies largely (though not exclusively) a change in the constitution of the MSW policy community, as explained by the policy networks model and 'network management' (Kickert *et al.*, 1997). For instance, a more participative policy process would, in turn, facilitate and promote widespread acceptance of

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[31] See Einsiedel (1996) who lists these opportunities: high residential densities allow for cost-effective installation of environmental infrastructure, higher levels of income should make pollution control and environmental services more affordable, environmental education and public awareness campaigns are more effective because of high levels of literacy and attracting foreign investments includes a tendency to give higher priority to environmental upgrading as part of the marketing effort.

policy goals and their implementation.[32] According to Jones *et al.* (1997) network governance form has advantages over both hierarchy and market solutions in simultaneously adapting, coordinating, and safeguarding exchanges. In addition, as established empirically, the policy community members seek insulation from influence. This can be surmounted by ensuring what Smith (1997) calls a 'middle-path', where there is mutual adaptation or agreed cooperation between policy actors in an area. Recycling as an alternative does not find consensus because it is promoted as a strategy that requires an established market. Without discounting the economics involved, equal importance should be given to the fact that it ensures waste does not pollute the environment and saves resources. The clear change in policy objectives could initiate a change in actor's preferences and institutions.

As mentioned in Chapter Two, institutions can co-evolve with issues in a more gradual manner and are dependent on positive and negative feedback processes which lead alternately to the creation, destruction and evolution of the institutions of public policy (Baumgartner and Jones, 2002). While there is growing pressure for ensuring environmental sustainability in waste management in both cases, there is insufficient institutional shift in preferences to increase the number of actors opposing the *status quo*. This coupled with the design of existing institutions to exclude, minimise or discourage participation by certain groups, impacts negatively on the efforts towards sustainable waste management in the two cities.

Institutional shift can result in heightened awareness amongst the so-far 'quiet' or 'dormant' actors and this can be initiated by a state, in its legitimate capacity as decision-maker for the society committed to integrating environment and development agendas. The empirical investigation suggests that though the responsibility for increasing institutional capacity for environmental policy involves all the actors in the two cities, the state, responsible for both formulation and implementation of MSW policy, has a more enabling role.[33] For example, increasing awareness, generating common understanding of problems and solutions, recognising the role of citizens and need for building social capital and tapping the experience of NGOs in the

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[32] It is widely acknowledged that increasing stakeholder participation in policy-making increases acceptance and implementation of policies (see Gregory and Keeney, 1994; Jones, 1995). It is important to remember that institutional change must persist over time to ensure that it is both stable and long lasting.
[33] The analysis of numerous countries based on Jänicke's model shows that government regulation was by far the most important immediate factor in change.

field, hold immense potential for increasing institutional capacity.[34] The state will be required to lead the complex interaction of social, political, economic and ideological forces.[35] The actual course of institutional development is a product of this complex interaction.

Organisationally, a few permutations can aid in increasing institutional capacity. In India, the Development Authorities could be made subsidiaries of the local authorities rather than state governments. The fragmentary approach for waste collection and waste disposal by the Boroughs of London could be brought under the administration of a Strategic Authority for Waste for the city. The Greater London Authority, already in existence, could easily envelop that role. An important finding of the research was the significant role played by the interrelationships between central and local governments. The potential of the local government as an implementing authority needs to be developed further.[36] For instance, allowing local government to decide on issues of variable charging (in the case of London) and introducing a special tax for health and environment (in the case of Delhi). At the international level, better cooperation amongst the various organisations would help national and local governments achieve sustainable waste management.

The potential for new configurations amongst the actors engaged in a particular policy area is always present. A flexible framework would, for instance, allow for introducing incentives to ensure participation of necessary actors and commitment to the common purpose (Kickert et al., 1997). The broader theoretical question is one of open democratic processes in policy-making or, conversely, is it desirable to design political institutions to disallow or minimise pressure and influence from interest groups? The paradigm of sustainable development, while an objective in itself, can also be a powerful tool for political consensus (Baker et al., 1997) providing a road

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[34] See Hoben (2000) for details of how the way knowledge is managed has repercussions on the policy narrative whose dominance is consequently not necessarily related to its economic, social or environmental consequences.

[35] See Huntington (1982).

[36] For instance, Handmer (1999) lists certain attributes which are needed for both cooperation or coercion approaches: local authority must have the commitment and ability to implement policy objectives, and there should be a process to deal with conflicts between the different interest groups. To use his typology, cooperative policy designs emphasise capacity building while more coercive approaches tend to assume that the necessary capacity exists and concentrate on ensuring commitment. In this understanding, Delhi and London are more indicative of the latter. According to Handmer, the cooperative approach maybe superior in maintaining local government commitment than a coercive one which would need an institutional structure capable of monitoring compliance and taking enforcement action against non-compliance. For Handmer, the cooperative approach is based on flexibility, adaptability and willingness and the ability to negotiate which reduces the need for monitoring and enforcement by higher levels of government, while the coercive approach is appropriate in the absence of commitment from local governments to higher level policy objectives.

map to initiate efforts to increase institutional capacity. Even the more recent understanding of the integration of environment and development objectives, like ecological modernisation, can be realised and improved through certain forms of government intervention; enhancing capacity building to secure policy reform (Gouldson and Murphy, 1998). Richardson (2000) states that new problems and solutions, or simply new ideas, have a virus-like quality that can threaten well-established policy communities, become fashionable and cut across sectoral and national boundaries.[37] For well-established policy communities, who have long held the 'franchise' for a policy area, new ideas are a potential threat unless they emanate from the community itself and can be adapted to suit the existing needs of the community. A key issue for the entrenched interests is, therefore, the degree to which the new ideas and knowledge can be accommodated in existing and agreed policy frames or whether completely new frames emerge, backed by new adversarial coalitions. In such scenarios, knowledge is a powerful 'change agent' (either endogenous or exogenous) for policy communities and networks.

The 'key concern of perceived risk of capture by dominant interests and balancing the needs of clients and other stakeholders' (Mehta, 1999, p. 168) requires enhancing institutional capacity of actors and organisations by creating opportunities and awareness of those opportunities for participation towards a comprehensive policy community.[38] Furthermore, the strategy could include instituting adequate monitoring and evaluation mechanisms for the participation process as part of that network. There is the all-important issue of 'good governance' interpreted to include not only government re-organisation for better service delivery but also regularisation of interaction with market and other civil society actors like NGOs, civil society organisations, RWAs etc. It is important to remember that transferring institutional arrangements without due consideration for national/local contexts can be detrimental to the objective. Whether a particular institution is appropriate in a country depends on supporting institutions, available technology and skills, the level of corruption and the costs of accessing and maintaining the institution, amongst others. Therefore, copying institutional models without considering whether they are needed by those they are supposed to serve can waste scarce resources.[39]

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[37] The virus analogy is meant to convey the importance of exogenously generated ideas as a shock to both existing institutional arrangements and the actors that benefit from them (Richardson).
[38] For Mehta, 'the capacity of individual organisation to implement changes is clearly critical to success' (p. 226).
[39] See World Bank Research (2002) for further details. The report while relevant to the market sector, recommends four principles to guide policy makers: complement what exists, innovate, connect, and promote competition.

Improving the economics of waste collection and disposal services would aid resource recovery and cost-effective waste recycling. While the cost of environmental protection is often quantifiable and high, and the benefits are long-term, diffuse and intangible (Peritore, 1999), environmental protection measures can in general be attained by modifying the nature and composition of economic growth.[40] Composting is a viable option of recycling available to solid waste departments in municipalities (Beukering, 1994) that generally spend 80-90% of their budgets on the collection and transportation of refuse, leaving no room for recovery.[41] International differences in policies to prevent pollution (Copeland and Taylor, 1994) motivate most of the concern over the effect of international trade on environmental quality. Given a growing international consensus on environmental regulation of production, it is possible to turn economic growth into a new direction (Peritore, 1999).

Various authors focus on the social sphere that can serve as a good source of pressure and agent to initiate and consolidate environmental protection measures. For instance, Pelikaan and Veen (2002) assess the viability of environmental policies that inform, educate and persuade rather than regulate public behaviour in the Netherlands. Dutch consumers are not asked to consume less but to consume in environmentally responsible ways. These largely successful policies aim to achieve internalisation of environmental values and, correspondingly, environmentally responsible conduct based on self-regulation. Importantly, according to Pelikaan and Veen, the policy outlook is guided by a steadfast belief in the ultimate compatibility of environmental and economic concerns.[42] Social capital is an important factor for most policy areas. As Jänicke (1997) asserts, the prevailing culture remains an unused factor that initiates the policy process. Instituting a monitoring role for the RWAs (in Delhi) and individual/neighbourhood watches (in London) would help build and nurture interest, awareness and channels of communication between civil society and local government.[43] In sum, institutional change can initiate integration of environment and development agendas. While the state can play an enabling role and 'manage the network', actors from other spheres should be equal partners in achieving sustainable development.

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[40] Pearson and Pryor (1978), Shrivastava (1995), Biswas (1999).
[41] Though experiences with such plants are frequently far from satisfactory because the often used 'western' technology is costly, complex and not adapted to local circumstances (Beukering, 1994).
[42] The 1989 plan, marked environmental protection as the fourth pillar of government policy alongside economic growth, reduction of the budget deficit and the reduction of unemployment (Pelikaan and Veen).
[43] In a similar vein, for Harris (2000, p. 4), 'a free citizenry in an equitable society is a crucial component of a broad vision of sustainability'.

Annex 1: Different options for waste disposal

Depending on the type of waste the following main options can be adopted:

a. *Recycling*: A material is recycled if it is used, reused or reclaimed (Baldwin, 1996) either into the same form as the original product or into a different product.[1] Recycling becomes important as it helps in a reducing the use of resources and the quantity of waste requiring disposal, aims at reducing environmental damage and reducing litter (Pearce and Walters, 1977).[2] However, recycling does not always make a realistic option when high levels of energy are required and/or there are risks of harmful effluents and by-products, for instance, plastics. The factors influencing recycling are the direct value of raw materials, technology, market structure and energy (Beukering, 1994). According to the EU Regulation (EC) No. 2150/2002 on waste statistics (consistent with Article 3 of the Packaging and Packaging Waste Directive), recycling shall mean the reprocessing in a production process of the waste materials for the original purpose or for other purposes, including organic recycling but excluding energy recovery.

b. *Composting:* is the breakdown of biodegradable waste by micro-organisms and is an established industry with some compost proving equal to commercial chemical fertilisers. Huysman and Baud (1994) state that economic viability can only be expected if considerable savings in transportation costs and a greater demand for compost are achieved which requires decentralised composting facilities located as near as possible to the source of generation and potential compost users. According to Bhiday (1996), the biogas plant in association with the earthworm compost/culture forms the basis of the latest eco-industry for the treatment of urban, ordinary industrial, agricultural and food production waste. The vermicompost fights soil erosion, helps reduce the use of chemical fertilisers, limits the use of fossil carbon and is adaptable to the socio-economic needs, thus providing the means to increase and improve horticultural and agricultural products.

c. *Biomethanation*: This method is suitable when organic matter is separated and fed into the bioreactor, where in the presence of methanogenic bacteria and under anaerobic conditions, fermentation takes place which produces biogas, along with high quality organic manure in the form of sludge (Agarwal et al., 2002, p. 18).

d. *Energy from Waste or Waste-to-Energy:* These waste treatment processes use the energy held in waste to generate power and heat while reducing both the volume and weight of the waste.[3] Current techniques include incineration with energy recovery (newer methods of waste incineration include gasification and pyrolysis), fluidised bed technology, anaerobic digestion (also known as biomethanation, it achieves 80% reduction in weight), landfill gas and refuse derived fuel.[4]

e. *Incineration without energy recovery*: Increasingly on the decline due to new legislation, and increased restrictions on emissions, this incineration is the process of reducing combustible wastes to inert residue by burning at high temperatures of 925 and 928 degrees centigrade. At these temperatures all combustible materials are consumed, leaving a residue of ash and non-combustibles occupying only 5% to 25% of the original volume of refuse (Douglas, 1983). Too much moisture in solid waste collected to burn at low cost, lack of consideration of pre-treatment with solar drying before incineration, and concerns that incinerator flue gas contains poisonous furans likely to harm public

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[1] Douglas (1983) lists *resource recovery systems* as a similar option. Outside the affluent countries much material that is considered garbage is re-used. The resource recovery systems in operation, some providing many jobs and conserving valuable resources, include traditional rag-picking, selective waste collection systems, and resource recovery plants.
[2] Research shows that recycling can help tackle climate change as well as protect forests and reduce pollution (Susan Oppenheimer, FoE waste campaigner in *The Planet Ark*, 25 January 2000).
[3] Incineration and other thermal waste treatments for MSW can reduce its volume by 90% and reduce its weight by 75%, reducing the demand for landfills (Biffaward, 2003).
[4] The Environment Council (1999).

health, makes incineration an unlikely option on health and technical grounds in developing countries (Atkinson et al, 1999).

f. *Landfill*: traditionally involves filling land with waste, i.e. as waste dumps. Modern landfill sites have become highly specialised with biogas and leachate controls, liner systems, compartmentalisation, and sophisticated planning procedures to ensure that the sites are fully utilised.[5] Landfill is seen as the least environmentally friendly treatment method, leading to leaching of nutrients, heavy metals and other toxic compounds, emissions of greenhouse gases, loss of valuable land space, and increase heavy transport (European Commission, 2005). The waste diversion from landfill, which includes Energy from Waste (EfW), recycling and composting can reach 90% (Thurgood, 1999).

g. *On-site disposal*: with the increasing rate of production of solid wastes in cities there is a growing trend towards the handling of this waste in the home, restaurant, or institution. Waste disposal units (garbage grinders) in the kitchen sink are becoming widespread. Incinerators are common in blocks of flats and institutions (Douglas, 1983).

Given the hugely diverse nature of waste, Integrated Waste Management (IWM) is a relatively new approach initiated in policy circles in an attempt to comprehensively address the problem of waste. According to Baldwin (1996) IWM is an important approach for the management of wastes because it lays emphasis on reducing the generation of waste rather than to incur costs and risks of managing it. He reduces the waste management options to waste avoidance (waste reduction at source), recycling, recovery or utilisation, waste treatment and waste disposal.

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[5] A sanitary landfill consists of alternate layers of compacted refuse and soil. Each day the refuse is deposited, compacted, and covered with a layer of soil. Two types of sanitary landfill are common: area landfill on essentially flat land sites, and depression landfill in natural ravines, gullies and man-made pits. Area landfill maybe used to reclaim land (Douglas, 1983). These are, however, still opposed by local environmental groups (Fullerton and Kinnaman, 2002).

Annex 2: Determinants of Government Policy-making Capabilities

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            ┌─────────────────────────┐
            │  Institutional Features  │
            └─────────────────────────┘
                         │
       Encourage or discourage certain types of
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                         ▼
            ┌─────────────────────────┐
            │  Attributes of decision- │
            │  making processes        │
            └─────────────────────────┘
                         │
          That enable or deter the emergence of
                         │
                         ▼
            ┌─────────────────────────┐
            │  Policy making           │
            │  Capabilities            │
            └─────────────────────────┘
                         │
       That influence government's ability to make strategic
                         │
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            ┌─────────────────────────┐
            │  Policy choices          │
            └─────────────────────────┘
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   That influence but do not necessarily determine the quality of social and economic
                         │
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            ┌─────────────────────────┐
            │  Policy Outcomes         │
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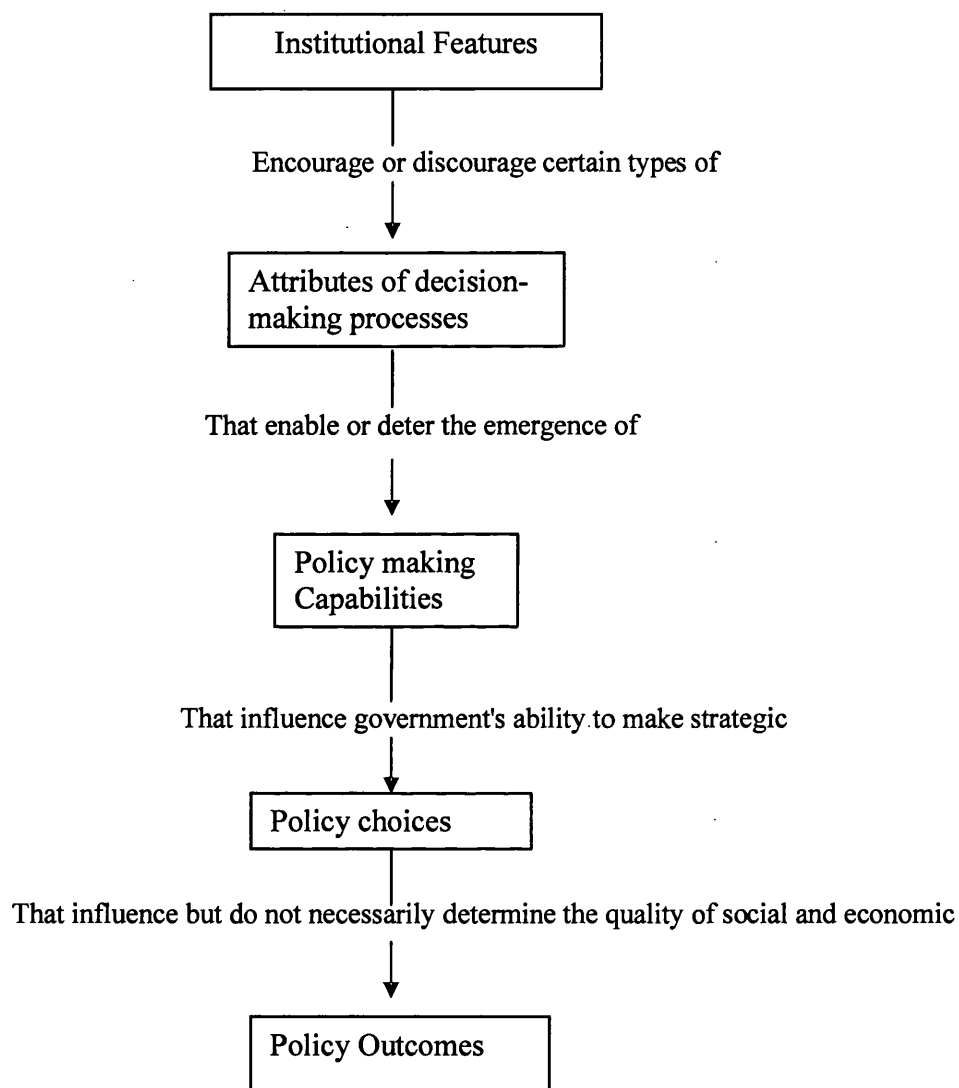
Adapted from Weaver and Rockman (1993). Authors use 'Institutional constraints' in the first box.

Annex 3a: Sample Questionnaire (tailored for the shortlisted London Boroughs)

<u>Section I: Policy and development of policy in the Borough</u>
1. How has the urban household solid waste management policy evolved thus far in the Borough?
2. Has policy remained static? If so, what were the reasons why no reform of policy was considered?
3. What are the options/alternatives to current policy?
4. If responsiveness is defined as being adaptable and attuned to the needs of the time (including responding to pressure), how responsive do you think the policy of waste management is?
5. Is there any pressure for reforming policy? If yes, where does it come from and how is it manifest? Has the pressure been recognised? If so, how?
6. What has been the response of your organisation towards that pressure?
7. Why was that particular response considered/possible?
8. Has change taken place in response to that pressure?
9. If not, what are the barriers to recognition of that pressure?
10. If not, what are the barriers to change (interpreted as considering other, possibly more radical alternatives)?

<u>Section II: Institutional Framework, Actors and their resource dependencies</u>
1. What resource-interdependencies can you identify in this area?
2. How do these resource-interdependencies (within the existing particular institutional arrangements) influence the response of institutions to pressure? Towards current policy? Towards policy reform?
3. What are the reasons for the continuation of the current policy?
4. What are the biggest drivers (causes) of policy change?
5. Can a distinction be made between actors involved in policy formulation and implementation?
6. Who are the actors in policy formulation? Policy implementation?
7. Who is the major player in policy formulation? Implementation?
8. What roles do the actors play? Formally and informally?
9. How do they relate to each other? As a requirement of the inter-organisational relationship? Or as a result of informal relationships?
10. Who are the losers/winners (not only in terms of achieving organizational objectives but also regarding vested objectives of attaining more power etc.) in the current set up?
11. How far do administrative/legal requirements (responsible for the current institutional framework) initiate/prohibit change?
12. Where does power for making decisions lie?
13. Who has power to enable or constrain policy change?
14. Who are the winners and losers of policy change?
15. Does policy get influenced at the implementation stage?
16. Who are the actors influencing policy at the implementation stage?
17. What does successful implementation depend upon? How could policy implementation be made more successful?
18. Does policy evolve incrementally or in big steps?
19.
20. Does any group has a right to veto change/reform? At both policy formulation and implementation stages?
21. Are there more radical alternatives being rejected?
22. What would be regarded as an ideal solution to the problem of waste?
23. How can the 'ideal' policy in your view be formulated? Implemented?
24. Who could be the main actors in the ideal policy framework?
25. What would their interests be?
26. What constellation of winners/losers would it create? In terms of resources and constraints?
27. What would be their ideal constellation? In terms of incentives/disincentives, resource inter-dependencies?
28. What would their response be to a different institutional set up (in line with the ideal policy) reflecting policy reform?
29. Would the changed policy stand a better chance at being successful?
30. Would you be able to trace instances of policy change without effective implementation?

<u>**Section III: Organisational Network**</u>
Parliament:

1. The following Bills are before Parliament: the Waste & Emissions Trading Bill which aims to divert Biodegradable Municipal Waste (BMW) from landfill and institutes a tradable permit scheme (to be applied in 2004) through various regulations including ones for the monitoring and recording of BMW waste landfilled. *AND* the Municipal Waste Recycling Bill which requires the Secretary of State to report to Parliament the policies that can ensure recycling of 50% of municipal waste by 31st December 2010, in the UK. Also, the Waste Disposal and Waste Collection Authorities will have to publish a sustainable waste strategy within one year of the Act coming into force, and annual reports after that with details of volume of waste collected, composted and recycled.

Has the Borough been consulted for the drafting/feedback on the Bills?
DEFRA:
1. What is the relationship between the Borough and DEFRA where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Is there room for improvement? If so, how can it be improved?
Environment Agency (EA):
1. What is the relationship between the Borough and the EA where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Is there room for improvement? If so, how can it be improved?
Sustainable Development Commission (SDC):
1. What is the relationship between the Borough and SDC where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Is there room for improvement? Is so, how can it be improved?
Association of London Government (ALG):
1. What is the relationship between the Borough and the ALG where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc?
3. Is there room for improvement? If so, how can it be improved?
Greater London Authority (GLA):
1. What is the relationship between the Borough and GLC where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Is there room for improvement? Is so, how can it be improved?
London Mayor:
1. What is the relationship between the Borough and the Mayor where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
London Development Authority (LDA):
1. What is the relationship between the Borough and LDA where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Is there any room for improvement in your view?
WRAP:
1. What is the relationship between the Borough and WRAP where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. In your view is there any room for improvement in the relationship? If yes, how?
Local Authority Recycling Advisory Committee (LARAC):
1. What is the relationship between the Borough and LARAC where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Would you have any recommendations of how to improve the relationship?

The London Planning Advisory Committee (LPAC):
1. What is the relationship between the Borough and DEFRA where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
The London Waste Recycling Programme:
1. What was the relationship between the Borough and LWRP where Municipal Solid Waste Management is concerned?
2. What was the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
National Resources and Wastes Forum:
1. What is the relationship between the Borough and NRWF where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Would you have any suggestions of how this relationship can be improved/strengthened?
Waste Planning Authorities (WPA):
1. What is the relationship between the Borough and the WPA where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Would you have any suggestions of how this relationship can be improved/strengthened?
Regional Technical Advisory Bodies (RTAB):
1. What is the relationship between the Borough and DEFRA where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Would you have any suggestions of how this relationship can be improved/strengthened?
South East Regional Planning Conference (SERPLAN):
1. What is the relationship between the Borough and SERPLAN where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Would you have any suggestions of how this relationship can be improved/strengthened?
The National Waste Awareness Initiative (NWAI):
1. What is the relationship between the Borough and NWAI where Municipal Solid Waste Management is concerned?
2. What is the nature of the relationship? Positively influential, mutually beneficial, adversarial etc.?
3. Would you have any suggestions of how this relationship can be improved/strengthened?
The Borough and its political parties:
1. How the politics impact on MSW?
2. Does the political level influence/guide/direct MSW policy in a particular direction?
3. How would you rate the degree of influence (on a scale of 1 to 10)?
4. What would your comments on the relationship between your office and the Local Council be?
Business and the Borough:
1. What is the relationship between business and the Borough?
2. Would it be possible to identify the dominant actor? If so, what factors contribute to the dominance?
3. What resources do the businesses command in relation to the Borough?
Voluntary sector and the Borough:
1. Does the Borough have an active voluntary sector? If so, please identify the organizations?
2. What is the relationship between the voluntary sector and the Borough?
3. Does the Borough envisage a role for the voluntary sector in the field of Municipal Solid Waste Management?
4. Was the voluntary sector consulted in the drafting of the Borough-wide MSW policy?
5. How often do you meet the representatives of this sector?
6. What, in your opinion, are resources and constraints of this sector as a policy actor?
7. Does the existing MSW policy tap into the potential of this actor?
8. Would you recommend a reform of policy to change the existing relations? If so, how?
The Borough and the householders:
1. How does (by what methods) the Borough perceive the level of environmental awareness amongst the householders? How would you rate the level of environmental awareness amongst the residents of the Borough?

2. Does the Borough actively engage the householders in its MSW policy – making/implementation?
3. What measures has the Borough introduced to ensure more participation from the householders in the recycling initiative?
4. Are there any feed back mechanisms instituted to ensure that responses of the householders are accounted for in review/reform of policy?

Finances:
1. How does the Borough fund its waste management activities? What is allocation for recycling?
2. Is it an (actively pursued) objective of the Borough to manage to break even where recycling is concerned?
3. What are your views about variable charging? Do you think the local councilors will consider introducing it to ensure funding any recycling drives in the Borough?
4. What are your views on the latest Waste Management Performance Fund being introduced?
5. What are your reactions to the latest budget? Does it help recycling or sustainable municipal waste management?

Section IV: Context specific questions
1. Best Value, which came into force on 1 April 2000, seeks to alter the way in which local authorities contract waste services, as well as requiring them to involve the general public in the decision making process. How has Best Value changed the way things function in the Borough?
2. Ambitious new targets for tripling recycling and composting rates by 2005 were set in the Government's Waste Strategy 2000. What is your perception of the targets? Are they a reflection of reality? Are they too ambitious?

3. Interestingly, the Waste Strategy (2000, Chapter 2, section 2.41) proposed setting different standards for different groups of authorities, in recognition of differing local circumstances. And suggested standards for 2003 at the following levels:

- Waste Disposal Authority areas with 1998/99 recycling and composting rates of under 5%, to achieve at least 10%

- Waste Disposal Authority areas that recycled or composted between 5% and 15% in 1998/99 to double their recycling rate

- The remaining Waste Disposal Authority areas to recycle or compost at least one third of household waste.

Q: What are your reactions to it?
4. Landfill Tax Credit Scheme and its reform: What are your reactions to the Landfill Tax Credit Scheme?

5. Tradable permits?

<p align="center">*******</p>

Annex 3b: Interview Index – Delhi (2002)

No.	Date	Organisation
1	12 February	Tata Energy Research Institute
2	10 February	Development Alternatives
3	4,10 February	Vatavaran
4	5, 18 February	Conserve
5, 5a	10 February	Asian Centre for Organisation, Research and Development (ACORD)
6	7 February	Srishti
7	7 February	Chintan
8, 8a	10 February	Centre for Science & Environment
9	4 February	World Environment Foundation
10, 10a	11 February	National Institute of Urban Affairs
11, 11a, 11b	20 February 20 February 15 February	Department of Environment (Government of National Capital Territory of Delhi)
12, 12a 12b	6 February 7 February	Municipal Corporation of Delhi
13	19 February	Planning Commission
14, 14a, 14b, 14c, 14d	19 February 12 February	Ministry of Environment & Forests (Government of India)
15, 15a	11 February	Central Pollution Control Board
16	14 February	Ministry of Urban Development & Poverty Alleviation
17, 17a	22 February	New Delhi Municipal Corporation
18	20 February 13 December 2004	Delhi Pollution Control Committee (DPCC)
19, 19a, 19b, 19c, 19d	8 February 12 February 6 February	Supreme Court
20	8 February	Delhi Mayor
21	20 February	MCD Councillor
22	4 February	Member of Parliament

23	3 February	Journalist, Chairperson of the Forum of Environmental Journalists in India & President of the International Federation of Environmental Journalists
24, 24a, 24b, 24c, 24d	7 February 21 February	Householders
25, 25a, 25b, 25c	15 February	Rag pickers
26, 26a	7 February	*Safai Karamcharis*
27	20 February	Central Public Health Environmental Engineering Organisation (CPHEEO)
28	7 February	Resident Welfare Association President (Greater Kailash Part 1)
29	8 February	Ex-politician, local government
30	12 February	Ministry of Non-Conventional Energy Sources
31, 31a	14 February	Confederation of Indian Industry
32	28 January (2000)	Excel Industries
33	19 February	Housing & Urban Development Corporation Ltd. (Government of India Enterprise)
34	11 February	National Capital Region Planning Board
35	10 February	Jawaharlal Nehru University
36	22 February	World Bank
37	22 February	United Nations Development Programme
38, 38a	19 February	Department for International Development (UK Government)

Annex 3c: Interview Index - London

No.	Date	Organisation
1	15 April 03/2 April 04 (phone)	Barking and Dagenham
1a	15 April 03	Resident, Barking and Dagenham
2	25 April 03	Sutton
2a	25 April 03	Resident, Sutton
3, 3a	17 July 03	Barnet
3b	17 July 03	Resident, Barnet
4	30 July 03	Waste Watch
4a	20 Aug 03	London Waste
5	23 Aug 03	DTI
6	28 Oct 03	The Environment Council
7	7 Nov 03	Green Alliance
8	2 Dec 03	The Environment Council
9	2 Dec 03	NRWF
10	30 Dec 03	DEFRA
11	19 Jan 04	Treasury
12	22 Jan 04	Street cleaner, Camden
13	23 Jan 04	ESA Telephone interview
14	4 Feb 04	SU Telephone interview
15	10 Feb 04	Labour MP
16	20 Feb 04	CO
17	20 Feb 04	Environmental Industries Commission
18	23 Feb 04	SHANKS
19	25 Feb 04	GLA (Waste Team)
20	1 Mar 04	MOD (ex-Strategy Unit Team Leader 'Waste Not Want Not')
21	2 Mar 04/ 1 April 04	CO
22	28 May 2004	Local Councillor (Conservative), Essex County Council, LGA, EA
23	28 May 2004	Biffa
24	10 June 2004 (phone)	ECT, London ReMade, Community Recycling Network
25	2 December 2004	GAIN
26	5 January 2006	Friends of the Earth
27	6 January 2006	South East London Health Protection Unit

Annex 4a: Environment in the various Five-year Plans

The Sixth Plan (1980-85) explicitly mentioned the environment as a separate Chapter (chapter 20) for the first time. The Seventh Plan (1985-90) gave priority to the generation of data to systematic monitoring of environmental parameters such as degree of waste water and effluent treatment, pesticide residues in water bodies, rate of change in population of endangered species, extent of waste land, rate of desertification, etc. It allotted only 0.43% of the budget to environmental issues. The Eighth Plan (1992-1997) emphasised coordination of environmental aspects with the working of individual sectors in each Ministry and decentralisation of the control of natural resources through participatory approaches.

The Ninth Plan (1997-2002) for environment and forests embodied the spirit of Agenda 21 in recognising the basic premise: environment management and economic development are mutually supportive aspects of the same agenda and that a poor environment undermines development while inadequate development results in lack of resources for environmental protection. The major activities were abatement of pollution (mainly industrial, vehicular and noise). Attempting to rectify the sub-optimal performance of schemes despite elaborate monitoring and evaluation systems it stressed on decentralised planning and development administration (as envisaged in 73rd and 74th Constitutional amendments) and tried to institute a strong evaluation machinery (and accountability) of implementing agencies (including participatory evaluation at both Centre and States) and an optimum use of public resources for development activities. The capabilities of the Evaluation Organisation (an independent organisation under the Planning Commission) were enhanced by pledging a greater flow of physical and financial resources ('Report of the Steering Committee on Environment, Forest and Wildlife, for the Tenth Five Year Plan (2002-2007)', Planning Commission (February 2002) TFYP Steering Committee Sr. No. 19/2001).

The Tenth Plan (2002-2007) proposed strengthening the Central and State Pollution Control Boards by training officers, upgrading laboratories, capacity building for increased and new responsibilities (and accountability) to ensure compliance. The strategies include encouraging multi-stakeholder participatory processes, supplementing command and control regime with market-based economic instruments and evolving environmental markets (at least on experimental basis). It aims for equity by revamping, restructuring and rationalising laws and institutions by making them pro-active, pro-people, pro-poor, pro-gender, pro-caste, pro-tribals, pro-handicapped, pro-rural and pro-marginalised. And evolving indicators of sustainability, promoting sustainable consumption (through awareness programmes) and production, institutionalising cross-sectoral and inter-disciplinary research and transparency in decision making towards a convergence of presently fragmented responsibility, infusing cutting edge scientific and technological inputs into the sector (remote sensing, GIS in monitoring) and environmentally sound disposal methods for sewage.

Annex 4b: Organisations not covered (in Delhi)

Government

a.   *Delhi Development Authority* – Statutory power from the DDA Act give it responsibility for planned development of Delhi, housing, parks, roads etc. However, it is criticised for being indifferent to environmental outcomes (MoEF, 2000) and preoccupied with real estate and housing issues instead of central planning (NIUA, 1998). The DDA is responsible to the Ministry of Urban Development.

b.   The *Environment Pollution (Prevention and Control) Authority* for the National Capital Region – set up in 1998 by the MoEF, initially for two years, was specifically entrusted with the task of monitoring progress of the action plan contained in the 1997 White Paper on Pollution in Delhi. It's functions include settings standards for the quality of the environment in its various aspects. While quite powerful with over-riding powers and a step in the right direction, the focus of this Authority has been on vehicular pollution, than MSW.

c.   *Ministry of Urban Development* – While matters pertaining to the housing and urban development are assigned to state governments by the Indian Constitution, the Government of India plays a much more important role and influence to shape policies and programmes of the country as a whole, especially through the indirect effect of its fiscal, economic and industrial location decisions.[6] The Constitutional authority of the Ministry is limited only to Delhi and other Union Territories, and to the subject which state legislatures authorise the Union Parliament to legislate. The Ministry prepared the National Housing Policy (1998), which lays down the environmental considerations while planning new settlements. With respect to Delhi, the Ministry has been allocated the following main areas – Delhi Development Authority, administration of Delhi Development Act (1957) and Delhi Rent Control Act (1958), Delhi Water supply and sewage disposal undertaking of the MCD, planning and coordination of urban transport systems, town and country planning matters, scheme of large-scale acquisition, development and disposal of land, Master Plan of Delhi (including slum clearance), development of Government colonies, allotment of government land, all matters relating to planning and development of the NCR, and matters of the Housing and Urban Development Corporation (HUDCO) relating to urban infrastructure. In 2004, the Ministry was bifurcated into two Ministries – Ministry of Urban Development and Ministry of Urban Employment and Poverty Alleviation.

d.   *National Productivity Council* does the Environmental Impact Assessments for potential landfill sites etc.

e.   *National Environment Appellate Authority* constituted to hear appeals with respect to rejection of proposals for development projects from the environmental angle.[7]

f.   The *Environmental Impact Assessment Authority* for the NCR deals with environmental protection problems arising out of projects planned in the Region.

NGOs

a.   ACCORD is aims to create public awareness regarding segregation of garbage at household level.[8] It helped the MCD however it was a one-off project.

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[6] Ministry of Urban Development (http://urbanindia.nic.in/mud-final-site/ministry/index.htm accessed 12 March 2003).
[7] Government of India *India 1999*, Delhi.
[8] MCD (www.municipalcorporationofdelhi.com accessed 12 February 2002).

Annex 4c: Main Indian legislation for sustainable development and waste management
(Adapted from various sources)

1972 - The Wildlife (Protection) Act provides for rational and modern wildlife management (amended in 1983, 1986 and 1991).

1974 - The Water (Prevention and Control of Pollution) Act (amended in 1988).

1976 - Specific provisions for the protection of environment have been incorporated by the Constitution (42 amendment) Act, 1976.

1977 - The Water (Cess) Act (amended in 1991).

1980 - The Forest (Conservation) Act enacted to check indiscriminate deforestation/diversion of forestland for non-forest purposes (amended in 1988).

1981 - The Air (Prevention and Control of Pollution) Act (amended in 1987).

1986 - The Environment (Protection) Act a landmark legislation providing for a nation-wide programme for the prevention, control and abatement of environmental pollution in the country. Recently (9th July 2002) amended for a third time. Empowers the Central Government to issue directions for the closure, prohibition or regulation of any industry, operation or process; or stoppage or regulation of the supply of electricity or water or any other service. It was promulgated under Article 253 of the Constitution of India, which empowered the Parliament to enact legislations on such matters as necessary for compliance of International Agreements in which India has been a party. It empowers citizens to complain and approach the judiciary for redressal of their grievances/concerns.

1989 - The Hazardous Waste (Management & Handling) Rules (amended in 2000).

1989 - The Manufacture, Storage and Import of Hazardous Chemicals Rules (amended in 2000).

1990 - The National Waste Minimisation Council (MoEF) sub-group on urban municipal waste management, recommends investment of Rs. 500 crores for improvement in solid waste management, 'Clean up fund' for innovative efforts in cities, segregation of broken glass and plastic bags from domestic waste and locating sanitary landfills at a distance from habitation limits.

1991 - The Public Liability Insurance Act (PLIA) provides for mandatory insurance for immediate relief to people affected by accidents occurring while handling any hazardous substances. Amended in 1992, it authorised the Central government to establish the Environmental Relief Fund, for making relief payments.

1991 - Scheme for labelling of Environmental Friendly Products (ECOMARK) launched.

1992 - National Conservation Strategy and Policy Statement on Environment and Development (June), MoEF.

1992 - Policy Statement for the Abatement of Pollution (February), MoEF.

1993 - Environment Action Programme (result of National Conservation Strategy and Policy Statement of 1992).

1993 - National Commission for Safai Karamcharis (sweepers) set up to abolish scavenging.

1993 - National Workshop on Urban SWM (MoEF) recommended that industries willing to recycle urban waste should be given fiscal incentives like tax holiday, soft loans and priority in the allocation of sites.

1994 - PIL 'Management of Municipal Solid Waste' Writ Petition (Civil) No.286/1994, Dr. B.L. Wadhera Vs Union of India & Ors. Filed under Article 32 of the Constitution the petition wanted the Supreme Court to issue directions to the Municipal Corporation of Delhi (MCD) and New Delhi Municipal Council (NDMC) to take action in accordance with the Municipal Laws specifically for collection, removal and disposal of garbage and other wastes. The writ petition was transferred the High Court of Delhi. It directed that waste should be lifted from collection centres everyday and transported to the designated place for disposal, installing incinerators in all hospitals, CPCB and Delhi Pollution Control Committee to regularly inspect different areas in Delhi, Government of NCT of Delhi to appoint Municipal Magistrates (Metropolitan Magistrates) for trying offences under the MCD and NDMC Acts. It also directed the Development Commissioner, Government of NCT of Delhi to handover the two sites near Badarpur or Jaitpur/Tejpur quarry pits and Mandi Village near Jaunpur quarry pits for landfill to the MCD within three months. The Union of India and NCT/Delhi Administration were to consider the request for financial assistance from MCD and NDMC for financial assistance and NCT/Delhi Administration were to engage an expert body like NEERI to find alternative methods of solid waste disposal in case non-availability of SLF methods.

1994 - Delhi Government constituted a Committttee (Chair Jagmohan) to suggest measures to make the capital clean.

1994 - Surat (western city) faces worst epidemic plague primarily due to accumulated filth and garbage.

1994 - EIA Notification which provided that any expansion or modernisation of any activity or a new project listed in schedule-I of the notification cannot be undertaken in any part of India without environmental clearance from the Central Government and introduced public hearings if needed for EIAs.

1995 - The National Environment Tribunal Act provided for strict liability for damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National Environment Tribunal for effective and expeditious disposal of cases arising from such accident, to give relief and compensation for damages to persons, property and the environment, and for matters connected therewith or incidental thereto.

1995 - MoEF and CPCB organised a meeting with municipal authorities and other concerned ministries to evolve a strategy for the management of MSW.

1995 - Waste-as-energy Policy promoted by the Ministry of Non-Conventional Energy Sources to promote waste to energy as an alternative to manage waste. Instituted financial incentives to industries and urban local bodies including state electricity boards for waste-to-energy projects.

1995 - Bajaj Committee a high powered Committee on Urban Solid Waste Management in India, constituted by the PC recommended source segregation of recyclable materials, municipal authorities employ rag pickers, legislative and administrative measures to promote the use of products made of recycled materials etc. None of them have been implemented.

1995 - MoEF constitutes Task Force to evaluate market-based instruments in abatement of industrial pollution.

1995 - The Housing and Urban Development Corporation (HUDCO) lowers interest rates for waste management schemes.

1995 - The Planning Board Act created the National Capital Region.

1996 - Public Interest Litigation – 'Management of Solid Waste in Class-I Cities – Writ Petition (Civil) No.888/1996 (Almitra H. Patel Vs Union of India & Ors.) wherein the petitioner alleged that the practices adopted by the municipalities for disposal of garbage in urban areas were faulty and deficient.

1997 - EIA (1994) modified to make public hearings compulsory for environmental clearance.

1997 - The National Environment Appellate Authority Act provides for the establishment of a National Appellate Authority to hear appeals against environmental clearance given by the Ministry.

1997 - National Plastic Waste Management Task Force (constituted by MoEF) recommends that for consumer items including plastic carry bags should contain a 50:50 blend with virgin plastics to ensure no degradation in the quality of the end products. It eluded the problem of generation of plastic waste focusing instead on the plastic industry taking a lead in supporting pilot collection schemes with the objective of channelising maximum post-consumer plastic waste for recycling. Recommends setting up an autonomous institution Indian Centre for Plastics in Environment to look after the problems related to the plastic industry.

1997 - Lt. Governor of Delhi directs police to assist in garbage management (a constable reports pile of garbage etc. to the police station which intimates the same to the civic authority).

1998 - Barman Committee constituted by the Supreme Court to report on 'Solid Waste Management in Class I cities in India' in response to the PIL filed by Almitra Patel in 1996. The report (1999) recognised the importance of rag pickers in reducing the financial burden of local bodies in collection, transportation and disposal of waste.

1998 - 'Action Points for Managing Municipal Solid Waste' by CPCB.

1998 - Bio-Medical Waste (Management & Handling) Rules.

1999 - Recycled Plastics Manufacture and Usage Rules, MoEF. Amended in 2002 - clarified that carry bags made of virgin or recycled plastics could not be manufactured, distributed or sold, below the size prescribed. No vendor shall use recycled plastic bags or containers were not to be used for storing, carrying, dispensing or packaging foodstuffs.

2000 - Municipal Solid Waste (Management and Handling Rules), prepared by the MoEF based on the recommendations of the Barman Committee Report (1999) in exercise of its powers under the EPA (1986).

2000 - The Delhi Plastic Bag (Manufacture, Sales and Usage) And Non-Biodegradable Garbage (Control) Act.

2000 - Manual on Municipal Solid Waste Management for Local Bodies, Central Public Health Environmental Engineering Organisation under the Ministry of Urban Development.

2000 - Noise Pollution (Regulation & Control) Rules.

2000 - Ozone Depleting Substances (Regulation & Control) Rules.

2001 - First deadline to implement MSW Rules for improving landfill sites passes. Local authorities cited financial constraints as the main reason for non-enforcement but the SC in *Municipal Council, Ratlam* vs. *Vardhichand* categorically stated that financial constraints do not absolve a municipality from performing its functions (George, 2002).

2001 - Ranganath Mishra Committee on Plastic Waste Disposal constituted by MoEF.

2001 - Batteries (Management & Handling) Rules.

2002 - Municipal Solid Wastes Processing Technologies: Reference Manual for Local Bodies, prepared by Central Pollution Control Board.

2002 - Recycled Plastics Manufacture and Usage Amendment Rules.

2002 - Biological Diversity Act.

2002 - Offshore Areas Mineral (Development & Regulation) Act.

2003 - Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade, Commerce, Production, Supply and Distribution) Act.

Annex 4d: Settlement of the ground at landfill site converted to a park

Ring Road Nizammudin landfill site converted to a park

Annex 4e: Rag pickers and cattle at Okhla landfill site

Annex 5a: Waste at Okhla landfill site

Annex 5b: Examples from the FAQ section from IPCE website*

Q. Are plastics eco-friendly?

A. In general, all man made products,during manufacture, processing and disposal,have an impact on the environment. The issue therefore is,which of these products under consideration ,will impose the least burden on the environment,and contribute to what is termed-"sustainable development". As you read on the haze created by the media,might clear to reveal the genuine role of plastics in the environment. This is best expressed in the following Quotation: "There is a perpetual danger of thinking you can find out the truth merely by being clever.he truth is that you have to work doggely at the facts"(Dr.Ronald Broadbent in the New Scientist-July'73).

Q. Do plastics make-up a large part of the Municipal solid waste?

A. NO. A study conducted by the National Environmental Engineering Research Institute,Nagpur for the BMC,puts the figure at 0.75%. Even in Europe and U.S.A.,with per capita consumption of plastics at over 50kgs per annum(India is 2.7kgs per annum),plastic waste makes up 8% of the total municipal solid waste.The rest is made of organic materials(33%)paper &board(30%)glass and metal(16%)and others(13%). Plastics make a significant contribution by reducing the weight and volume of materials that are typically thrown away.Unfortunately in India waste is littered ,insted of deing disposed ,to facilitate collection and recycling.

Q. Who should take responsibility of plastics environmental issue?

A. We all share the responsibility of plastics environmental issues. Any issue, which concerns the community, has to be resolved with the co-operation of all involved; it is a "shared responsibility". Those involved are Government, Municipalities, the raw material manufacturers, the converters, the food and personal product manufacturers, the retailers, and consumers. Because domestic waste is a mixture of materials of which plastic is only a small component, under 2% by weight, it is the responsibility of the government to manage waste and to regulate its disposal. It's the responsibility raw material and packaging manufacturers to come up with the most cost efficient solutions, which will preserve and protect goods, minimize the use of energy and reduce the weight and volume of waste. Food and personal product manufacturers, retailers and consumers need to be aware of the benefits of plastics packaging and the need to dispose plastics in a manner which leads to increasing emphasis on recycling . Everyone must understand that the environmental legacy we leave behind for future generations will depend on our resolve to: REDUCE - REUSE - RECYCLE And finally let us agree that: PLASTICS DO NOT LITTER, PEOPLE DO.

* This is an exact copy of the site, inclusive of its grammatical errors. Source: www.ipcenviro.org accessed 12 July 2003.

Annex 6a: Organisations not covered (in London)

Parliament/Government

a. *Associate Parliamentary Sustainable Waste Group* - With over 100 parliamentary members, the Group was created in 1995 as a forum for debate on sustainable waste management and aims to develop a deeper understanding between parliamentarians, business leaders and the waste sector. It is 'one of the best supported and most vibrant parliamentary groups'.[1] However, it was not mentioned in any of the interviews.

b. The *Better Regulation Task Force* (BRTF) of the CO aims to ensure good regulation is practiced.[2] The BRTF and the Policy Hub are initiatives in awareness and acknowledgement of the need for policy coordination amongst not only different government departments but also for central-local synchronisation.

c. The *Local Authority Support Unit*, created in response to the SU report, aims to develop an enhanced waste support infrastructure to help local authorities overcome the barriers to improved performance, and meet, or exceed, challenging statutory targets on recycling and composting of municipal waste. It aims to work alongside existing local authority networks and other organisations to make support better, more accessible and 'joined up'.

d. Regional Technical Advisory Boards (see Davoudi, 2001b, p. 206, for a brief overview).

e. The National Audit Office which 'scrutinises the performance of departments and their agencies on selected issues' (Rydin, 2003, p. 92).

f. Sponsored by the CO, the *Sustainable Development Commission* (SDC) was launched on 24 October 2000, with an emphasis on building a new coalition for the environment as proposed in the White Paper *A Better Quality of Life*. It subsumed the UK Round Table on Sustainable Development and the British Government Panel on Sustainable Development. The Commissions acts as a 'critical friend' of DEFRA, reviewing progress made both within the department and across Government, criticising missed opportunities and offering new suggestions for improving society's quality of life.[3] The Commission has called upon DEFRA to fulfil their roles as champions of sustainable development across the public sector but has largely failed 'to demonstrate its influence although it has not flinched from being highly critical of the government's performance' (Rydin, 2003, p. 91).

g. The *Prime Minister's Delivery Unit* (part of the CO) was established in June 2001 with the over-riding mission to ensure the delivery of the Prime Minister's top public service priority outcomes by 2005. The Unit reports to the Prime Minister through the Head of the Civil Service and the Minister for the Cabinet Office, and is headed by Professor Michael Barber, the Prime Minister's Chief Adviser on Delivery.

h. *Audit Commission*, set up as an independent public body responsible for ensuring that public money is spent economically, efficiently, and effectively, it aims to be the driving force in the improvement of public services.[4]

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[1] Group website - www.pswg.org.uk/about.html accessed 20 December 2004.

[2] The BRTF, established in September 1997, as an independent body advises the government on action to ensure that regulation and its enforcement accord with the five principles of good regulation – proportionality, accountability, consistency, transparency and targeting. It does this by carrying out studies of particular regulatory issues ending in detailed reports to which Ministers are required to respond within 60 days of publication. Because of limited resources only key organisations and individuals, Ministers and government departments are consulted (www.brtf.gov.uk/ accessed 5 March 2004).

[3] 'Agenda: Where next for sustainable development?' (2003) SDC, London. (www.sd-commission.gov.uk/pubs/agenda2003/index.htm accessed 20 April 2004).

[4] Website: www.audit-commission.gov.uk/aboutus/index.asp accessed 20 January 2005.

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i. The *Regional Technical Advisory Boards* play a key role in the implementation of self-sufficiency by providing information about existing waste management facilities and the volumes of waste to be managed (DTLR, 2002).

j. *London Waste Action* represents a working partnership between the public, private and independent sectors. Established in 1997, the company aims to promote waste management practices which promote the conservation, protection and sustainability of the physical and natural environment in and around London. Along with the Mayor and the ALG, it support and operates the London Recycling Fund.[5]

NGOs

a. The *Women's Environmental Network* (WEN) started in 1988 represents women and campaigns on issues which link women, environment and health. Waste is a campaign area for WEN.

b. The *Centre for Environmental Initiatives* (Sutton.) is an independent community organisation run by local people with a specific interest in the environment and sustainable development.[6]

c. Furniture Recycling Network is the national co-ordinating body for 300 furniture and appliance re-use and recycling organisations, which exist across the UK.[7]

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[5] Website: www.londonwasteaction.org/index.html accessed 18 December 2004.
[6] Website: www.thecei.org.uk accessed 16 May 2003.
[7] Website: www.crn.org.uk/about/cases/frn.shtml & http://www.frn.org.uk/ accessed 16 May 2003.

Annex 6b: Main UK legislation for sustainable development and waste management
(Mainly from 1990s - adapted from various sources)

1989 - *Sustaining Our Common Future* was a first attempt to set out policy aims and measures for the UK specifically directed towards achieving sustainable development.

1989 - Control of Pollution (Amendment) Act established a system requiring carriers of controlled waste to register with regulators (EA).

1990 - Environment Protection Act (EPA)

1990 - *This Common Inheritance* White Paper on Environment

1992 - The Private Finances Initiative introduced under the 1992 Finance Act.

1993 - Council Regulation 259/93/EEC on the supervision and control of shipments of waste within, into and out of the European Community establishes a system of supervision and control of all movements of waste.

1994 - *The UK Strategy* HMSO stating the strategy for sustainable development.

1994 - Waste Management Licensing Regulations set out the requirements to obtain a waste management licence. They also grant exemptions for certain activities from the waste management licensing requirements.

1994 - Planning Policy Guidance Note 23: Planning and Pollution Control - comprehensive advice on the relationship between planning and pollution control. Much of this Guidance was superseded by Planning Policy Guidance 10 on planning and waste management.

1994 - Transfrontier Shipment of waste regulation.

1995 - *Making Waste Work* - waste management strategy for England and Wales

1995 - The Environment Act primarily created the EA and amended the EPA (1990). It also introduced new legal provisions on contaminated land.

1996 - Waste Framework Directive introduced through waste management licensing regulations (1996)

1996 - London Pride Waste Action Programme (LPWAP) launched (in response to a request from government for a waste strategy for London) by the ALG, the London Planning Advisory Committee (LPAC), the London Waste Regulation Authority (which became part of the Environment Agency in April 1996) and the Government Office for London. First such city-wide programme in the UK, it involved 37 different collection and disposal authorities and was considerably larger and more ambitious in scope than any previous scheme. The Programme grew out of the work of the London Pride Waste Action Programme (LPWAP). The private sector was involved in the programme through London First.

1996 - Landfill tax introduced by the 1996 Finance Act - which also allowed up to 20% of the taxes collected by landfill operators to be claimed against environmental projects. The Landfill Tax Credit Scheme used these funds to encourage more sustainable waste management practices and technologies, as well as partnerships between landfill operators and local communities.

1996 - Special Waste Regulations which implement the Hazardous Waste Directive and any waste on the EC Hazardous Waste List; updated since the introduction of the European Waste Catalogue which redefines what is classified as hazardous.

1996 - Landfill Tax (qualifying material) Order - regulations on inert materials going to landfill.

1997 - Landfill Tax (contaminated land) Order - provides for an additional exemption from the new landfill tax in respect of disposal of waste material that has resulted from certain land reclamations.

1997 - Landfill Tax Regulations provided for the administration and assurance of landfill tax.

1997 - Special Waste Regulations implements Council Directive 91/689/EEC on hazardous waste, provides a new definition of special waste and make provision for handling such waste.

1997 - Producer Responsibility Obligations (Packaging Waste) Regulations which transpose the targets for recovery and recycling of waste set out in the EC Directive on Packaging and Packaging Waste 94/62/EC. Impose obligations on producers to recover and recycle packaging waste.

1998 - *Sustainability Counts*.

1998 - *Less Waste, More Value* a waste strategy consultation paper to enforce waste hierarchy, promoting waste minimisation and expanding green taxation.

1998 - Sustainable Development: Opportunities for Change: A Consultation Paper on a Revised UK Strategy with subsequent analysis of responses and monitoring of progress in 1999.

1998 - *Sustainable Business – A consultation paper on sustainable development and business in the UK* (DETR).

1998 - *Sustainable Construction* (DETR).

1998 - 'Competitiveness of recycling industries' communication from the EC.

1998 - Waste Minimisation Act, first piece of legislation to target minimisation. It enables, but does not oblige, certain local authorities to make arrangements to minimise the generation of waste in their area; and for related purposes. However, they are not permitted to impose any restriction or requirements on businesses or individuals. They can therefore initiate waste minimisation strategies in waste plans, provide public information about alternatives to wasteful products, include waste reduction targets in waste contracts and introduce repair schemes for household appliances.

1999 - Local Government Act, which gave councils a duty to achieve *Best Value* in all their operations.

1999 - Various policy documents towards Sustainable Development (SD) strategy: *Better Quality of life* (based on its recommendations a Sustainable Development Commission was established that subsumed the UK Round Table on SD and the British Government Panel on SD), 'Sustainable Development factsheets' and 'Quality of Life counts'.

1999 - *A Way with Waste: draft waste strategy for England and Wales* (DETR) which superseded *Less Waste, More Value* and leaned heavily towards incineration as the central plank of waste recovery policy over the next 20 years (Biffa, 2000).

1999 - *New and Renewable Energy Prospects for the 21st Century*, DTI.

1999 - *Review of the National Air Quality Strategy: Proposals to amend the Strategy*.

1999 - *Chemicals in the Environment: A Strategy for the UK*.

1999 - *A Better Quality of Life*, Government's SD Strategy.

1999 - *Quality of life counts: Indicators for sustainable development for the UK: a baseline assessment* DETR publication which covers the social, economic and environmental dimensions of sustainable development contained in 'A better quality of life'.

1999 - *Limiting Landfill: A consultation paper on limiting landfill to meet the EC Landfill Directive's targets for the landfill of biodegradable municipal waste* was published to stimulate debate on ways of meeting the requirements of the Landfill Directive and its associated targets for reducing the amount of biodegradable municipal waste being sent to landfill.

1999 - Waste Management Licences (Consultation and Compensation) Regulations gives power to the Environment Agency to impose waste management licence conditions.

1999 - Landfill Tax (Site Restoration and Quarries) Order provides two additional exemptions from landfill tax - material used to restore landfill sites and to fill existing or former quarries.

1999 - Pollution Prevention and Control Act provides for a new pollution control system to meet the requirements of European Council Directive 96/61/EC on Integrated Pollution Prevention and Control.

1999 - Planning Policy Guidance 10: Planning and Waste Management, which set out government's policies on planning with respect to waste management – advice on how the land-use planning system should contribute to sustainable waste management through the provision of the required waste management facilities in England, and how this provision is regulated under the statutory planning and waste management systems.

1999 - Animal By-Products Order (amended in 2001) places restrictions on the disposal of animal by-products. It sets criteria for the collection and transport of animal by-products, their incineration and burial, among other items.

2000 - *Waste Strategy for England and Wales*, (National Waste Strategy) DEFRA which set tough statutory targets for recycling; developing new markets for recycled waste; turning public sector purchasing green; giving more producers responsibility for recycling of used products; and enlisting householders in the drive to recycle and compost more waste. This was hoped to improve the UK's record of having one of the worst recycling rates in Europe. (Local authorities to recycle 17% of their waste by 2003, almost double the current amount, and by 2015 at least 33%. The targets were to be reviewed, made more tougher, if technology improved, included cutting landfill of biodegradable waste by around 66% by 2020).

2000 - Local Quality of Life counts

2000 – Pollution Prevention and Control (England and Wales) Regulations, set out a pollution control regime for the purpose of implementing the Integrated Pollution Prevention and Control Directive.

2000 - The Environmental Technology Best Practice Programme re-launched as ENVIROWISE.

2001 - Implementation of the EU Landfill Directive in the UK.

2001 - 'Waste Summit' organised by Secretary of State Margaret Beckett towards delivery of Waste Strategy

2001 - *Consultation Paper on recovery and recycling Targets for Packaging Waste in 2001 - The Producer Responsibility Obligations (Packaging Waste) Regulation*, DETR, proposed to increase the packaging

waste recovery target from 52% to 58% and the material specific recycling target from 16% to 18%, and concludes that the current targets for 2001 will not be sufficient for the UK to meet its EU obligations.

2002 - *Waste Not Want Not* Cabinet Office's Strategy Unit review of UK waste policy

2002 - *Waste Incineration (England and Wales) Regulations* made under the Pollution Prevention and Control Act 1999, transpose the EU's Waste Incineration Directive (2000/76/EC); applied immediately to all new incinerators and to all existing installations from December 2005; implementation carried out mainly under the existing Pollution Prevention and Control regime.

2002 - *Renewables Obligation Order (England and Wales)* represents the principal driver for renewable energy technologies, replacing the Non-Fossil Fuel Obligation. Aims to develop market for electricity from renewable sources, thereby help electricity industry meet Government's commitment to supply 10% of country's electricity needs from renewable sources by 2010. It creates a market for Renewables Obligation Certificates that need to be shown by every energy supplier to prove that they have sourced a set percentage of the energy they supply from renewable means.

2002 - *Landfill (England and Wales) Regulations* incorporating the EU Landfill Directive (except Articles 5.1 and 5.2). It defines and classifies landfill, and the states the conditions to be included in landfill permits, waste acceptance and prohibition criteria for different classes of landfill, closure and aftercare procedures.

2002 - Regulation (EC) No. 2150/2002 of the European Parliament and of the Council on waste statistics [Official Journal L 332 of 09.12.2002] to establish a framework for the production of Community statistics on the generation, recovery and disposal of waste regarded essential for the Community waste management policy is to be monitored effectively.

2003 - *Rethinking Rubbish in London*, Mayor's Municipal Waste Management Strategy (23 September)

2003 - *Household Waste Recycling Act* (sponsored by Joan Ruddock, MP). The Act requires all English local authorities to provide kerbside collections for all households for a minimum of two materials by 2010.

2003 - *Waste and Emissions Trading Act* aims to implement Articles 5.1 and 5.2 of the EU Landfill Directive, which contains targets to reduce the amount of biodegradable waste landfilled. It introduces a system of tradeable permits in England. The total allowances are calculated so that the sum total of permitted landfilling in the UK would meet the targets of the Landfill Directive. The permits are allocated free to waste disposal authorities; those that divert waste from landfill (by recycling) will be able to trade their permits to those which do not. The permits themselves do not reduce landfill, which requires sustained efforts of local authorities, but will benefit those that take early action to reduce landfill. The system aims to minimise the cost of meeting Landfill Directive obligations whilst giving local authorities the greatest amount of freedom in how they meet their targets.

2003 - The LTCS reformed from 1 April, with around one third of the funding available through a reformed tax credit scheme for spending on local community environmental projects. The remainder, around £100 million in 2003–04 rising to £110 million in 2004–05 and 2005–06, will be allocated to public spending to encourage sustainable waste management.

2004 - Wholesale review of Landfill Tax

2004 - End of Life Vehicle Directive.

2004 - WEEE Directive.

2004 - *The Landfill Tax (Amendment) Regulations* amend the Landfill Tax Regulations 1996, and increase the maximum credit that landfill site operators may claim against their annual landfill tax liability.

2004 - *The Waste and Emissions Trading Act 2003* (Commencement No. 1) Order brought into force the Waste and Emissions Trading Act 2003 (Sec. 2 and 39). Section 2 of the Act enables the Secretary of State to make regulations specifying the amount of biodegradable municipal waste to be landfilled in a scheme year. Section 39 of the Act provides that the penalty provisions of the UK Greenhouse Gas Emissions Trading Scheme 2002 shall have statutory effect between parties who have entered into a participation agreement.

2004 - *The Packaging (Essential Requirements) (Amendment) Regulations 2004* came into force on 24 May 2004 and amend the Packaging (Essential Requirements) Regulations 2003 which implemented Articles 9 and 11 of the EU Directive 94/62/EC on packaging and packing waste listing essential requirements for packaging. The Regulations amend the definition of 'packaging' to include additional criteria for deciding whether an item is packaging and provide illustrative examples to aid application. They also correct errors in the 2003 Regulations.

2004 - *The Environmental Protection (Waste Recycling Payments) (England) Regulations* came into force on 1 April 2004, revoke and replace the Environmental Protection (Waste Recycling Payments) Regulations 1992 in relation to England. These Regulations discharge the Secretary of State's duty to make

provision for the determination of a waste disposal authority's net saving of expenditure due to the retention of waste by waste collection authorities or others for recycling under the Environmental Protection Act 1990 (Sec. 52).

2004 - *The Pollution Prevention and Control (Unauthorised Part B Processes) (England and Wales) Regulations amend the Pollution Prevention and Control (PPC) (England and Wales) Regulations 2000* to close a loophole making Part B installations operating illegally without authorisation under the EPA 1990 benefit from the 'deemed application' process. These Regulations (enforced on 17 March 2004) require installations that should have had an authorisation under the 1990 Act must make a full PPC application and would be liable to enforcement action if operating without a PPC permit.

Annex 6c: Categories of waste

Q1   Production or consumption residues not otherwise specified below

Q2   Off-specification products

Q3   Products whose date for appropriate use has expired

Q4   Materials spilled, lost or having undergone other mishap, including any materials, equipment, etc., contaminated as a result of the mishap

Q5   Materials contaminated or soiled as a result of planned actions (e.g. residues from cleaning operations, packing materials, containers, etc.)

Q6   Unusable parts (e.g. reject batteries, exhausted catalysts, etc.)

Q7   Substances which no longer perform satisfactorily (e.g. contaminated acids, contaminated solvents, exhausted tempering salts, etc.)

Q8   Residues of industrial processes (e.g. slags, still bottoms, etc.)

Q9   Residues from pollution abatement processes (e.g. scrubber sludges, baghouse dusts, spent filters, etc.)

Q10   Machining/finishing residues (e.g. lathe turnings, mill scales, etc.)

Q11   Residues from raw materials extraction and processing (e.g. mining residues, oil field slops, etc.)

Q12   Adulterated materials (e.g. oils contaminated with PCBs, etc.)

Q13   Any materials, substances or products whose use has been banned by law

Q14   Products for which the holder has no further use (e.g. agricultural, household, office, commercial and shop discards, etc.)

Q15   Contaminated materials, substances or products resulting from remedial action with respect to land

Q16   Any materials, substances or products which are not contained in the above categories.

Annex 6d: Boroughs as Waste Authorities

Barking and Dagenham	WCA
Barnet	WCA
Bexley	UA
Brent	WCA
Bromley	UA
Camden	WCA
Croydon	UA
Ealing	WCA
Enfield	WCA
Greenwich	UA
Hackney	WCA
Hammersmith and Fulham	WCA
Haringey	WCA
Harrow	WCA
Havering	WCA
Hillingdon	WCA
Hounslow	WCA
Islington	WCA
Kensington and Chelsea	WCA
Kingston-upon-Thames	UA
Lambeth	WCA
Lewisham	UA
Merton	UA
Newham	WCA
Redbridge	WCA
Richmond upon Thames	WCA
Southwark	UA
Sutton	UA
Tower Hamlets	UA
Waltham Forest	WCA
Wandsworth	WCA
Westminster City Council	UA
Groupings of boroughs as WDAs	.
East London Waste Authority (ELWA)	WDA
North London Waste Authority (NLWA)	WDA
West London Waste Authority (WLWA)	WDA
Western Riverside Waste Authority (WRWA)	WDA

Source: Municipal Waste Management 2000/1 DEFRA. WCA = Waste Collection Authority.
UA = Unitary Authority. WDA = Waste Disposal Authority.
(www.defra.gov.uk/environment/statistics/wastats/archive/index.htm accessed 19 April 2003)

Annex 6e: Principles/instruments underlying UK's MSW policy

Principles
Waste hierarchy
Integrated waste management
Self-sufficiency
BPEO
Proximity
IPC
BATNEEC
Site selection (planning)
Environmental protection

Instruments
Landfill tax
Tradable Permits
PRNs
Private Finance Initiative
BV Framework (previously CCT)

Annex 6f: Comparison of the three London Boroughs (mainly for 2002-03)

Feature/Borough	Barking & Dagenham	Barnet	Sutton
Party in power	Labour	Conservative	Liberal Democrats
No. of Households (population)	68308 (166149)	116,000 (316869)	76,659 (181428)
Cost of waste collection/household	£31.30	£39.70	£47.50
Cost of waste disposal/year	£27.078 million*	£77 million (excluding collection costs)	n.a.
Rate of recycling/ statutory targets (2003-04)	4% (10%)	12.5% (18%)	20% (33%)
No. of collection rounds/week (whole Borough)	40	16	11
No. of bring sites	113	51	260
Transport/transfer station	Road & rail/ Jenkins Lane (transfer station)	Road & rail/Hendon (transfer station)	Road/Mitcham (MRF)

Source: Borough websites, www.capitalwastefacts.com/ and interviews. * = Estimate for 2003/04 from ELWA website (http://www.eastlondonwaste.gov.uk/html/about/abouttxt.htm accessed 14 February 2006).

Annex 7a: Greenpeace protest at Edmonton (photo courtesy – Greenpeace)

Protestors scale the plant

They seal off the chimney flue to ensure that the incinerator cannot be restarted
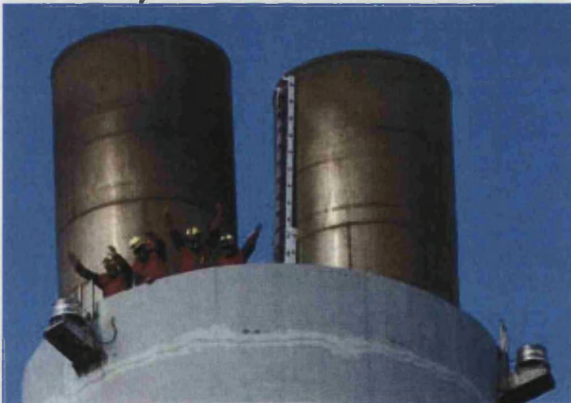
Four Greenpeace volunteers and a photographer go on trial at Wood Green Crown Court on May 30th charged with conspiracy to commit criminal damage and criminal damage. The charges relate to the Greenpeace occupation of Edmonton municipal waste incinerator (North London) in October 2000 when the volunteers occupied the top of the chimney for a period of four days and temporarily prevented the incinerator from operating by blocking the flue.[8]

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[8] See Greenpeace -
www.greenpeace.org.uk/contentlookup.cfm?CFID=2700915&CFTOKEN=42253050&SitekeyParam=D-D-C for more details (accessed 12 January 2005).

Annex 7b: Decrease in recycling*

Percentage of respondents regularly recycling

per cent of respondents

| | 1993 | 1996/7 | 2001 |

■ Paper ■ Glass ■ Cans ■ Plastic ■ Kitchen waste

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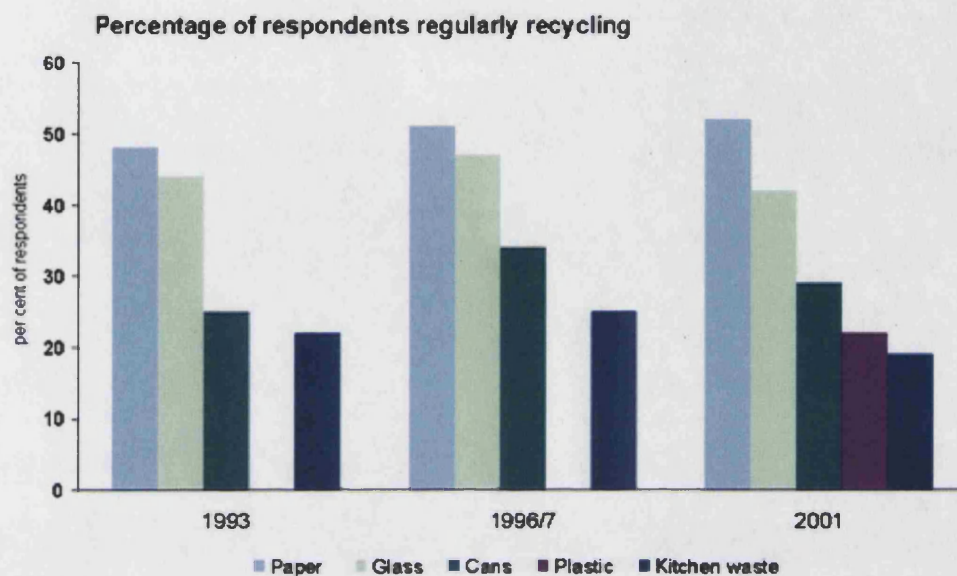
* Less than a quarter of respondents claimed to have regularly taken plastic to a recycling facility or separated it from rubbish for collection. This question was introduced for the first time in the 2001 survey (DEFRA).

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Annex 7c: Percentage of respondents 'very worried' about each environmental issue: 2001, England*

Source: Defra
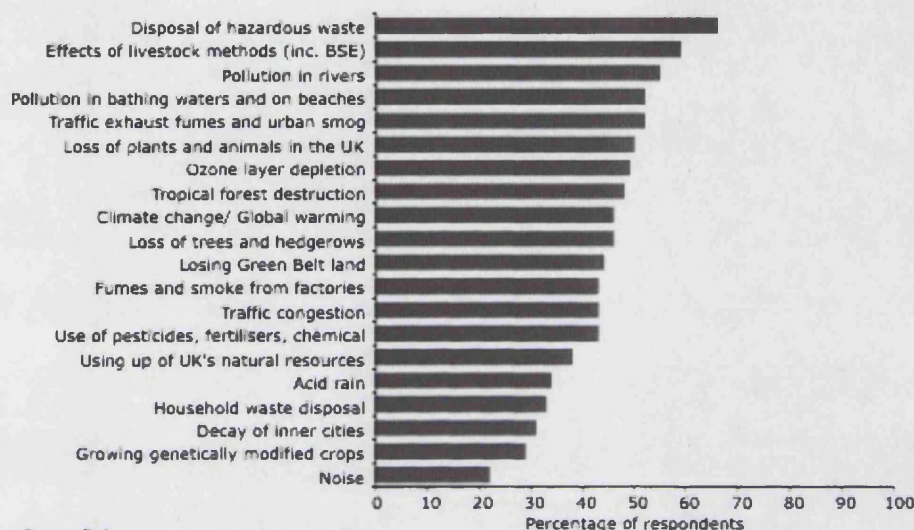
Figure 4.1: Percentage of respondents 'very worried' about each environmental issue: 2001, England

Source: Defra

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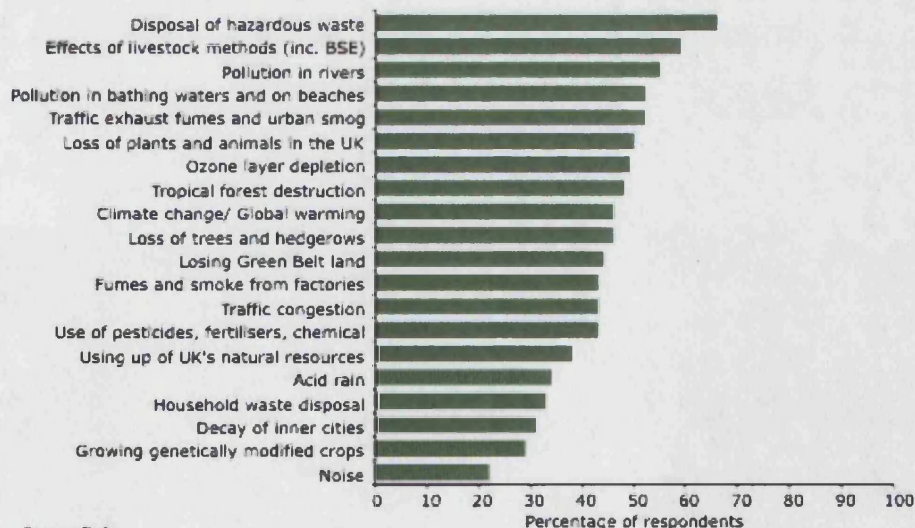
* Over 3,700 people were interviewed (a survey response rate of 68.4%), across the nine English Government Office Regions, compared with 1,780 in the 1996/7 survey, covering both England and Wales (DEFRA).

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