

**Environmental health regulation in urban South Africa:
a case study of the Environmental Health Practitioners of the
City of Johannesburg Metropolitan Municipality**

Rob Couch

A thesis submitted in partial fulfillment of the requirements
of London South Bank University for the
Doctor of Philosophy degree

This research was carried out in collaboration with the
Medical Research Council of South Africa,
the University of Johannesburg and the
City of Johannesburg Metropolitan Municipality

September 2016

Abstract

Environmental health is concerned with relations between the environment and human health and their management and remains a considerable public health challenge into the 21st century, particularly for cities where more than half the world's population now lives. In South Africa local government Environmental Health Practitioners (EHPs) have been regulating local environmental health since Victorian times and are well placed to bring protective and developmental laws to life but are confronted by challenges not dissimilar to their Victorian forebears. The main research question is therefore: how do the EHPs of the City of Johannesburg Metropolitan Municipality (CoJ) regulate environmental health? A literature review developed an interdisciplinary model of governance to describe and explore how EHPs regulate environmental health (EH) and the factors that could influence this process. This model utilised a socio-legal framework grounded in theoretical perspectives from criminology, history, the law, organisational studies, political science and sociology.

A multiple case study strategy was developed to test this model. Qualitative methods were conducted on 10 street-level case EHPs from four CoJ regional offices through observation, interviews, questionnaires and the analysis of regulatory documents. These were supplemented by observations and interviews with other street-level EHPs and their managers and the analysis of other relevant documents, including quantitative data on the activities of CoJ EHPs.

A new model of governance was developed by this thesis to describe, analyse and explain how CoJ EHPs regulate and found most of their work focused on a traditional regulatory 'law enforcement' pathway alongside other activities, notably an EH monitoring role for other CoJ departments and provincial government. But contrary to their Victorian inspector stereotype, EHPs behaved as responsive regulators and used mainly persuasive approaches (e.g. education, advice, negotiation), with more punitive approaches generally used for serious cases or when persuasion fails. This responsiveness was limited by factors including resources and weaknesses in more punitive approaches. A second regulatory pathway involving EH project and promotion activities was documented but remained secondary to traditional regulatory work.

In conclusion, the model of governance conceptualised urban EH regulation as the continuous circulation of power within and between EHPs and local government itself, other spheres of government and civil society. Power was unequally distributed between these actors, but there were many opportunities for challenging power that were rarely captured or closed. Local government EHPs are therefore contributing towards making cities more productive, inclusive, sustainable and better governed and the model of governance created by this thesis was a useful tool for exploring their work.

Table of contents	
Abstract	ii
List of abbreviations	vii
Acknowledgements	viii
Chapter 1 Environmental health regulation in urban South Africa	1
1.1 Introduction and thesis overview	1
1.2 What is environmental health?	3
1.3 The dynamic and wicked nature of environmental health	3
1.4 Why South Africa and Johannesburg?	9
1.5 Why local government EHPs?	14
1.6 Conclusions	16
Chapter 2 Environmental health regulation as governance	17
2.1 Introduction	17
2.2 What is environmental health regulation?	17
2.3 Environmental health regulation as governance	19
2.4 Introducing responsive regulation	23
2.4.1 Policy implementation to regulation: expanding socio-legal frameworks	23
2.4.2 What is responsive regulation?	25
2.4.3 A critique of responsive regulation	29
2.5 A governance model of environmental health regulation	33
2.5.1 An overview of the governance model	33
2.5.2 The regulatory context	35
2.5.3 The legal framework for environmental health regulation	39
2.5.4 Local government and its environmental health services	43
2.5.5 The backgrounds and views of EHPs	45
2.5.6 Relationships with the regulated	49
2.6 Existing gaps in the literature	52
2.7 Research aim and objectives	53
Chapter 3 Methods	54
3.1 Introduction	54
3.2 Relativist epistemology and the case study strategy	54
3.3 Case study design	54
3.3.1 A multiple-case, holistic design	54
3.3.2 Pilot studies in London and Ekurhuleni	55
3.3.3 Accessing and identifying potential EHP cases	58
3.3.4 Selecting individual EHP cases	60
3.3.5 Methods of data collection	62
3.3.5.1 Observation	64
3.3.5.2 Semi-structured interviews	67
3.3.5.3 Stories	68
3.3.5.4 Questionnaires	68
3.3.5.5 Collection of documents	69
3.4 Data analysis	69
3.5 Reflections on the case study design in practice	70
3.5.1 Flexibility of the case study design	70
3.5.2 Research ethics and the influence of the author	71
3.5.3 The impact of personal safety concerns on the case study	74
3.6 Conclusion	75

Chapter 4 The EHP in the City of Johannesburg and the regulatory context	76
4.1 Introduction	76
4.2 Environmental health in the CoJ	77
4.2.1 An overview of the CoJ	77
4.2.2 The Environmental Health sub-directorate	78
4.2.3 Who are the case-EHPs?	81
4.3 The working days of EHPs	83
4.4 Introducing the regulatory strategies of CoJ EHPs	87
4.4.1 Detecting the EH offence	87
4.4.2 Referral or gathering and interpreting evidence	88
4.4.3 Monitoring reports	88
4.4.4 Confirming the pyramid of responsive regulation	88
4.4.5 Moving up and down the regulatory pyramid	90
4.4.6 Environmental health project and promotion activities	92
4.5 The proactive and reactive approaches of EHPs	94
4.6 External factors: The regulatory context	97
4.6.1 Historical context	98
4.6.2 A neoliberal macroeconomic policy context	99
4.6.3 EH in Johannesburg and public and media attitudes to regulation	102
4.7 Conclusions	105
Chapter 5 Legal and organisational factors	107
5.1 Introduction	107
5.2 The legal framework for environmental health regulation in the CoJ	107
5.2.1 Rights and reasonableness: the <i>Constitutional</i> framework for EH	107
5.2.2 What are municipal health services?	112
5.2.3 Minimum legal standards and the inevitability of discretion	113
5.2.4 The uncertain criminality of environmental health offences	115
5.2.5 The variable powers of EHPs	118
5.2.6 Sanctions for environmental health offences	119
5.2.7 The uncertain role of the local government EHP	120
5.2.8 The statutory position of EHPs	121
5.3 Organisational factors	124
5.3.1 The strategic developmental framework of the CoJ and EH	124
5.3.2 Monitoring work for other CoJ organisations and provincial government	126
5.3.3 CoJ controls: Relations between EHPs themselves and their Managers	132
5.3.4 CoJ controls: The influence of performance management	135
5.3.5 CoJ controls: Relations between EHPs and politicians	141
5.3.6 CoJ controls: Resources for the Environmental Health sub-directorate	144
5.4 Conclusions	148
Chapter 6 Individual factors: The backgrounds and views of EHPs	149
6.1 Introduction	149
6.2 The backgrounds of EHPs	149
6.3 EHPs' perceptions of their roles and motivations	150
6.4 The views of EHPs as professionals	156
6.5 The personal safety of EHPs	159
6.6 The EHP as Peace Officer	162
6.7 The general views of EHPs about regulatory law enforcement	165
6.8 The uncertain criminality of environmental health offending	167
6.9 EHPs' views of criminal sanctions and the criminal courts	169
6.10 Conclusions	175

Chapter 7 External factors: Relations with the regulated	176
7.1 Introduction	176
7.2 Typologies of the regulated	176
7.3 The severity and persistence of offending	179
7.4 The character of the regulated	180
7.5 The ethnicity, nationality and culture of the regulated	183
7.6 The influence of morality on relations with the regulated	185
7.7 Regulating the informal sector	190
7.8 The potential for corruption	193
7.9 Conclusions	196
Chapter 8 Discussion of results	197
8.1 Revisiting the theoretical framework for regulation	197
8.2 A solid and flexible foundation: EHPs as responsive regulators and promoters	199
8.3 The limits on the regulatory activities of CoJ EHPs	201
8.4 CoJ EHPs: bringing developmental local government and the SDGs to life?	203
8.5 Balancing environmental health and economic interests	204
8.6 Political and professional influences on EH regulation	205
Chapter 9 Conclusions and recommendations	207
9.1 Revisiting the research question, aim and objectives	207
9.2 The governance model of regulation: completing the first two objectives	207
9.3 Original contributions to knowledge	208
9.3.1 Revisiting the gaps in literature	208
9.3.2 A contribution to the knowledge of how local government EHPs regulate urban environmental health in South Africa	208
9.3.3 A contribution to the knowledge of how local government EHPs regulate urban environmental health in developing countries	209
9.3.4 A contribution to the knowledge of EH regulation as governance	210
9.3.5 A contribution to the knowledge of EH regulation as development	210
9.4 Policy recommendations: completing the third objective	210
9.4.1 What might ‘good enough’ regulation look like?	210
9.4.2 Promoting the contributions of EHPs towards a better South Africa	214
9.4.3 Towards a more evidence based EH?	214
9.5 Reflections on the strengths and weaknesses of the research	215
9.6 Recommendations for future research	216
Bibliography	218
List of legislation	239
Appendix A Regional Environmental Health Manager briefing	240
Appendix B EHP briefing	242
Appendix C Written consent form	244
Appendix D Extract from case-EHP F2A observation notes	245
Appendix E Researcher identity letter	246
Appendix F EHP semi structured interview protocol	247
Appendix G Managers semi structured interview protocol	249
Appendix H Story briefing	250
Appendix I Two part questionnaire	251
Appendix J Case study database components	256
Appendix K1 Activity data by MHS category (July 2005 - June 06)	257
Appendix K2 Evaluations and health risks by MHS category (July 2005 - June 06)	258
Appendix L Example of a statutory notice	259

Appendix M Example of a fine/summons	260
Appendix N Smokeless coal stove project summary	261
Appendix O Front page of <i>City Vision</i> newspaper on Johannesburg housing eviction	262
Appendix P HPCSA EHP competency requirements and scope of profession	263
Appendix Q IDP 2006-11 and environmental health goals	264
Appendix R Rules of hygiene for informal food traders	266

List of figures

Figure 1.1 Different aspects of poverty	10
Figure 1.2 The scope of environmental health services	15
Figure 2.1 The pyramid model of responsive regulation	28
Figure 2.2 The governance model of regulation by local government EHPs	34
Figure 3.1 CoJ regions before and after re-organisation	61
Figure 3.2 Data collection activities and their convergence on the model of governance	63
Figure 4.1 The governance model of regulation by CoJ EHPs	76
Figure 4.2 The structure of the CoJ in 2007	78
Figure 4.3 The CoJ Department of Health and its EH sub-directorate	79
Figure 4.4 The stages of regulation by CoJ EHPs	87
Figure 5.1 GDS and IDP framework	125

List of tables

Table 2.1 Key studies of street-level EH regulators	25
Table 3.1 Multiple sources of data and evidence used	64
Table 3.2 Fieldwork observations by MHS area, category and region	66
Table 4.1 The backgrounds of the ten case-EHPs	81
Table 4.2 CoJ data confirming the pyramid distribution of regulatory activities	89
Table 4.3 Proactive/reactive nature of field work visits	95
Table 5.1 Maximum sanctions available to CoJ EHPs and/or the courts in 2007	119
Table 5.2 National and provincial government Departments with EH responsibilities	122
Table 5.3 Monitoring activities by EHPs for other CoJ organisations etc.	127
Table 5.4 The extent to which case-EHPs' actions were perceived etc.	134
Table 5.5 Annual activity targets for the EH sub-directorate and a typical... EHP	137
Table 6.1 Factors EHPs associated with increased personal safety risks	161
Table 7.1 Four main categories of complainant in Johannesburg	178
Table 8.1 The most influential factors in the regulatory decision making of EHPs	200
Table 8.2 The contribution of EHPs to development and the SDGs	204

List of abbreviations

AD-EH	Assistant Director Environmental Health of the CoJ
AD-Res	Assistant Director Resources of the CoJ DoH (a former Regional EH Manager)
ANC	African National Congress
Asgi-SA	Accelerated and Shared Growth Initiative for South Africa
CALS	Centre for Applied Legal Studies of the University of the Witwatersrand
CoA	Certificate of Acceptability
COHRE	Centre on Housing Rights and Evictions (an international NGO)
CoJ	City of Johannesburg Metropolitan Municipality
DD-EH	Deputy Director Environmental Health of the CoJ
DoH	Department of Health
EH	Environmental health
EHO	Environmental Health Officer (the old title for an EHP)
EHP	Environmental Health Practitioner
EMI	Environmental Management Inspectors
EMS	Emergency Management Services of the CoJ
GDS	Growth and Development Strategy of the CoJ
GEAR	Growth, Employment and Redistribution strategy of the national government
GIS	Geographic information system of the CoJ
HPCSA	Health Professions Council of South Africa
ID	Identification documents
IDP	Integrated Development Plan of the CoJ
JMPD	Johannesburg Metropolitan Police Department of the CoJ
MDGs	Millennium Development Goals
MHS	Municipal health services
MMC	Member of the Mayoral Committee of the CoJ
R	South African Rand (During fieldwork in 2007 £1 = ~R14)
RDP	Reconstruction and Development Programme
SACN	South African Cities Network
SAIEH	South African Institute of Environmental Health
SALGA	South African Local Government Association
SAPS	South African Police Service
SDGs	Sustainable Development Goals
SME	Small and medium sized enterprises
SMME	Small, medium and micro sized enterprises
SSA	Statistics South Africa

Acknowledgements

This thesis would have been impossible without the help of many people. Professor Trudy Harpham, Professor Michal Lyons and Dr Adrian Budd were inspiring, encouraging, supportive and patient supervisors and always responsive. I was fortunate to be hosted by the Medical Research Council of South Africa's Environment and Health Research Unit who provided endless support and encouragement. Professor Angie Mathee, Professor Brendon Barnes, Dr Vathiswa Papu, Dr Daphney Conco, Dr Monica Feit, Dr Halina Rolin, Dr Nisha Naiker, Dr Sinola Rajaram, Mirriam Magotsi, Rochelle Spadoni and Shiellah Ndlovu were wonderful colleagues and guides.

I am indebted to the Department of Health of the City of Johannesburg Metropolitan Municipality. I would especially like to thank Dr Refik Bismilla, Councillor Mfikoe, Peter Manganye, Frikkie Swanepoel, Nic van Deventer and Nicky van Niekerk and all their EHPs and colleagues who were so welcoming and patient. I would also like to thank Jerry Chaka of Ekurhuleni Metropolitan Municipality and Professor Andre Swart, Joe Shikwambane and Cheryl Swanepoel of the University of Johannesburg for their advice and guidance. I also thank Folami Harris and Richard Moeng for their hospitality and guidance and Dr Bev Goring, Louise Thompson, Cosmina Drago and Nadia Imtiaz of London South Bank University for all their support and flexibility.

My on-going thanks to the National Hospital for Neurology and Neurosurgery for their expertise in the management of my brain, particularly Mr Laurence Watkins, Dr Dominic Heaney, Mr Neil Kitchen, Mr Ahmed Toma, Sarah Davis and Tina Stephens.

To Ella, our daughter Freya and our parents/grandparents Richard, Rosemary, George, Joyce and Heather, thank you for your endless love and support. Thanks also to many friends and colleagues including Rhonda Parker, Julia Stallibrass, Janice Fawell, Bill Page, Ian Dick, Dr Surindar Dhesi, Dr Alan Page, Dr John Watt, Dr Celia Bell, Dr Caroline Barratt and Dr Jill Stewart.

This thesis is dedicated to the memories of Dad, Michal and Rhonda and to all the EHPs who gave of their time and of themselves to show me their work and talk about their experiences.

Chapter 1 Environmental health regulation in urban South Africa

1.1 Introduction and thesis overview

Environmental health is concerned with relations between the environment and human health and their management and remains a complex and persistent public health challenge into the 21st century, particularly in the cities of developing countries like South Africa. Local government Environmental Health Practitioners (EHPs) have been regulating the environmental health of businesses and the public in areas including food safety, housing and environmental pollution control in Johannesburg, South Africa's largest city, since 1887. Working at the local level they are well placed to deliver protective laws that could make cities safer, more productive, inclusive, sustainable and better governed. But EHPs find themselves confronting public health challenges not dissimilar to their Victorian predecessors whilst their organisations and the law itself are undergoing huge changes and communities remain suspicious of their actions.

This thesis originated in the question: how do the EHPs of the City of Johannesburg Metropolitan Municipality regulate environmental health? The overall aim of this research was to describe and explain how these EHPs regulate environmental health.

A literature review is presented in Chapters 1 and 2. The next section of Chapter 1 defines environmental health before exploring how environment-health relationships and their management have shaped and been shaped by societies over the centuries but remain a complex and persistent problem. This chapter then reviews South Africa's environmental health challenges, particularly in its cities, before exploring the work of its local government EHPs, the challenges they face and why this thesis is focused on finding out more about them. Chapter 2 develops a model of governance to describe how EHPs regulate environmental health based on an inter-disciplinary socio-legal approach grounded in theoretical perspectives from criminology, history, the law, organisational studies, political science and sociology. It starts by defining regulation as governance before describing responsive regulation and its utility for describing why EHPs regulate using mainly persuasive (e.g. education, negotiation) instead of punitive (e.g. fines, prosecutions) approaches. Chapter 2 then embeds responsive regulation within a model of governance in Figure 2.2 and created by this thesis to incorporate the individual, legal, organisational and external factors and explain why they frequently favour persuasive regulatory approaches. Chapter 2 ends by identifying key gaps in knowledge and the aim and objectives of this thesis.

Chapter 3 reviews the methods developed to answer the research question and begins by introducing the epistemology and strategic approach of this thesis before detailing the case

study strategy developed. The methods of data analysis are then outlined and the chapter ends with reflections on how the case study worked in practice.

The results are presented across Chapters 4 to 7 and are structured around the model of governance originally developed in section 2.5 but updated here for the CoJ by this thesis. Chapter 4 begins with an overview of this new governance model of responsive regulation by CoJ EHPs in Figure 4.1 before moving to its centre to describe how CoJ EHPs regulate environmental health. This includes an overview of the CoJ's structure and the working days of EHPs before explaining the stages of regulation and the proactive and reactive ways they work. Chapter 4 then moves to the outer ring of the governance model to start exploring the external factors influencing regulation, specifically here the regulatory context in Johannesburg. This revisits South Africa's historical context briefly before exploring how the macroeconomic policies and public and media attitudes can influence the work of EHPs towards more persuasive regulatory approaches.

Chapter 5 analyses how legal and organisational factors influence regulation. Its first section reviews the developmental legal framework before exploring the uncertainties that characterise these laws and the role of EHPs. The second section explores the strategic framework for environmental health at the CoJ before reviewing the monitoring work its EHPs undertake for others. The chapter then considers how the CoJ seeks to control its EHPs and begins by exploring relations between EHPs themselves and Managers and the influence of performance management before analysing the influence of local politicians and resources. This chapter argues that legal and organisational factors create an uncertain mandate for EHPs that often favours more persuasive regulatory approaches.

Chapter 6 reviews how EHPs themselves can influence regulation and begins by exploring their backgrounds, views, professional identities and personal safety concerns. The chapter then focuses on EHPs' views of the criminality of environmental health offences and sanctions and the roles of the criminal courts, factors that often favour persuasive regulatory approaches. Chapter 7 completes the governance model by analysing the influence of relations between EHPs and the regulated and begins by describing EHPs' typologies of the regulated and complainants. The severity and persistence of offending are then investigated before considering how the various characteristics of the regulated themselves and morality can influence EHPs. Chapter 7 then focus on how EHPs regulate the informal sector before exploring corruption. Once again these factors often favour persuasive regulatory approaches.

Chapter 8 presents a further discussion based on themes from the results chapters that relate back to the theoretical framework. Chapter 9 presents the thesis conclusions and starts by

revisiting the research aim and objectives before making policy recommendations. The thesis contributions to knowledge are then presented and the chapter ends with consideration of the strengths and weaknesses of this thesis and recommendations for future research.

1.2 What is environmental health?

The term environmental health is relatively new (Macarthur and Bonnefoy 1997) but hard to define (CEH, 1997; Smith et al. 1999). The Environmental Health Policy Committee of the United States government identified more than 28 different definitions but refused to adopt one because they had functioned well (in their opinion) without it and were reluctant to add another to the list (EHPC, 1998). Definition is problematic not least because ‘environment’ and ‘health’ are themselves hard to define (Eyles, 1997). Definitions of the ‘environment’ include the ‘surroundings in which plants or animals live’ and the ‘natural world’ itself (OED, 2006) but Eyles argues that the relationships between humans and nature broadens its scope into fields like ecology concerned with the development of the human species and the environment as a resource (1997). In environmental health these collective and relational ideas of environment are combined with ‘health’, a phenomenon that often centres on the individual and its associations with quality of life and a resource for living (Eyles, 1997).

This thesis uses the definition developed by the World Health Organisation:

“Environmental health comprises those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social and psychosocial factors in the environment. It also refers to the theory and practice of assessing, correcting, controlling and preventing those factors in the environment that can potentially affect adversely the health of present and future generations”

(WHO, 1994 cited in MacArthur and Bonnefoy 1997 pp5-6)

This definition is chosen because its two parts acknowledge the breadth, complexity and inter-related nature of environment-health relationships and the interventions that seek to manage these relationships. These are a product of the development of environmental health to which the next sections turn, but this definition also captures its inter-disciplinary nature. Research to better define this remains a priority (Eyles, 1997), but environmental health is continuously informed by disciplines from the humanities (e.g. history, philosophy, religion), natural sciences (e.g. biology, chemistry, physics) and the social sciences (e.g. economics, geography, political science, psychology, sociology). This definition is also appropriate because of its adoption by the WHO Regional Committee for Africa (WHO AFRO 2002) and the South African government (NDoH, 2013), but this chapter now explores the origins of this definition.

1.3 The dynamic and wicked nature of environmental health

The relationships between the environment and human health and their management are being continuously shaped and redefined by societies. This section summarises some key shifts in these relationships and the philosophies, values and ideological debates underpinning them. A comprehensive account of this complex terrain is beyond the scope of this thesis, but tensions between individual and collective responsibilities continue to frame environmental health debates to this day (Baggott, 2000). This section argues that environmental health remains a persistent and ‘wicked’ problem for the 21st century given that its unique, complex nature lacks definitive formulation, whilst explanations of and potential solutions to these problems are hard to describe and test (Rittel and Webber 1973).

In *Purity and Danger* Mary Douglas argues that different societies define their environment-health relationships in terms that go far beyond mere health (1966/2008). Here dirt is matter that is out of place and creates social disorder; the definition and enforcement of rules of hygiene thereby creates social order by maintaining the boundaries between dirt and cleanliness, purity and pollution or the sacred and profane. In Ancient Greece the Hippocratic book *Airs, Waters and Places* recognised that climate, soil, water, lifestyles and nutrition influenced endemic disease but diseases from outside (epidemic) were also a threat (Rosen, 1993). This text also provided guidance on protective interventions including the construction of houses in elevated areas warmed by the sun and receiving clean winds (Rosen, 1993). Science influenced the Ancient Greeks, particularly the belief that disease was caused by poisonous airs or ‘miasmas’ (Smith, 2007) and continued to inform Victorian sanitary reformers 2000 years later. Religion also explained environment-health relations. Offending public order risked creating ‘pollutions’ and the wrath of Gods but these could be cleansed by purification rituals (Curtis, 1998). Compliance with Old Testament rules of hygiene (e.g. prohibiting unclean acts, isolating lepers) also provided collective protection against God’s retribution (Hamlin, 2002).

Religion sometimes reinforced science. Quarantine interventions first described in Venice in 1127 could derive from the belief that the fortieth day marked the separation between acute and chronic disease (Hecker in Rosen, 1993) as well as being a period of great significance in biblical episodes like the great flood (Rosen, 1993). Quarantine also illustrates how society structured the environment-health relationship and sought to maintain social order. With illness residing in places, quarantine separated places and controlled the movement of people (Armstrong, 1993). During medieval plagues the fear of miasma led to the sealing of infected houses and their purification with ‘good’ odours (Smith, 2007) whilst in early Victorian England local authorities attempted to quarantine cholera affected towns (Wohl, 1983).

During the 16th to 18th Centuries the British economy operated within a mercantile system, with government recognizing its social responsibility for public welfare whilst assuming it could regulate and direct the nation's economy by interventions including the protection of national industry and shipping restrictions to protect colonial trade (Fraser, 2003). But in 1776 Adam Smith argued instead that freedom for economic activity, based on individual freedom, was central to a free society (Jones, 2004). Assuming fair competition, a 'perfect' self-adjusting market served private and public interests without government intervention: for example consumers paid the lowest prices for the goods they demanded and self-interested producers could make profits whilst serving the public interest through social goods (e.g. employment, wealth) distributed amongst market participants (Jones, 2004).

Adam Smith did not reject all state intervention and identified the need to protect people from injustice and oppression and establish public works for the benefit of society (Fraser, 2003), but the systems of poor relief like workhouses were harsh and attracted widespread protest (Hamlin, 2002). This classic liberalism still dominated early 19th century Great Britain when widespread poverty and inequality were not attributed to market failures but to the inability of the poor to adopt the values of their economic superiors (Jones 2004). But Victorian sanitary science gradually redefined environment-health relationships and continues to underpin the work of local government EHPs across the world today.

From the mid-19th century growing concern about the public consequences of individual private actions, particularly migration into industrialising towns and cities, led to increasing state interventions in the public's health. One important philosophical driver was the utilitarian movement, with leading proponents like John Stuart Mill - not unlike Adam Smith - adopting a liberal individualist position which feared that state intervention could weaken individual responsibility (Fraser, 2003) but was justified on the basis of harm:

“Whenever... there is a definite damage, or a definite risk of damage, either to an individual or to the public, the case is taken out of the province of liberty, and placed in that of morality or law” (Mill, 1859/1972 p150)

This lack of individual incentive to contribute towards public health improvement has been labelled the 'prevention paradox' and long used by collectivists to argue for state intervention in public health (Baggott, 2000). But Edwin Chadwick, secretary to the Poor Law Commission and former secretary to Jeremy Bentham, the founder of utilitarianism, first articulated the utilitarian philosophy of environmental health in his sanitary idea. Based on Ancient Greek knowledge, sanitary science believed that a space for the healthy body to exist could be created by policing substances entering the body space (e.g. air, water and food) and managing

substances from the body (e.g. faeces) that belonged to neither body nor the environment (Armstrong, 1993).

Under pressure to reduce the costs to tax payers of the Poor Law welfare system, Chadwick's inquiries during the 1830s led to a focus on the mortality of male breadwinners whose families then became dependent on poor relief. His 1842 *Report On The Sanitary Condition Of The Labouring Population Of Great Britain* described the relationship between environmental conditions and the huge geographical and socio-economic variations in health and disease in industrialising Britain. To reduce the mortality rate of male breadwinners, and hence the costs to the poor relief, Chadwick proposed a series of 'great preventives' including household water supplies, toilets and sewerage to be delivered through rational and impartial public administration (Chadwick, 1842/1965). For Chadwick the purpose of public health was securing the economic advance of society (Rayner and Lang 2012) and from 1847 legislation to enact his preventives included, for the first time, the post of sanitary inspector or inspector of nuisance as local government EHPs were then known (Crook, 2007).

Chadwick's collectivist reforms were also designed to appeal to liberal individualists. By associating disease with insanitary environments he avoided offending powerful interests like manufacturers and property owners (Hamlin and Sheard, 1998). Chadwick's sanitary idea also promised to make a better world by improving amenity, morality and social order, factors that were particularly important given the economic depression and fear of revolution at that time:

“...the removal of noxious physical circumstances, and the promotion of civic, household and personal cleanliness, are necessary to the improvement of the moral condition of the population; for that sound morality and refinement in manners and health are not long found co-existent with filthy habits amongst any class of the community” (Chadwick, 1842/1965 p425).

Many Victorian sanitary reformers including Chadwick were miasmatisms (Hamlin, 1998), but the potential of his sanitary idea was later confirmed by rival contagionists who believed that disease was spread by direct or indirect contact. These included pioneering epidemiologist Dr John Snow whose investigations confirmed that the London cholera outbreak of 1854 was caused by polluted water supplies (Snow, 1855). The delivery of Chadwick's municipal preventives is increasingly recognised to have played a primary role in improving Britain's public health from the 1870s (Szreter, 1988). Further, Chadwick's utilitarian argument that by maximising collective well-being, even to the detriment of the individual, investment in public health is good for social development continues to underpin public health strategies to this day (Rayner and Lang, 2012).

From the early twentieth century however public health in the global North has increasingly focused on the individual and the boundaries between people themselves; instead of poverty and insanitary conditions the danger was now from the bodies of others (e.g. by the transmission of communicable diseases) with strategies directed towards personal hygiene by controlling the attitudes and behaviours of individuals in this psychosocial space (Armstrong, 1993). These strategies have also influenced local government EHPs, alongside advances in the bio-medical and social-behavioural models of public health. In health protection from communicable diseases for example, their interventions include measures to manage infected people themselves (e.g. disease surveillance and quarantine of suspected cases) and measures to prevent further infection (e.g. regulation to prevent overcrowded housing) (Hamlin, 2013; Wohl, 1983). Local government EHPs also have long experience of trying to influence behaviours by educating those they regulate (e.g. food handlers and business operators) and the wider public including complainants and tenants.

Since the 1970s a so-called 'new public health' continues to redefine environment-health relationships; here dangers are everywhere and necessitate broad ranging political and ecological interventions (Armstrong, 1993). One important driver was Thomas McKeown's critique of modern medicine. In *The Modern Rise of Population* he argued that the contribution of modern medicine to declining levels of disease since the end of the nineteenth century was exaggerated and due to other factors, particularly nutritional improvements and rising standards of living (1976). Further, McKeown argued that the major causes of ill health in industrialised societies (e.g. cancer, heart disease) were largely caused by individual behaviours and environmental factors and could therefore be prevented. The contribution of local sanitary reform, including the work of local government EHPs, to McKeown's thesis remains the subject of debate but Szreter (1988) concluded in his re-examination of McKeown's data that sanitary reforms played a leading role in mortality decline from 1850 to 1914.

Another important driver of the 'new public health' are concerns about escalating health care costs and rapidly aging populations (WHO, 1993). In *A new perspective on the health of Canadians* for example, Canadian Health Minister Marc Lalonde attacked 'traditional' medical health care systems and argued instead that future health improvements would mainly come from individuals adopting less risky lifestyles, a better understanding of human biology (e.g. genetics, ageing) and addressing environmental risks including pollution control, urbanization and socio-economic inequalities (Lalonde, 1974).

Having largely ignored the limits of nature for the last two hundred years the rise of environmental ideologies in various forms, particularly climate change and sustainable

development, increasingly inform environmental health debates (Baggott, 2000). Environmentalists have some associations with collectivism, particularly through concepts like social justice and collective action, but they also remain suspicious of state power, particularly its abilities to oppress individuals and pollute the environment (Baggott, 2000). They also reject liberal individualist arguments, particularly their justifications in favour of freer markets and less state intervention (Baggott, 2000). This 'new public health' era has also seen environmental health become integral to international public health policies and strategies to reduce poverty and promote sustainable development including:

- The Stockholm Declaration of the United Nations Conference on the Human Environment (UNCHE, 1972);
- The United Nations Conference on Human Settlements (UN, 1976)
- The Alma Ata Declaration on Primary Health Care¹ (WHO, 1978);
- The WHO Healthy Cities Project (from 1987) (Tsouros 2015);
- The Brundtland Report (WCED, 1987);
- The Rio Declaration on Environment and Development (UNCED, 1992); and
- The Millennium Development Goals (MDGs) (Cairncross et al. 2003)

More recently the World Health Organisation's *Commission on Social Determinants of Health* recognised that the protection and improvement of the local environment, that has occupied local government EHPs and their forebears for nearly 200 years, is essential for reducing health inequalities (WHO, 2008a), particularly in urban settings (WHO, 2008b). In 2015 many of the United Nation's new *Sustainable Development Goals* for 2030 include environmental health related targets covering health and well-being (Goal 3), water and sanitation (Goal 6), reducing inequalities (Goal 10) and creating sustainable cities and communities (Goal 11) for example (UN, 2016). Satterthwaite (2015) welcomes this ground breaking vision for the common good but also criticizes the SDGs for saying so little about the roles of local government that are central to delivering the SDGs in so many cities.

These continuing strategies also suggest the persistence of environmental health related burdens of disease. Measuring the proportion of global ill health attributable to environmental factors remains difficult but data from Harvard University's Global Burden of Disease database estimates that between one-quarter and one-third of global ill health can be attributed to environmental factors (Smith et al. 1999). Further, they found that the greatest environmental

¹ Environmental health aspects of primary health care include education on the prevention and control of health problems, promotion of food supply and nutrition, safe water and basic sanitation, maternal and child health care and the prevention and control of endemic diseases.

disease burden is borne by children under five years of age and those living in the poorest countries where poor air, food and water quality at the household level are the greatest environmental risk factors. More recently Pruss-Ustun and Corvalan (2008) estimated that one quarter of the global burden of disease and premature deaths are related to modifiable environmental factors, with children and those in developing countries facing far greater risks from diarrhoeal diseases and respiratory infections particularly. In both studies the Sub-Saharan Africa region suffered the greatest environmental burden of disease.

This section has highlighted some key influences on environment-health relations and their management and the philosophies and values underpinning them. They are characterised by complexity, change and on-going individualist/collectivist debates but common themes also include a concern for environmental health inequalities, particularly their potential to create social disorder, and a desire to manage by prevention where possible. The continued relevance of environmental health also earns its description as a ‘wicked’ problem (see p4 above), but this chapter now considers why South Africa and Johannesburg were chosen for this thesis.

1.4 Why South Africa and Johannesburg?

For centuries cities have symbolised both civilisation and wealth and poverty and deprivation (Chadwick, 1842/1965; Engels, 1845/1987; Rosen, 1993). Concerns about the environmental health impacts on city dwellers continue (Hardoy et al. 2001; Harpham et al. 1988; UN, 1976; WHO, 2008b) and are increasingly relevant now more than half the world’s people are urban (UNFPA, 2007). Further, this wicked challenge could persist given predictions that the populations of African and Asian cities could double between 2000 and 2030 and be largely composed of the poor (UNFPA, 2007). In 2011 Johannesburg was home to nearly 4.5 Million people, a population increase of more than 3% in 10 years (SSA, 2011b).

The term ‘urban’ remains difficult to define with no common criteria internationally (Hardoy et al. 2001; Wratten, 1995) or in South Africa itself, where historically any settlement within a local authority boundary was classified as ‘urban’ (SACN, 2004). The diversity of human settlements also makes the urban-rural divide problematic, not least because of their many interdependencies including the flow of people, goods and services (Hardoy et al. 2001; Wratten, 1995). Whilst this thesis is focused on the EHPs operating within the boundaries of the CoJ, this thesis acknowledges that Johannesburg’s environmental health can be influenced by factors beyond geographical boundaries and to these this section now turns.

South Africa is affected by three concurrent epidemics (Coovadia et al. 2009); poverty-related ill health remains widespread, whilst HIV/AIDS accounts for 31% of disability adjusted life years and the burdens from non-communicable diseases and other causes, particularly violence

and road traffic injuries, are increasing. Returning to the definition of environmental health this section explores some of the physical, chemical, biological, social and psychosocial factors in the urban environments of South Africa with the potential to influence human health. The work of Mitlin and Satterthwaite (2004) in Figure 1.1 below structures this section because of its foundations in the wider social determinants of health and acknowledgement that poverty is complex and inter-linked, where one aspect may cause another but addressing one could resolve or lessen others.

Figure 1.1 Different aspects of poverty (Source: Mitlin and Satterthwaite 2004 p15)

- Inadequate and often unstable income;
- Limited or no safety net (e.g. access to grants);
- Inadequate, unstable or risky asset base (e.g. housing);
- Poor quality and often insecure, hazardous and overcrowded housing;
- Inadequate provision of public infrastructure;
- Inadequate provision of basic services (e.g. day care, transport, law enforcement);
- Inadequate protection of poorer groups' legal rights (e.g. to environmental health);
- Poorer groups' voicelessness and powerlessness within political systems and bureaucratic structures

South Africa is described as a middle-income, industrialised country but its Gini coefficient has remained around 0.7 since 2000 and ranks it amongst the world's most unequal countries in terms of its income distribution (SSA, 2013; World Bank, 2016). Similarly, its Human Development Index (HDI) has remained around 0.6 since 1990 and in 2014 South Africa was categorised as a 'medium development country', but when adjusted for inequality its 2014 HDI falls by more than 35% to 0.428 and ranks it amongst the world's most unequal countries in terms of its human development (UNDP, 2015a).

Some HDI indicators have not changed since these data were first collected and are useful to illustrate South Africa's mixed but relatively static overall development. Between 1980 and 2014 the average years of schooling increased by 5 years (to 9.9 years), expected years of schooling increased by 2 years (to 13.6 years) and gross national income per capita increased by nearly 12% (to \$12122 – 2011 PPP) (UNDP, 2015b). But life expectancy at birth has only increased by 0.5 years and only started improving since 2005 (UNDP, 2015b), a trend attributed to South Africa's concurrent epidemics and persistent inequalities (Coovadia et al. 2009; Sanders and Chopra 2006).

In 2011 around 46% of South Africa's 52 million population were defined as poor², though this was an improvement compared to the time of fieldwork in 2007 when around 57% were considered poor and earned less than R458 per capita per month (SSA, 2014). Such figures remind of the importance of the so-called middle-income countries like South Africa that are home to around 1.3 billion people, some three quarters of the world's poor (Sumner, 2010).

Cities provide more employment opportunities and higher wages than in the rest of South Africa (SACN, 2004) but the 2011 census found that 35% of CoJ households reported having an income of less than R1633 per month (SSA, 2011b). Further, Census 2011 found that 25% of Johannesburg's economically active population (age 15-64) were unemployed, nearly 32% of them youngsters (aged 15-34 years) (SSA, 2011b). This is an improvement on Census 2001 data (37% unemployment, 46% youngsters) but highlights the persistence of South Africa's employment problems even in its relatively prosperous cities.

Small, medium and micro-enterprises³ (SMMEs) comprise around 93% of registered economically active businesses in South Africa, though this percentage does not include informal sector businesses (DTI, 2008). One small survey (n=25) of small business entrepreneurs in Soweto identified obstacles to business growth including crime, poor township infrastructure, regulatory costs (e.g. business registration) and corrupt government officials (CDE, 2007). The informal sector is also growing in Johannesburg (Beall et al. 2002; Tomlinson et al. 2003) and across South Africa could employ between 1.7 million (DTI, 2008) to 2.7 million people with no employment or social protection (Bivens and Gammage 2005). Further, one rare survey of 150 informal South African businesses found their median annual sales turnover was R8482 (SBP, 2004).

The income of many South Africans continues to be inadequate and unstable but one contributor to the socio-economic improvements between 2001 and 2011, and something that differentiates South Africa from many other low-income countries, is its social welfare system. More than 16 million South Africans earning less than R6000 per household per month benefit from interventions including free primary health care, no-fee schools, social grants for vulnerable groups (e.g. elderly, children, disabled), free/subsidised housing and free services (e.g. water) (National Treasury, 2013). From 2002/3 to 2012/13 spending on the social wage

² The poor are defined by Statistics South Africa as those living below the upper-bound poverty line at which they can purchase adequate food and non food items (SSA, 2014 p7).

³ Definitions of SMMEs vary by sector, turnover and asset value, but using numbers of full time equivalent employees: medium enterprises employ < 200, small <50 and micro <5 (DTI, 2008).

rose from around 13% to 19% of GDP, around R600 Billion in 2012 (National Treasury, 2013), but significant and complex environmental health challenges remain.

Many South Africans face a double burden from exposures to traditional and modern (Thomas et al. 2002) or brown and green hazards (McGranahan and Satterthwaite 2000). The traditional/brown hazards would be familiar to Victorian EHPs and include inadequate access to basic services like housing, water and sanitation. In 2011 hundreds of thousands of households have benefited from improvements in these areas but nearly 14% of households still live in informal dwellings, less than half of households have indoor water supplies and more than 7% rely on bucket latrines or have no access to sanitation (SSA, 2011a). Norman et al. (2010) estimated the total burden of disease in South Africa related to unsafe water and sanitation, indoor air pollution, outdoor urban air pollution and lead exposure and found around 5% of total deaths were attributable to these factors, though for under 5 year olds this was nearly 11%.

In Johannesburg itself urban living standards are relatively high compared to other parts of South Africa (SSA, 2011a) and cities in sub-Saharan Africa (Beall et al. 2000a) but Census 2011 reported that more than 18% of the city's 1.4 million households live in informal dwellings (e.g. informal settlements, backyard shacks) (SSA, 2011b) with acknowledged backlogs in environmental health infrastructure and services (CoJ, 2008). Informal housing persists for reasons including historic backlogs in the state housing programme, urban inequalities and population growth (Huchzemeyer, 2004). Vearey et al. (2010) also consider these problems symptomatic of the 'weak rights' of informal households, whose frequently 'illegal' status can make them even more vulnerable to exploitation and powerless to hold officials to account (Huchzemeyer, 2004). Poor access to basic services also affects many formal households in Johannesburg, particularly when exploitative landlords refuse to pay for services (CoJ, 2005b) and tenants fear eviction (COHRE, 2005). Some new housing developments are creating new problems due to contaminated land (e.g. mine dumps) and poor access to services like shops, schools and transport (Mathee and Wright 2014).

Green/modern environmental health hazards can have more of a delayed affect and regional or global impacts (McGranahan and Satterthwaite, 2000). Johannesburg's air pollution is concentrated in and around Soweto and the inner city, areas that coincide with concentrations of air pollution related diseases (SACN, 2004). Air quality management challenges include the regulation of industrial emissions, the spatial geography of apartheid cities and the continued use of solid fuel or paraffin burners in townships due to shortfalls in electrification and high electricity prices (SACN, 2004). The illegal dumping of wastes in South African cities is also a growing problem affecting all households (SACN, 2004).

Those living near industrial areas can suffer ‘green’ and ‘brown’ hazards simultaneously (Leonard and Pelling 2010; Thomas et al. 2002; UNDP, 2003). For example Naicker et al. (2003) found that mining in Johannesburg was contributing to the acidification of surface waters that rendered local water courses unusable and exposed locals to heavy metals. Home based cottage industries (e.g. hair dressing, car repairs, welding, crèches) provided important income but one long term study of poor Johannesburg households found around 22% involved in cottage industries that risked potentially harmful exposures to substances including lead and volatile organic compounds (Mathee et al. 2009). This study also identified social/psychosocial factors in poor households including noise and fears related to violence (e.g. rape, intentional gunshot, stabbing, beating) that were frequently based on past experiences.

Poverty in Johannesburg still broadly follows the spatial patterns of apartheid (Beall et al. 2002; Tomlinson et al. 2003) with former Black-African areas in the south having the poorest access to basic services (SACN, 2004) whilst the former White northern suburbs continue to enjoy the highest standards and benefit from the relocation and growth of former inner city manufacturing and service sectors (Beall et al. 2002). Certain groups also have greater environmental health vulnerabilities, particularly women and children and those affected by HIV/AIDS (Hardoy et al. 2001; WHO, 2008b; Norman et al. 2010). Women in Johannesburg, and Black-African women in particular, are more likely to earn less than men and to have low income jobs (CoJ, 2005a) though they are sometimes the main breadwinners and an important source of social cohesion (Beall et al. 2002). Further, the *State of Children in Gauteng* review concluded that poverty was a significant threat for nearly half of Gauteng’s children and put them at greater risk of maternal and child mortality, HIV infection, violence and sexual abuse (Dawes, 2003).

Migrants to Johannesburg also face greater risk of poor environmental health. Landau (2007) concluded that ignorance, xenophobia and legal discrimination were preventing many foreign migrants from integrating productively into Johannesburg, as echoed in one description of the city’s migrants and refugees as a “...silent group, never engaging with the authorities or drawing attention to themselves for fear of incurring official sanction or social wrath” (Beall et al. 2002 p125). Migration status is also important, one household survey finding that South African migrants were more likely to live in informal settlements on Johannesburg’s periphery (with worse environmental health) compared to cross-border migrants in the inner city (Vearey et al. 2010) though the CoJ considered both areas inequality ‘hot spots’(2005a).

In summary, the environmental health problems of South Africa and Johannesburg are inherently dynamic and wicked. How and why these problems continually influence the work of EHPs is explored further in the literature review in section 2.5 below and then presented and discussed in the results across Chapters 4 (regulatory context), 5 (legal and organisational

factors), 6 (views of EHPs) and 7 (relations with the regulated). The final section now considers why we need to know more about the EHPs confronting these challenges each day.

1.5 Why local government EHPs?

This thesis focuses on CoJ EHPs because they are tasked with protecting and improving Johannesburg's environmental health amidst challenges not dissimilar to their Victorian forebears. This section starts by summarising the historical development of EHPs before exploring their main roles and responsibilities, some of the wider challenges they face and why we need to know more about them.

Records of city officials regulating environmental health date back to Greek and Roman times (Rosen, 1993) and across medieval Europe powerful urban authorities regulated areas including food markets, municipal abattoirs, street cleaning and sewerage (Hamlin, 2002). Today's local government EHPs gradually emerged in Victorian Britain during the industrial revolution. Inspectors of nuisances or sanitary/health inspectors as EHPs were then called were first appointed by industrialising city authorities like Manchester from the 1820s (Brimblecombe, 2003) but became more widespread from the 1840s following Chadwick's sanitary reforms. From 1872 all British local authorities were mandated to appoint them (Crook, 2007) and in South Africa the first EHPs were part of Britain's colonial administrations. Johannesburg's first EHP, Charles Shaw, was appointed in February 1887, less than one year after the gold diggers community there was established (Walliss, 2000).

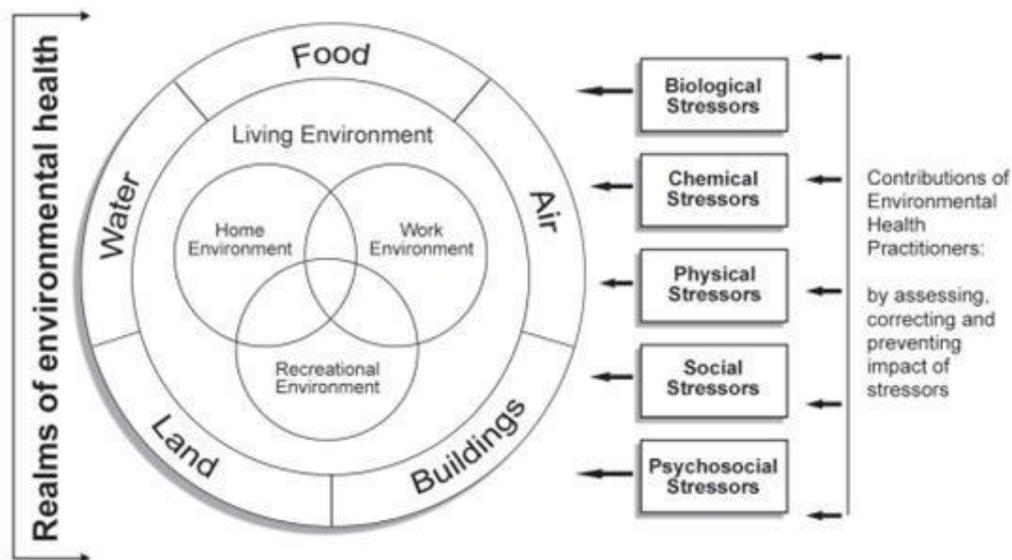
Across South Africa today EHPs work for national, provincial and local government, for the private sector and for non-profit organisations. In 2006 there were 2555 EHPs and other professionals (including student EHPs and Food Inspectors) registered with the Board of EHPs of the Health Professions Council of South Africa (HPCSA) to practice environmental health (HPCSA, 2006b). Registration is mandatory for all EHPs and minimum requirements include a University Diploma in Environmental Health Sciences, the successful completion of community in-service training (typically one year in a local authority) and the maintenance of continuous professional development. Local government remains the dominant provider of environmental health services and the most recent survey data from 42 of the country's 52 local authorities employing EHPs found a total of 1126 EHPs employed by them, more than half (n= 658) working for seven of South Africa's eight metropolitan municipalities (Mudaly, 2013).

Returning to the environmental health definition in Section 1.2 above, the role of the local government EHPs can be summarised as the assessment, correction, control and prevention of the environmental factors that can potentially affect the health of present and future generations as summarised in Figure 1.2 below. Here 'control' is absent possibly because Burke et al.

(2002) reproduced the definition of environmental health used by MacArthur and Bonnefoy (1998 pp8-9) that omits ‘control’ from their earlier work (1997 pp5-6).

The role of EHPs in maintaining and improving environmental health directly affects the quality of life of current and future generations, but their work often goes unnoticed being typically un-dramatic and usually hidden from the public eye (Hutter, 1988). They serve as gatekeepers to regulation, deciding whether an offence exists and further action is necessary. EHPs are therefore responsible for bringing South Africa’s protective laws to life and have long used many proactive (e.g. inspections) and reactive (e.g. complaints) regulatory approaches alongside more recent approaches including EH project and promotional activities. Therefore EHPs are well placed to respond to the challenges above and contribute towards the cities desired by the *Constitution* and the South African Cities Network (SACN, 2004). For example by working at the local level EHPs are enforcing protective laws that could make cities more productive and sustainable. By protecting the rights of people and responding to their voices EHPs can make cities more inclusive. EHPs are also accountable to the public and politicians via local government and the criminal justice system, both important aspects of a well governed city, but this section now returns to Figure 1.1 above to consider other challenges they face.

Figure 1.2 The scope of EH services (Source: Burke et al 2002 p4)



Beyond the dynamic and wicked challenges summarised above, the scale of the restructuring and transformation of South African local government is also daunting. Local government only covered all South Africa for the first time in 2000, but before 1994 EHPs sometimes created and sustained local inequalities and communities remain suspicious of their motives (see section 2.5.2 below). Other organisational challenges include resource shortages and confusion over responsibilities for service delivery (see section 2.5.5 below). The UK literature also suggests that EHPs remain stuck in their ‘Victorian’ roles and unwilling to embrace more flexible,

multidisciplinary and community centered approaches advocated by ‘new public health’ policy. EHPs have been described as the ‘general practitioners’ of public health (Cornell, 1996) but Armstrong argues that as the 20th century progressed public health would be “relegated to a subordinate, technical and routinised administrative function” (1993 p401). Similarly Ashton regrets how the pioneering work of Chadwick and others “...has been defined and codified, frozen in relation to another era and another way of looking at the world. Its practice seems to have become reactive and bureaucratic, rather than proactive and innovative” (1991 p190).

More recent studies of UK local government EHPs (Burke et al. 2002; CEH, 1997; Dhese and Lynch 2016) suggest that little has changed more recently and a combination of organisational and legal factors and the attitudes of EHPs themselves are blamed. These insights are important because the South African literature suggests its EHPs could also be experiencing similar problems. For example the draft National Environmental Health Policy urged EHPs to leave their old ‘health inspector’ model behind in favour of community development approaches (Eales et al. 2002). Similarly, McGranahan (2007) argues that EHPs should not see their roles as inspecting and regulating but as working with communities and other groups already improving conditions in cities. But EHPs remained uncertain of (Allison 2002; Lewin et al., 1998) and sometimes hostile (McDonald, 1997) towards these new roles.

1.6 Conclusions

This chapter began by defining environmental health and then explored how environment-health relationships and their management have been shaped by societies over the centuries. A concern for inequalities, particularly their potential to create social disorder, and a desire to manage using preventative interventions are integral to 21st century environmental health but it remains a persistent and wicked problem. The chapter then explored the considerable environmental health challenges facing South African cities, including Johannesburg, before introducing the potential role of local government EHPs for assessing, correcting, controlling and preventing the environmental factors with the potential to harm human health.

Working at the local level EHPs are potentially well placed to deliver the Constitution’s developmental agenda through the protective laws that could make cities more productive, inclusive, sustainable and better governed. Beyond their core challenges, EHPs also find themselves based in organisations and implementing laws that are themselves undergoing significant change whilst they work amongst communities that remain suspicious of their actions. Reflecting on these issues, Mathee and Wright (2014) describe the paradox whereby 21st century demand for scaled up and prudent action remains considerable, but South African environmental health services seem stagnant or in decline. Therefore it’s in our interests to learn more about them and Chapter 2 develops a model of governance towards this aim.

Chapter 2 Environmental health regulation as governance

2.1 Introduction

This chapter develops the model of governance used by this thesis to describe how local government EHPs regulate environmental health and starts by defining environmental health regulation as a form of governance before introducing the concept of responsive regulation to describe the work of EHPs. The chapter then embeds responsive regulation within a model of governance that incorporates the individual, legal, organisational and external factors identified in the literature and ends by identifying key gaps and the aim and objectives of this thesis.

2.2 What is environmental health regulation?

Regulation is generally concerned with the management of public and private relations in a complex society (Hawkins, 1984) and historically refers to the use of the law to constrain and organize economic activity (Kagan in Hutter, 1999). Ogus's (2004) substantial work on law and economic theories of regulation differentiates between two forms of regulation:

- Economic and financial regulation - primarily focused on the control of markets for purposes including government spending (e.g. via interest rates), distribution of income and wealth (e.g. via taxation) and fair allocation of resources (e.g. competition laws)
- Social regulation - acting in the public interest to protect against the potentially damaging consequences of market failure (e.g. pollution or unsafe food)

This distinction and the definition of environmental health regulation as a form of social protection is adopted by other regulatory scholars (Hutter, 1997; Yeager, 1991), but in the absence of consensus Baldwin et al. identify three different meanings of regulation:

- *An authoritative set of rules* – accompanied by a means of monitoring and promoting compliance, like a public enforcement agency;
- *State influence in the economy* – all government interventions designed to influence the economy and can include commands or incentives (e.g. taxes or subsidies);
- *All forms of social control* – these includes the forms of state control above and the actions of non-state processes like social norms and market pressures that can be both intentional and unintentional (Baldwin et al. 1998 pp3-4).

Following Chapter 1 the role of local government EHPs in assessing, correcting, controlling and preventing the environmental factors that can potentially affect the health of present and future generations is central to the first of Baldwin et al.'s meanings, but environmental health

regulation has also long sought to influence the economy and wider society. For example section 1.3 described how early quarantine controls were mainly to protect the state itself (Armstrong, 1993) given that high mortality levels could disrupt commerce, tax collection and state defence (Hamlin, 2002). Sanitary science provided the means of securing a healthier environment through state intervention, but Chadwick's vision was also directed towards the greater goal of social development (Chadwick 1965/1842) and was particularly attractive at a time of economic depression and the threat of revolution (Hamlin, 1998). Further, Crook argues that sanitary science and the emergence of regulation and local government EHPs was part of a broader liberal rationale that included a concern for the "maintenance of a civilized, respectable public sphere, free from sources of disgust and disquiet and committed to the integrity and enjoyment of property" (2007 p375).

These historical attempts by regulators to manage the tensions between individualists and collectivists are more overt in economic justifications for regulation. Here regulation is justified given the danger that if left uncontrolled the market will fail to act in the public interest (Baldwin and Cave, 1999), though as a wicked problem (see section 1.3 above) environmental health regulation defies easy cost-benefit analysis (Kelman, 1981). Arguably the most well known environmental health related market failures are externalities, activities that can have consequences (positive or negative) for third parties (Ogus, 2004) as illustrated by Hardin's 'tragedy of the commons':

"The rational man finds that his share of the cost of the waste he discharges into the commons is less than the cost of purifying his wastes before releasing them. Since this is true for everyone, we are locked into a system of 'fouling our own nest', so long as we behave only as independent, rational, free-enterprises"

(Hardin, 1968: page unknown).

Regulation here is justified to compel polluters to pay the full cost of their activities and protect third parties and society more broadly (Baldwin and Cave, 1999), but the work of local government EHPs provides a response to other market failures. For example education and advice can help protect market consumers against information deficits, whilst regulation can ensure that essential services are maintained when market conditions are unfavourable (Baldwin and Cave, 1999). In unequal societies regulation can transfer resources to affected parties (Ogus, 2004), particularly vulnerable groups like the poor (Hardoy et al. 2001; Mitlin and Satterthwaite 2004).

This thesis therefore considers environmental health regulation as a form of social regulation of the market in the public interest whilst recognising its broader role in shaping society itself,

particularly in maintaining social order. However, this thesis also rejects a simplistic and ideological reading of regulation as social protection by the triumph of public interests – as represented here by the state and its EHPs - over those of private capital. Instead this thesis adopts a more critical approach by recognising what Hall (2012 p114) likens to the dualistic role of the state as “simultaneously repressive and protective”; here the state can both construct dangers and provide the means to maintain social order and sustain its legitimacy. The challenge of accommodating this complexity explains why a model of governance has been developed, to which Chapter 2 now turns.

2.3 Environmental health regulation as governance

Many models have been developed to describe public policy processes like environmental health regulation, but this thesis views regulation in its broadest sense as a four stage process:

- *Emergence* – defining the problem to be regulated and the economic, social and political processes involved in deciding to enact legislation;
- *Drafting* – deciding the content of the written law;
- *Implementation* - by the bureaucracy responsible for its enforcement; and
- *Impact* – the effects of regulations upon those they seek to control and protect.

(Dodd & Hutter 2000)

The utility of stages models for investigating the complex realities of such processes is recognised by policy academics (Hill and Hupe 2002; Parsons, 1995) and this thesis is focused on implementation, specifically how local government EHPs bring environmental health laws to life. However Dodd and Hutter (2000) themselves acknowledge that the regulatory process is far from linear, with stages often overlapping in reality. For example Lipsky’s classic theory of street-level bureaucracy argues that when faced with the dilemmas of public service (e.g. limited resources, seemingly endless demand) “...the decisions of street-level bureaucrats, the routines they establish, and the devices they invent to cope with uncertainties and work pressures, effectively become the public policies they carry out” (1980 p xii).

Empirical studies of front line environmental health officials describe similar dilemmas in which they use their considerable discretion to effectively construct legal compliance during regulatory encounters (Carson, 1970b; Fineman, 1998; Hawkins, 1984; Hutter, 1988, 1997). Therefore implementation is synonymous with regulation by local government EHPs and is used here to describe “the whole process of compelling observance with some broadly perceived objectives of the law” (Hutter, 1988 p5). In this ‘game’ (Hawkins, 1984) compliance with the law is a dynamic or working definition and the product of many interacting factors

(Fineman, 1988; Kelman, 1981; Hutter, 1988 & 1997; Richardson et al. 1983) that are incorporated into the model of governance below. For regulatory officials themselves however these studies found that legal compliance was not an end in itself but more a means towards the greater goal of improving environmental health, but this section now considers why the regulatory work of local government EHPs is best conceptualised as governance.

The emergence of local government EHPs during the Victorian period is located by the historian Crook (2007) within two theories of modern state power. The first theory associates local government EHPs with the gradual movement away from laissez-faire towards an increasingly bureaucratic and interventionist state. The term bureaucracy here refers to Weber's (1947) characteristics of rational public administration that for this thesis, drawing on Hutter's (1988) classic study of EHPs, describes:

- EHPs with professional qualifications;
- EHPs appointed by local government to carry out its legal duties;
- EHPs working in departmental hierarchies – seniors are generally desk bound and work in strategic and management roles, more junior staff divide their time between office and field; and
- EHPs with discretion but also rule bound and subject to organisational standards and expectations.

For the interventionist state, the historian MacDonagh (1958) described a Victorian revolution in government where, amidst growing pressure for reform, scandals triggered the development of legislation to control the problem that was the product of many competing parties and gradually implemented by an increasingly expert local administration. The sociologist Paulus (1974) used this model to describe the regulation of food adulteration by local government EHPs (and others) in Victorian England and EHPs worldwide retain extensive legal powers to intervene in the activities of business and the public in the collective interests of public health. But Crook (2007) argues that viewing regulation as solely interventionist obscures its interpersonal nature and its operation within a critical and sometimes hostile public sphere that is common to South African studies (Barnes, 2007; Lewin et al. 1998).

The second theory associates local government EHPs with the rise of the bureaucratic surveillance state. Here the characteristics of Weber's bureaucracy above are instead embedded within a broader theory of social power characterised by rational-legal authority that rests “on a belief in the ‘legality’ of patterns of normative rules and the right of those elevated to authority under such rules to issue commands” (Weber, 1947 p328). Similarly Foucault (1977) argues

that discipline and bureaucratic surveillance are integral to the modern capitalist state; here power is not simply a possession but a strategy inseparable from knowledge. This is deployed to discipline and control populations by techniques including hierarchies, organisational controls of continuous body supervision (e.g. barracks, wards and prisons) and panoptic surveillance whereby the disciplined subject knows he is being constantly observed whilst his observer sees everything but remains unseen and anonymous (Foucault, 1977).

Accounts of colonial and apartheid South Africa (Andersson and Marks 1988; Parnell, 1991, 1993, 2002; Rogerson, 1986; Swanson, 1977) describe this bureaucratic surveillance state, particularly its use of environmental health to justify the racial segregation, surveillance and control of the urban space to safeguard the (White) public's health. But this literature also suggests that the use of state environmental health power before democracy was more complex and multi-dimensional. For example in the early 20th century attempts by urban local authorities to enact segregationist laws on environmental health grounds were sometimes thwarted for reasons including the reluctance of local authorities to finance alternative housing and services for (Black) Africans (Parnell, 1991; Swanson, 1977), resistance from African property owners (Swanson, 1977) and the resistance of landlords and manufacturers who wanted Africans to live closer to work (Parnell, 2002).

After independence the bureaucratic surveillance state tightened its surveillance and control under apartheid and environmental health inequalities increased. But from the late 1970s factors including the increasing resistance and militancy of oppressed groups, structural changes in the economy (e.g. sanctions) and the demands of capital for a more skilled and stable urban workforce gradually weakened the state's power (Andersson and Marks 1988). This period also prompted the gradual development of new environmental health infrastructure and services for non-Whites, particularly in rural and 'homeland' areas though these improvements were fragmented and underfunded (Agenbag & Balfour-Kaipa 2008; Andersson and Marks 1988).

With democracy the vision for a new and developmental local government characterised by responsiveness, cooperation and accountability seems far removed from the bureaucratic surveillance state. Environmental health regulation is still shaped by the top-down actions of state bureaucrats concerned with disciplining and controlling the public's health; but this thesis argues that regulation has also always been influenced from the bottom-up and even sideways given the roles of the regulated and wider public (bottom), local government EHPs themselves (sideways) and their political masters (top & bottom) amongst others in shaping regulation (Crook, 2007; Hutter, 1988). This thesis uses governance to capture this complexity and now turns to explore its definition.

The Oxford English Dictionary (2006) defines both ‘governance’ and ‘government’ as ‘the action or style of governing’ but others distinguish between these terms, associating government with organisations that make and implement policies (Harpham & Boateng 1997; Leach et al. 2007; Stoker, 2002) whilst governance is a much broader concept. For Allison governance constitutes “the patterns of interaction between civil society and government” (2002 p1540) and others identify civil society as crucial in distinguishing government from governance (DFID, 2001; Harpham and Boateng 1997).

Governance is also associated with political power. The World Bank claims to have first started the governance debate in its report *Sub-Saharan Africa: From crisis to sustainable growth* where it was defined as “the exercise of political power to manage a nation's affairs” (World Bank, 1989 p60). Leach et al. (2007) argue that four years later the World Bank was using governance to support its broadly neoliberal development interventions. For example Osborne and Gaebler saw governance as the process by which governments would not simply be providing services but “*catalyzing* all sectors – public, private and voluntary – into action to solve their community’s problems” using market orientated methods like contracting and public-private partnerships (1992 p20 – italics in original). Debates about this changing role of government long predate governance but its neoliberal form has also been criticised for over simplifying state-market relations and failing to acknowledge that political power can move in individualist and collectivist directions (Leach et al. 2007).

Debate also centres on ‘good governance’ whereby existing systems of governance are not good and can be improved (Harpham and Boateng 1997). Factors associated with good governance include economic stability, pro-poor economic growth and accountable and effective public services (DFID, 2001; World Bank, 1989). But Grindle considers this expanding and idealistic agenda unrealistic, particularly in developing countries where public institutions are often weak, poorly resourced and have questionable legitimacy (2004). Instead she proposes a ‘good enough’ governance focused on the minimum conditions necessary for poverty reduction established by the systematic assessment of governance factors in each country (e.g. institutional history, reforms known to alleviate poverty).

This thesis adopts Allison’s definition of governance as “the patterns of interaction between civil society and government” (2002 p1540). Here ‘government’ is focused on metropolitan local government, particularly the CoJ and its EHPs, but other spheres of government and the criminal justice system are included. Civil society constitutes those individuals and institutions outside government control (Harpham and Boateng 1997) which in this thesis include regulated businesses and the public, non-government organisations (NGOs), the media and professional organisations. For EHPs themselves governance resembles what Crook (2007) describes -

during the late Victorian era - as the on-going circulation of power between state and civil society where all actors, by turn, resist and cooperate with one another in a form, however messy, of social ordering:

“...in the case of sanitary inspection, governance was the struggles inspectors endured and sought to overcome, which informed all aspects of their job, from direct encounters with the public to the on-going battle for greater professional independence” (Crook 2007 p393).

Whether the work of CoJ EHPs represents good, good enough or bad governance is considered by this thesis, but this chapter now introduces responsive regulation and its utility for describing environmental health regulation before the next section embeds this within a framework of governance.

2.4 Introducing responsive regulation

This section starts by explaining how the framework of this thesis was expanded by interdisciplinary socio-legal approaches before exploring the gradual development of the concept of responsive regulation and why it should be embedded within a framework of governance

2.4.1 Policy implementation to regulation: expanding socio-legal frameworks

This thesis was originally structured around two related theories about street-level public policy implementation. The political scientist Michael Lipsky developed his classic theory of street-level bureaucracy using research from cities in 1960s and 1970s America where poorly resourced officials - including EHPs - were accused of distorting policies by being unwilling to work with their clients, incompetent, biased and resistant to change (Lipsky, 1971). Lipsky critiqued these perspectives (1980) by synthesising previous theories to describe street-level bureaucrats as public service workers with substantial discretion that gives them considerable power over service users and autonomy from their employers. But this power is accompanied by the dilemmas of working in contexts not of their own choosing and in which resources are limited and demand far exceeds supply. This compels them to devise strategies to protect their working environment, for example by making decisions in private and favouring clients considered more likely to succeed. Here public policy is very much the product of street-level bureaucrats themselves, but is shaped by organisational and policy constraints, their relations with service users and the contexts in which their work takes place.

Maynard-Moody and Musheno (2000) build on Lipsky's work in their own research on American public service workers. They identify Lipsky's bureaucrats, calling them 'state-agents', but they argue that street-level bureaucrats do not describe themselves as such. Instead

they liken themselves to ‘citizen-agents’, making decisions based on their own identities as helpers or protectors for example and in response to individuals and circumstances. Here moralities are vital with citizen-agents more likely to help those considered worthy, whilst pragmatism is essential given the complexities of street-level work (Maynard-Moody and Musheno 2003). Sometimes both narratives exist in concert, for example when laws or policies support officials’ views of people, but tensions are also inevitable, for example when the law conflicts with officials’ views of fairness or morality. Therefore street-level work is “as much a process of forming and enforcing identities – of both citizen-clients and street-level workers – as of delivering services and implementing policy” (Maynard-Moody and Musheno 2003 p153).

The utility of both theories for describing how EHPs implement policy was confirmed during pilot studies in London and South Africa (see section 3.3.1 below). But this thesis has been enriched and further contextualized by locating these perspectives in the framework of Hutter’s (1988) socio-legal study of UK local government EHPs. This empirical study describes how local government EHPs implement policy by regulation and created the structure of the main literature review below. Here the core elements of the state-agent and citizen-agent narratives are incorporated in a broader socio-legal approach. There is no single agreed definition of socio-legal approaches, but this thesis reflects Harris’s (1983) work by going beyond a study of ‘the law in its social context’ towards an interdisciplinary study of the law and legal institutions from the perspectives of the social sciences. This thesis is grounded in theoretical perspectives from criminology, history, the law, organisational studies, political science and sociology. The methods used were largely unchanged from the two pilot studies but a greater emphasis was placed on the socio-legal aspects of environmental health regulation to provide better descriptions of how CoJ EHPs work.

To develop the governance model other studies of street-level environmental health regulators were identified and are summarised in Table 2.1 below. Two UK studies (Hawkins, 1984; Richardson et al. 1983) are colleagues of Hutter from the Centre of Socio-legal Studies of Wolfson College, Oxford University, whilst Fineman (1998) was chosen for its focus on the street-level construction of regulation. Kelman (1981) was selected because of its international insights and contributions to the development of the Oxford studies. The central government agencies in these four Northern studies were very different to local government but they enabled general factors influencing regulation to be explored and developed.

Table 2.1 Key studies of street-level EH regulators

Study name & country	Country	Study approach	Regulatory officials sampled (number)	Regulator
Crook & Ayee 2006	Ghana	Organisational	EHOs (85)	2 urban local government EH departments
Fineman, 1998	England & Wales	Organisational	Industrial pollution control, waste and water quality inspectors & managers (82)	6 area offices in 3 regions of 1 regulator
Hawkins, 1984	England & Wales	Socio-legal	Pollution control officers & managers (more than 70)	2 regional government agencies
Hutter, 1988	England	Socio-legal	Front line EHOs (53)	2 urban and 2 rural local government EH departments
Kelman, 1981	USA & Sweden	Public policy analysis	Occupational safety & health inspectors & managers (USA = 78, Sweden = 74)	2 area offices of 1 region of USA & Sweden government agencies
Richardson et al. 1983	England & Wales	Socio-legal	Pollution control officers & managers (50)	2 regional government agencies

Crook and Ayee's (2006) work was also included as a rare study of local government EHPs in two African cities undergoing reforms with some parallels to South Africa. In the absence of studies of South African EHPs other studies related to urban environmental health and local government informed the development of the governance model. These include Lewin et al.'s (1998) study of local government environmental health service reform in Cape Town, Beall et al.'s studies of local government reform in Johannesburg (2000a, 2000b and 2002) and the ongoing work of the South African Cities Network (SACN, 2004, 2006 and 2016). But this thesis now introduces the concept of responsive regulation at the centre of the governance model.

2.4.2 What is responsive regulation?

Early descriptions of regulation echoed Weber (1947) and Foucault's (1977) descriptions of the bureaucratic surveillance state by focusing on whether to punish or persuade offenders by what Hawkins (1984) calls compliance or deterrence/sanctioning strategies. Both aim to secure legal compliance and prevent offending behaviours (Reiss, 1984) but differ in how to achieve this. Compliance strategies seek to encourage compliance (Reiss, 1984) by solving problems and preventing others using methods like persuasion, negotiation and education (Hutter, 1997). Sanctions are primarily used as threats (Reiss, 1984) and are generally used in the long term and as a last resort when other options have failed (Hawkins, 1984; Hutter, 1988).

In contrast, sanctioning strategies use deterrence to achieve compliance by detecting and punishing offenders to prevent future offending behaviours (Reiss, 1984) or prohibit certain activities (Hutter, 1999). Such strategies have been associated with the police and compliance strategies with regulators (Reiss, 1984), including local government EHPs (Hutter, 1988), though this distinction maybe simplistic. For example Hawkins reminds that all law enforcers, whether police or regulators, “will sometimes advise, instruct, exhort, bargain, or threaten, and will sometimes take formal steps to initiate the process of criminal prosecution” (1991 p428).

Other studies retain the compliance/deterrence distinction but identify different degrees of compliance based approaches. For example Kelman (1981) differentiated between the formal approaches of the American Occupational Safety and Health Administration and the accommodative approaches of the Swedish Worker Protection Board. Within one regulator, the American Office of Surface Mining, Shover et al. (1986) associated some field offices with conciliatory/results-oriented approaches and others with more legalistic/rule-oriented approaches. Similarly, Hutter identified two degrees of compliance strategy when comparing four UK local government environmental health departments (1988) and three sections of the UK Health and Safety Executive (1997):

- *Persuasive strategies* - accommodating and characterised by education and negotiation over the long term; and
- *Insistent strategies* - also accommodating, but less flexible and more likely to invoke formal action.

Moving beyond the compliance/deterrence distinction Braithwaite, Walker and Grabovsky’s (1987) study of regulatory agencies remains one of the most comprehensive attempts to differentiate between enforcement approaches. They assessed 96 Australian regulators using enforcement related variables to develop the following taxonomy:

- *Conciliators* - 9 reactive agencies rejected law enforcement altogether, relying instead on mediation;
- *Benign Big Guns* - 17 reactive agencies had significant enforcement powers that business could not ignore but they rarely used them;
- *Diagnostic Inspectorates* - 11 de-centralised agencies had proactive inspection policies, well qualified inspectors and cooperative enforcement strategies concerned that gave prosecution a low priority;
- *Token Enforcers* - 25 conducted proactive inspections but these were more rules based, not diagnostic, with steady prosecutions but very low average penalties;

- *Detached Token Enforcers* - 9 shared the characteristics of *token enforcers* but were less co-operative with business;
- *Detached Modest Enforcers* – 7 agencies were more rules based and prosecute more than *Detached Token Enforcers* but remain closer to them than to *Modest Enforcers*;
- *Modest Enforcers* - 18 agencies conducted rules based inspections with more sanctions oriented enforcement strategies than all other types.

Hutter (1989) thought the four local government environmental health departments in her 1988 study fit best between the *diagnostic inspectorate* and *token enforcer* depending on whether they, respectively, used persuasive or insistent strategies. This taxonomy also illustrates that regulation is influenced by more than the decision to punish or persuade the regulated, the variables used by Braithwaite et al. (1987) including the law itself, the structure and policies of the regulator, the attitudes of officials and the characteristics of the business.

More recent debate has combined both approaches into a responsive model that instead questions when, not whether, regulators should punish or persuade. For example Kagan and Scholz (1984) argued that regulators should respond to the motivation and ability of businesses to comply in accordance with three images of the regulated:

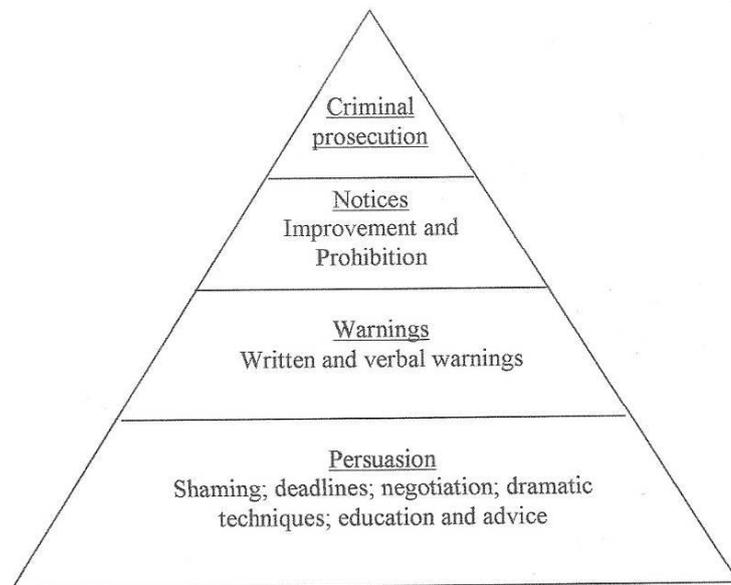
- *Amoral calculators* - motivated entirely by profit seeking, their non-compliance results from economic calculation with regulators responding like the police using less flexible, sanctioning strategies;
- *Political citizens* - inclined towards compliance, but non-compliance could result from principled disagreement with laws considered authoritarian or unreasonable. The regulator acts as a politician trying to persuade businesses to act in the public interest but willing compromise in response to legitimate business concerns or use sanctions if non-compliance continues.
- *Organizationally incompetent* - inclined towards compliance but offending results from organizational failures that require regulators to consult with and educate the business.

These three images are not mutually exclusive and Kagan and Scholz warn how they lack predictive power, for example where an inspector risks exploitation by the ‘bad apple’ whose perceived incompetence is actually amoral calculation. They also stress responsiveness whereby inspectors are “...prepared to shift from strict policemen, to politician, to consultant and back again according to their analysis of the particular case” (Kagan and Scholz 1984 p86).

These images were further developed by Ayres and Braithwaite (1992) who drew on game theory and wider sociological arguments to combine compliance and deterrence in responsive regulation. This aims to provide a flexible and measured framework for regulation that is responsive to the changing behaviours and motivations of the regulated and is summarised by Figure 2.1 below from Hutter's (1997) study of environmental health regulators. Here the least intervention by the regulator occurs at the base of the pyramid using persuasion in the first instance, but the regulator can escalate their interventions upwards on a 'tit for tat' basis using increasingly punitive approaches to secure compliance. Likewise, regulators can de-escalate once compliance is achieved and sustained. By doing so it is argued that regulators can secure a moral commitment to the law that rewards compliance, deters non-compliance and enables potential offenders to change their ways (Braithwaite 2007).

Figure 2.1 The pyramid model of responsive regulation

(Source: Hutter 1997 p227)



The pyramid above is commonly known as the 'hierarchy of sanctions' (Ayres and Braithwaite 1992 – hereafter the regulatory pyramid) and describes the responsive regulation of individual businesses in two ways. First, the decreasing area of each level higher up the pyramid represents the decreasing proportion of regulatory activity at each level. Second, a hierarchy of sanctions exists with most regulation occurring at the base of the pyramid to persuade individual businesses to comply. Most cases enter at this base; failure to secure compliance escalates enforcement on a tit-for-tat basis via verbal and written warnings and increasingly punitive approaches including legal notices that specify the improvements required for compliance or prohibit specific activities until rectified; further non-compliance could lead to the highest

punishment, criminal prosecution. Vice-versa, compliance at any stage could result in de-escalation down the pyramid.

2.4.3 A critique of responsive regulation

This critique first summarises the theoretical debate amongst sociologists about the regulatory pyramid, particularly its emphasis on prosecution as the last resort, and then sets out the theoretical position of this thesis on regulation. This critique then considers the effectiveness of responsive regulation and wider theoretical and empirical criticisms that justify its embedding within a wider framework of governance. The very shape of the regulatory pyramid has long prompted debate about why persuasion predominates, with prosecution generally a last resort. In response, Tombs and Whyte identify four competing theories that are now summarised before the theoretical position of this thesis is clarified.

Consensus or compliance-based theories of regulation are broadly pluralist, with power shared more or less equally between political parties, and based on the belief that the most effective regulatory strategies are those involving persuasion, bargaining and compromise through close relationships between regulator and regulated (Tombs and Whyte 2007). These remain dominant in Northern societies, particularly in the work of the Centre of Socio-legal Studies of Oxford University whose work includes three of the key studies informing this thesis (Hawkins, 1984; Hutter, 1988; and Richardson et al. 1983).

Alternatively, in capture theories regulatory relationships can get too close making government and regulators vulnerable to capture by powerful interests like big business. For example Bernstein argued that during the life cycle of the regulator its initial enthusiasm gradually ebbs away until it is eventually captured by business due to corporate lobbying, the consolidation of public and private interests and the movement of personnel between regulator and regulated (Bernstein, 1955). Both Gunningham (1974) and Yeager (1991) described this capture of environmental health regulators in the UK and USA.

The term neoliberalism is used here to describe a form of political economy that since the 1970s has influenced a wide range of national government policies across the world (Tombs, 2016), including South Africa (Habib and Padayachee 2000). Neoliberalism is hard to define but the following traits are characteristic of neoliberal policies:

1. A confidence in the market as an efficient mechanism for allocating scarce resources;
2. A belief in the desirability of a global regime of free trade and free capital mobility;
3. A belief in the desirability, all things being equal, of a limited and noninterventionist

role for the state and of the state as a facilitator and custodian rather than a substitute for market mechanisms;

4. A rejection of Keynesian demand-management techniques in favour of monetarism, neo-monetarism and supply-side economics;

5. A commitment to the removal of those welfare benefits which might be seen to act as disincentives to market participation (in short, a subordination of the principles of social justice to those of perceived economic imperatives);

6. A defence of labour-market flexibility and the promotion and nurturing of cost competitiveness; and

7. A confidence in the use of private finance in public projects and, more generally, in the allocative efficiency of market based mechanisms to provide public goods.

(Hay, 2004 pp507-8)

Neoliberal theories of regulation therefore argue that society is over-regulated by interventionist states; instead the self-regulation of business using market mechanisms (e.g. competitive advantage, compensation, insurance) could better protect environmental health (Tombs and Whyte 2007). That state regulators - like local government EHPs - still exist suggests that the neoliberal argument has not yet won, but this context inherently favours more persuasive interventions. Since the 1980s for example regulatory policy in many Northern countries has been characterised by deregulation, greater co-operation with businesses (e.g. via support, outsourcing, privatization) and increasing pressure on regulators to account for their activities and the costs they impose on business (Hutter, 2005; Snider, 2003; Tombs, 2016).

These theoretical arguments are returned to throughout this study, but this thesis adopts Tombs and Whyte's (2007) preference for so-called 'critical approaches to regulation'. These move beyond struggles between states versus capital only and instead view regulation as a process determined both by the product of struggles between states and business **and** states and the electorate; here power is distributed unequally but spaces for challenging power are not captured or closed down by dominant markets. Here the role of local government EHPs in managing the struggles between the environmental health interests of business and the wider public is therefore critical to maintaining social order and a functioning economy, arguments that date back to the origins of environmental health in section 1.2 above. But this section now considers what is known about its effectiveness before considering other theoretical and empirical critiques of responsive regulation.

This thesis uses responsive regulation to describe, not prescribe, how local government EHPs regulate environmental health and does not seek to measure its effectiveness but debate centers on whether regulators are actually responsive to the regulated. In her analysis of regulatory

responsiveness to more than 2500 environmental health offences in Denmark, Nielsen (2006) found that inspectors can act responsively to the regulated, but this was generally to a low degree and did not follow the tit-for-tat pattern described by Ayres and Braithwaite (1992). Instead the area being regulated, the characteristics of the regulator itself and the individual preferences of inspectors were more influential. In a later study of 141 Australian businesses in relation to federal competition and consumer protection law, Nielsen and Parker (2009) also found little evidence of tit-for-tat responsive regulation in practice but they acknowledged its potential for coercing businesses into compliance when compared to more cooperative (persuasive) approaches. In the absence of more reviews of responsive regulation, this section now considers two studies of the effectiveness of different regulatory approaches used by local government EHPs, amongst others.

In her systematic review of workplace health and safety regulation Davis (2004) identified some gaps in knowledge but concluded overall that there was enough evidence that regulation, particularly the threat of credible enforcement, is the primary motivator for organisations to improve their health and safety. Further, UK government moves towards increasingly self-regulatory drivers could fail for reasons including the poor track record of voluntary business reforms in other areas (e.g. the environment), the gap between increasing knowledge and improving compliance and the weak business case for improving compliance. Therefore Davis argues that regulators should increase the levels of inspection and law enforcement, whilst alternative approaches like partnership working should add to, not replace, core regulatory activities. In response to this review Wright and Marsden (2005) agreed that more research was needed but disagreed that government policy was a simple choice between law enforcement versus self regulation and instead argued this was more about the 'relative roles' of enforcement, education and other approaches.

Fairman and Yapp (2005a) completed an empirical study exploring perceptions of compliance amongst UK food sector SMEs and evaluating the impact of the regulatory approaches of local government EHPs. They found most SMEs were poor at identifying offences and, more worryingly, perceived compliance as the norm for their businesses until told otherwise by EHPs and additional research into workplace safety compliance in UK SMEs (Fairman and Yapp 2005b) further confirmed these findings. Persuasive approaches involving high levels of education and the breaking down of risk management systems into prescriptive ('just tell me what to do') instructions were most effective in securing compliance. But for reasons including the lack of resources to educate SMEs Fairman and Yapp concluded more punitive regulation might be necessary, including the automatic prosecution of SMEs without safety management systems, though this might not work and could be politically unacceptable (2005a).

In summary both these studies illustrate the complexity of measuring the effectiveness of regulation, particularly the importance of understanding the regulatory policy context and business perceptions of regulation. But both also illustrate the significance of local government EHPs in driving regulation and the utility of approaches utilising both persuasion and punishment to improve environmental health.

In wider policy terms, Baldwin and Black argue that in certain circumstances (e.g. serious incidents) gradual escalation up the pyramid may not be appropriate and such by-passing towards increasingly punitive approaches is described by others including Hawkins (1984) and Hutter (1988). Movement up and down the pyramid is also dependent on the cooperation of the regulated but Baldwin and Black (2008) argue that this may not be so easy in practice because the threat and reality of more punitive approaches risks damaging these relationships as studies of EHPs have also described (Crook and Ayee 2006; Hutter, 1988).

Tit for tat responsiveness also assumes that the regulated will behave rationally and respond to increasingly punitive approaches, but Baldwin and Black suggest that other pressures including culture and competition could exert more influence on businesses than regulators (2008). Studies also suggest that the sanctions available to EH regulators could provide an inadequate deterrent as discussed in section 2.5.3 below. Lastly, regulatory systems are complex with businesses typically exposed to many regulators such that the transmission of clear messages between regulator-regulated is much less likely (Baldwin and Black 2008).

Baldwin and Black (2008) also identify some practical limitations of responsive regulation. Sometimes there may not be enough interactions for the pyramid to operate, though for EHPs this is less likely given the district based nature of their work (assuming the same EHP works there). As Ayres and Braithwaite (1992) recognise, regulation is more than a two player game but regulators might also lack the resources for responsiveness and encounter legal uncertainties or a lack of political will towards using more punitive approaches (Baldwin and Black 2008) as confirmed by section 2.5 below. The fairness, proportionality, accountability and consistency of responsive regulation can also be questioned, particularly whether its lack of formality undermines these values and the rule of law (Baldwin and Black 2008) and in response this section now introduces three alternative models of regulation developed in recent years.

Gunningham and Grabosky's (1998) 'smart regulation' puts greater emphasis on non-state actors (e.g. trade associations, professions, business) in the regulatory process using a three-dimensional pyramid. However, these authors admit that many of the limitations of responsive regulation remain, notably the problems of escalation and communication within even more complex systems. Alternatively, Baldwin and Black's (2008) 'really responsive regulation'

argues that regulators should not only be responding to the compliance behaviours of business but also their motivations and context as well as those of the regulator itself (e.g. history, resources, performance management) and changes to the law and policy.

Risk based approaches to regulation are increasingly popular (Hutter, 2005), particularly amongst EH regulators (Fairman, 1999; Hampton, 2005). In the UK the Hampton Report continues to influence local government EHPs (and others) towards risk based regulation by arguing that it enables the prioritisation of (its assumed) increasingly limited state resources for regulation towards high risk businesses/sectors, whilst promoting self regulation because (it is assumed) most other businesses can regulate their own risks and thereby earn autonomy from regulatory scrutiny (Hampton, 2005). Others question Hampton's rationale because of its neoliberal assumptions (Tombs, 2016) and the scientific uncertainties of risk based regulation (Jones et al., 2008; Mullen et al. 2002; Rothstein et al. 2006) that have been borne out in practice. For example two investigations into fatal *E.coli* 0157 food poisoning outbreaks identified premises local government EHPs had categorised 'low risk' (Cox, 1998; Pennington, 2009). Wider concerns include its greater demands on resources and expertise (Baldwin and Black 2008; Rothstein et al. 2006) and its ability to render inequalities of power and conflicts of interest all but invisible (Tombs, 2016).

In conclusion, this thesis continues to use responsive regulation to describe the work of EHPs but recognises its theoretical and empirical assumptions and challenges. In recognition of the need to explore responsiveness to factors beyond the behaviour of the regulated this thesis therefore embeds the regulatory pyramid within a wider governance model to which the next section turns. Further, this thesis will look out for evidence of risk based regulation in South Africa and could also be considered a response to Nielsen and Parker's (2009) call for more research into how regulators communicate threat and cooperation.

2.5 A governance model of environmental health regulation

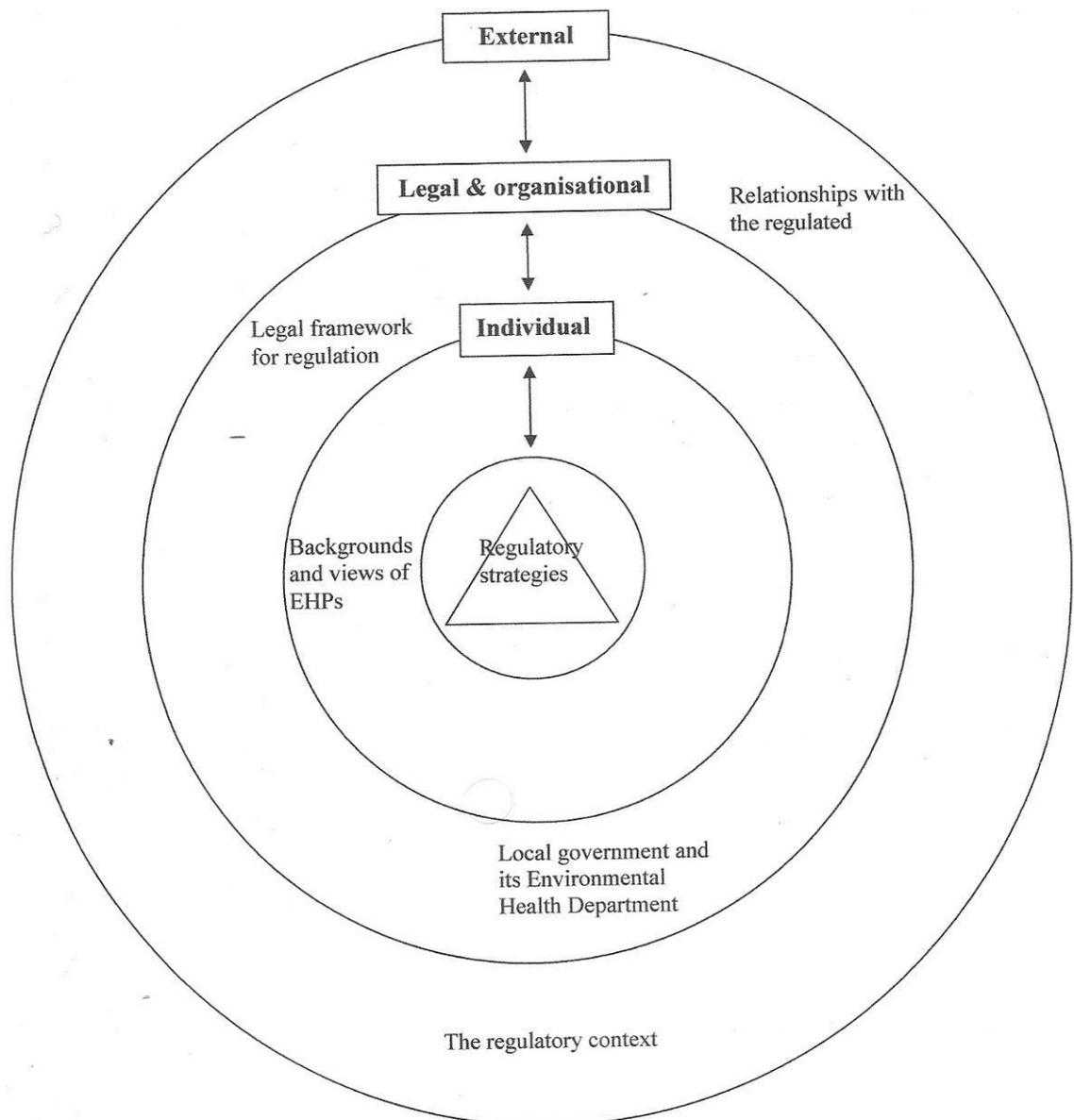
This section starts with an overview of the governance model created by this thesis to summarise how local government EHPs regulate environmental health before exploring each factor within the model in more detail and how it might influence the regulatory approaches of EHPs towards punishment or persuasion.

2.5.1 An overview of the governance model

This model in Figure 2.2 below embeds the hierarchy of sanctions pyramid of responsive regulation towards individual businesses from Figure 2.1 above within a wider framework of governance created by this thesis and based on the critique above and the key studies in Table 2.1 above. These identified responsiveness to factors at three different levels that could shape

how local government EHPs regulate which are explored across section 2.5. At the centre of the governance model the regulatory strategies used by EHPs are shaped by individual, legal and organisational and so-called external factors arranged in concentric circles to depict the blurred boundaries of governance where these factors frequently overlap and power circulates between various actors. A metaphor from Herbert Kaufman's (1960/2006 p68) classic study of American forest rangers visualises this well. Viewing Figure 2.2 below in three dimensions, here regulation at the level of the local government EHP looks like a vast funnel with the EHP at its throat: all the factors above pour out materials which, mixed and blended by the EHP, emerge in a stream of regulatory action in the field. Section 2.5 now reviews the literature on each factor and why EHPs frequently favour persuasion over punishment.

Figure 2.2 The governance model of regulation by local government EHPs



2.5.2 The regulatory context

Studies have described how regulators can be influenced by what are crudely termed external factors in Figure 2.2 above and this sub-section explores the changing political and socioeconomic contexts in which regulation takes place (Diver, 1980; Hutter & Manning 1990; Kelman, 1981; Shover et al. 1986), what Hawkins (2002) calls the ‘surround’. Chapter 1 described the poverty and inequality that EHPs are confronted by each day but this sub-section adds the historical and macroeconomic context and public and media attitudes to regulation to this regulatory context.

There is little published on regulation and local government EHPs in South Africa before democracy, but mentions in the historical literature suggests that their work was characterised by law enforcement and sometimes contributed to poverty and inequality described in section 1.3 above. The earliest records of environmental health regulation in the region back to the mid-17th century when early European Cape settlers enacted and enforced laws including those to protect drinking water from contamination (Rabie and Fuggle 1992). The British took control of the Cape from 1795 and gradually created racially based local authorities across Southern Africa (de Visser, 2005).

Colonial sanitary inspectors used regulation to enforce the racial segregation of urban areas (Parnell, 1993) in response to outbreaks of disease (Swanson, 1977) and, with echoes of a racial Chadwick-type utilitarianism, the belief that segregation could increase labour controls and solve problems like insanitary housing and ‘deteriorating moral standards’ like prostitution (Mabin, 1986). This ‘sanitation syndrome’ equated black urban settlement, labour and living conditions with threats to public health whilst rationalizing white fears and prejudices and the need for official social controls (Swanson, 1977). Colonial local authorities also extended their regulation of the urban space to control African street vendors in particular (Parnell, 2002; Rogerson, 1986) but remained reluctant to provide basic services to emerging townships (Proctor, 1986) and urban slums (Parnell, 1991).

After independence in 1948 the environmental health of the majority of South Africans continued to deteriorate during the apartheid era. At the national level the environment was a low priority next to industrialisation and economic development, particularly from the 1970s when on-going sanctions, boycotts and recession prioritised economic survival (Steyn, 2008). International opposition to apartheid also isolated South Africa from the earlier global ‘new public health strategies’ identified in section 1.3 above (Steyn and Wessels 2000). Apartheid reinforced existing racial local government structures (de Visser, 2005), with cities ‘run by Whites for Whites’ (Beall et al. 2000a) and their local authorities able to sustain the highest standards thanks to substantial revenues and Black migrant labour (de Visser, 2005).

By contrast Black areas had entirely separate local government structures or none at all, whilst apartheid limitations on business activities in these areas produced inadequate revenues for service provision (RSA, 1998). Without basic services these areas were prone to disease outbreaks that provided renewed justification for the removal of Black-Africans from urban areas (Andersson and Marks 1988; Ferrinho et al. 1991). The law largely failed to protect environmental health because large state owned polluters were exempted (Steyn, 2008), whilst regulators often failed to regulate because of fragmented responsibilities, poor resources (Petrie et al 1992) and a lack of political will (Davies et al. 1997; Rabie and Fuggle 1992). From the mid-1980s attempts were made to restructure local government and direct funding towards priority areas like the townships (RSA, 1998), but in 1994 the democratic government inherited approximately 12 million people without access to clean drinking water, 21 million with inadequate sanitation (ANC, 1994) and local government characterised by racism, weakness and illegitimacy (de Visser, 2005).

South African local government EHPs therefore find themselves in a difficult situation. Historically disadvantaged populations could be understandably suspicious of their motives, whilst the pressure is on local government EHPs to maintain the highest standards in former White areas but what might this mean for the approaches of local government EHPs themselves? On the one hand this context favours more persuasive approaches to support historically disadvantaged populations and help build the legitimacy of local government as an organisation to develop the environmental health of all. But there also remains a need to retain the more punitive regulatory approaches of the past, though without the racial dimension, for those businesses whose activities are harming South Africa's public health, but this section now explores the potential influence of macroeconomic policies on regulation.

In the UK a powerful and sustained deregulatory rhetoric has characterised macroeconomic policy since the 1980s, with regulators including EHPs accused of inefficiency and being burdensome to business (Hampton, 2005; Hutter, 2005; Tombs, 2016). One study from this period describes health and safety inspectors perceiving the government as hostile to regulation, one manager arguing that this context could make new inspectors think more like social workers than regulators because prosecution may not be "the right thing to do" (Hawkins, 2002:118). The South African government's shift towards more neoliberal macroeconomic policies is widely recognised (Coovadia et al. 2009; Habib and Padayachee 2000; Sanders and Chopra 2006) but whether/how this is influencing EHPs is considered by this thesis.

During periods of economic downturn and declining political support for regulation other studies describe how regulators, including local government EHPs, felt pressured to co-operate

more with business (Hutter, 1988; Kelman, 1981; Shover et al. 1986; Tombs, 2016). South Africa is very different to the UK/USA but in Cape Town Lewin et al. described several local government EHPs reflecting that it would be difficult to enforce policies that could harm development and jobs, one commenting that “...the enforcement will always be weak, because the economic forces are stronger” (1998 p21) but this section now considers how public and media attitudes could influence regulation.

Hutter (1988) argues that local government EHPs do not generally attract public attention or automatic support because their work is characteristically undramatic and largely hidden from the public eye, whilst the public might not know a potentially harmful offence has been committed and that EHPs exist to protect them. Unsurprisingly these EHPs acknowledged the need for public education about environmental health, and studies have identified poor public awareness of environmental health and EHPs in South Africa (Allison, 2002; Lewin et al. 1998) but that is not to say that the public do not care about this.

Hawkins and Thomas (1984) describe how regulators can find themselves caught between ‘activist’ and ‘business’ publics with the former committed to the regulation of serious harms produced by business despite its costs, whilst the latter see regulation an unnecessary burden on business by dictatorial bureaucracies. The regulator in the middle can attract criticism from both publics (Hawkins, 1984) and evidence from South Africa suggests that both are very active. Since 1988 a civil society ‘activist’ public (Steyn and Wessels 2000) has been instrumental in holding government environmental health regulators to account (Davies et al. 1997; Leonard and Pelling 2010). Simultaneously, the emerging narrative in South Africa’s neoliberal macroeconomic policies associating regulation with burdening business (RSA, 2006) suggests its business public is also influential. But regulators face pressure from other activist publics.

Relationships between local government officials and the general public in developing countries are frequently described as poor (Hardoy et al. 2001; WHO, 1993). In South African cities affluent (former White) areas continue to benefit from better environmental health services for reasons including powerful voices (Beall et al. 2002) and uncertainties amongst EHPs about working in developing areas (Lewin et al. 1998). Poor service delivery has also led to civil unrest as illustrated by Barnes (2007) during the 2005 typhoid outbreak in Delmas, Mpumalanga. This killed five people and infected hundreds of others and prompted a textbook government response including the provision of temporary healthcare facilities, water points and a hygiene behaviour campaign. But Delmas residents saw this response differently; still reliant on bucket latrines they associated the outbreak with slow service delivery and government failure to meet their Constitutional environmental health rights. Residents were also offended by reports that the outbreak was their fault and began a series of protests and police

confrontations (Mail and Guardian 2005). Similarly, Nations and Monte (1997) describe widespread public resistance in Northeast Brazil when the poor felt blamed and punished by the government's cholera control campaigns.

The media plays an important role in bringing environmental health issues to public attention and shaping public attitudes towards regulation (Hutter, 1997) and holding regulators to account for their actions (Bardach and Kagan 2006; Hawkins, 2002; Hutter and Lloyd-Bostock 1990). The routine work of EHPs typically attracts little media interest (Hutter, 1988), but high profile cases can expose them to open scrutiny and make regulators more likely to use more punitive approaches towards maintaining their own credibility (Hawkins, 1984) and prompting media support for more regulation and stricter enforcement (Bardach and Kagan 2006). Regulators also value the threat of public stigma associated with prosecution cases (Hawkins, 1984), though Hutter (1988) found that most EHPs thought the press coverage of prosecutions provided a greater deterrent than (low) financial sanctions. Regulators are also keen to avoid coverage associating them with corruption (Perry, 2000) and injustice (Hawkins, 1984; Huchzermeyer, 2004). But what are the implications of this for local government EHPs?

Two key studies argue that the lack of a strong public and moral consensus for the mandate of environmental health regulators threatens their very authority (Hawkins, 1984; Hutter, 1988) but in South Africa any consensus that exists could be even weaker. Comparison with the police is useful here, where Hawkins (1984) argues that the British police enjoy a relatively secure moral mandate. After three years observing the South African Police Service in Johannesburg, Steinberg (2008) concludes that the public have not yet given their consent to being policed and factors associated with their poor legitimacy included the legacy of apartheid and corruption. Therefore it's not surprising that Cape Town EHPs were viewed as 'policemen' by locals (Lewin et al. 1998) and Johannesburg's public were suspicious of local government's new participatory approaches (Mathee et al. 2002).

Operating in this uncertain regulatory context Hawkins argues that more persuasive regulatory strategies enable the consent of the regulated to be sustained because "bargaining is, ultimately, morally compelled" (1984 pp127-8) and Crook and Ayee's (2006) key study of EHPs in two Ghanaian cities provides some support for this. They describe how the public image of the 'authoritarian EHP' and decades of city government failure to improve services created public indifference towards regulation. Amidst policy shifts advocating more persuasive approaches doubts remained about whether EHPs were actually working more cooperatively, but most EHPs thought their relationships with the regulated and wider public had become "more humane", respectful and friendly (Crook and Ayee 2006 p63).

Together the regulatory context for local government EHPs is far from certain and frequently favours more persuasive strategies towards the base of the regulatory pyramid, particularly if they help legitimise the developmental role of local government in society. This section now turns to explore the uncertainties surrounding environmental health law itself.

2.5.3 The legal framework for environmental health regulation

This section argues that environmental health law is characterised by uncertainties that can weaken the mandate of local government EHPs and make them more likely to favour persuasive approaches. It starts by considering the uncertainties inherent in the law before summarising the debate questioning the very criminality of environmental health offences. The section then considers why the considerable discretion of EHPs is inevitable before considering how the fragmentation of responsibilities for environmental health and the legal position of EHPs creates further uncertainties. This review draws largely from studies of British law but its relevance is argued here because of its long standing influence on South African law and its EHPs.

The vast number and breadth of laws enforced by local government EHPs has long characterised their work (Crook, 2007; Hill, 2005) and creates many basic challenges including staying up to date and finding the right law for the case (Kelman, 1981). EHPs in Hutter's (1988) UK study inevitably likened themselves to 'jacks of all trades and masters of none', but they were also concerned about their expanding legal responsibilities and the inadequacies of the law in specifying their precise role (i.e. when to punish or persuade) and managing the conditions they are confronted with each day.

Hawkins and Thomas (1984) argue that where regulatory goals are clearly defined and unambiguous they are likely to be enforced more stringently, but environmental health law has been characterised by a combination of broad legal standards and precise guidelines since Victorian times (Crook, 2007; Wilson, 1881). Standards like 'adequate' or 'reasonable' for example effectively save the law from deciding how to resolve the dilemmas created by competing regulatory interests (Hutter, 1988), but the interpretations of officials facing these dilemmas are themselves debated. For example in the UK and South Africa industry's case for controlling emissions can seem far more reasonable to regulators than the concerns of local people (Davies et al. 1997; Gunningham, 1974; Leonard and Pelling 2010).

The nature of environmental health law is constantly changing. Traditional 'command and control' laws have operated for centuries and assume that the threat of criminal sanctions wielded by regulators against offending individuals/businesses will be sufficient to induce the desired behaviours (Ogus, 2004). At the other extreme, systems of business self-regulation potentially eliminate the need for regulators completely (Ayres and Braithwaite 1992) and in the

UK self-regulatory agreements between regulators and business remain rare and controversial but are increasing in number (Tombs, 2016). But wider legal reforms in this direction via enforced self-regulation are widespread and compel businesses to devise their own rules for operating within legal parameters, where the role of the regulator changes to approving their management systems and monitoring their performance (Braithwaite, 1982). These legal parameters increasingly involve risk based regulation (Fairman, 1999) and all its assumptions and limits (see section 2.4.3 above), but this section now turns to the uncertain criminality of environmental health.

Questions have long been raised about the criminality of regulatory offences when compared to more traditional crimes (Carson, 1980; Hutter, 1988). One distinction is that regulatory offences can sometimes be corrected (Hutter, 1997) but, returning to the theoretical debates in section 2.4.3 above, sociological accounts of the criminalisation of UK business activities are divided about whether this differentiation was the product of negotiated compromise or the deliberate decisions of legislators in the interests of capital. Paulus (1974) argues that developments in the law to regulate food adulteration in Victorian England were achieved by an accommodation of interests. Here EHPs (then sanitary inspectors) and magistrates, Paulus argues, were frustrated at critical stages to avoid damaging the status of that ‘epitome of middle-class morality and respectability’, the mid-Victorian businessman.

Alternatively, Gunningham (1974) describes how a powerful British industrial lobby influenced environmental protection laws that responded to public opinion but were so weak as to be virtually unenforceable by regulators who were themselves often reluctant to penalise industry. In this capture thesis, powerful interests and structures were therefore left largely undisturbed. Carson instead argues that in Victorian Britain the distancing of ambiguous factory crimes from the criminal law gradually legitimised the factory system and reproduced the emerging social class structure (1979). This ‘logic of regulation’ as he later described it both protected manufacturers from illegal domestic competition and created a disciplined workforce whose working conditions were legally enforceable (Carson, 1980).

The moral neutrality associated with regulatory offences further differentiates them from more traditional crimes because they are sometimes less visible, harder to detect (Hawkins, 1984; Hutter, 1988) or have no obvious victims (Moran, 1997). But the association of regulatory offences with white collar crime (Carson, 1970b; Tombs and Whyte 2007) provides an alternative explanation. In *White Collar Crime* sociologist Edwin Sutherland (1949/1983) described how high status criminals frequently escape punishment, unlike the lower classes, because their crimes are administered differently and can remain undetected, or not prosecuted or convicted because of their power to influence the criminal law. Later, Foucault (1977)

described how developing capitalist societies structure themselves along class lines by more precisely defining and controlling the illegalities of the lower classes, particularly relating to theft. The bourgeoisie however can work around their laws through the ‘illegality of rights’, manipulating gaps in the law to redistribute these illegalities via measures including special legal institutions and reduced fines (Foucault, 1977).

Empirical evidence for this in studies of environmental health regulation is mixed. The potential for large organisations to shape regulation in their interests is well established (Gunningham, 1974; Yeager, 1991). Some found punishment less prominent in the regulation of larger businesses (Grabosky and Braithwaite 1986; Yeager, 1991), but their greater complexity provides an alternative explanation (Hutter, 1997). Local government EHPs exhibited no leniency towards high status offenders (Hutter, 1988) but in Ghana such offenders, particularly those with political connections, were largely untouchable by local government EHPs (Crook and Ayee 2006). This section now considers other ways in which regulatory offences can be differentiated from more traditional crimes.

Mens rea (literally ‘guilty mind’) requires the prosecution to prove the defendant intended to commit a crime but in regulatory law it has largely been replaced by the principle of strict liability. This mandates businesses to comply with legally prescribed standards and originated at different times across environmental health law. In British workplace safety law for example the *Factory Act, 1844* substantially removed intention from the crimes of employers. This made the law more enforceable for inspectors who prior to this had to prove in court that an employer intended to commit an offence, though an element of *mens rea* remained with employers retaining the defence of due diligence⁴ and the fault of other persons (Carson, 1979).

In British food safety law strict liability dates back to 1873 when appeals against two convictions for the sale of adulterated foods under the *Food and Drugs Amendment Act, 1872* led judges to reinterpret the law in favour of strict liability. They argued that the intention of any law is to prevent prohibited acts and those selling adulterated goods have a responsibility to know the nature and composition of the goods being sold (Paulus, 1974). In theory this provided a deterrent and made the law more enforceable because prosecuting inspectors - like their workplace safety counterparts above - no longer had to prove *mens rea* but in reality few were convicted and this Act was rarely enforced outside London (Paulus, 1974). However Norrie argues that strict liability remains a social and political construct that creates a paradox:

⁴ The defence of due diligence remains common in environmental health law and typically requires the defendant to prove they did all they ‘reasonably’ could to prevent an offence.

“The ultimate basis of strict liability is a judicial, and more broadly societal, perception of who the ‘real criminals’ are and it is this that informs the hazy distinctions between ‘real’ and ‘quasi’-crime which bedevil the law in this area. Differentiation within the law fails because the need for it relies on a pre-existing societal differentiation that the law must deny in order to protect its universalistic and formalistic self-image” (Norrie, 2001 p92).

There is some evidence that strict liability provisions can make officials (Carson, 1970a) and the judiciary (Ogus, 2004) more hesitant to sanction offenders, but studies suggest that *mens rea* remains an important factor in the decision making of regulators (Carson 1970b; Hawkins 1984; Hutter 1988). Further, legal defences against strict liability continue to incorporate *mens rea* (Carson, 1970a) but the process of assimilation can also lessen the criminality of regulatory offences. Here Norrie (2001) argues that using the criminal law to regulate business activities is further limited by the challenge of establishing corporate criminal liability; here attempts to assimilate the criminal liability of the individual with those of complex organisations are fraught with problems. For example linking individual acts to those of the business itself, particularly in companies comprising many different structures and legal relationships (e.g. shareholders, contractors) can make them hard to sanction, but this section now considers why the discretion of regulatory officials is inevitable.

Together all these legal uncertainties confer considerable discretion on officials like EHPs to determine whether an offence has been committed and how strictly the law should be enforced. By linking the law to the offence Hawkins argues that discretion gives the law its very substance and life (1984), but whether or not discretion is problematic is the subject of debate. Some consider official discretion necessary but that it should be minimised and subject to predetermined rules to ensure accountability and guard against injustice (Hutter, 1988), though Lipsky (1980) is sceptical of such controls given the abilities of street-level bureaucrats to subvert them! Others prefer broader standards that allow for more flexible interpretations by professionals and can accommodate changes in the activities being regulated (Hutter, 1988).

Discretion also extends to the application of criminal sanctions where key studies have found they are not intended (by officials) to punish but are applied more as a practical tool towards compliance, frequently as a last resort (Hawkins, 1984; Hutter, 1988). One reason for this is that studies from the UK (Bartrip and Fenn 1983; Hutter, 1988; Ogus and Abbott 2002) and South Africa (Lazarus et al. 1997; Petrie et al. 1992) suggest that sanctions for environmental health offences are so low that they cannot deter and could undermine the authority of regulators.

The ability of EHPs to influence the law is made more difficult because responsibility for regulation has traditionally been fragmented across government departments and agencies (Burke et al. 2002; Hutter, 1988). Further, the statutory position of EHPs will also be considered because in the UK the duty on local government to appoint EHPs was repealed in 1972, 100 years after its introduction (Crook, 2007), and replaced by ‘proper officers’ (or similar) who may, or may not, include EHPs. Since this time dedicated Environmental Health Departments in UK local government have largely disappeared with their functions increasingly undertaken by other departments (Burke et al. 2002; Hutter, 1988) or the private sector (Tombs, 2016) and potentially further weakens the mandate of EHPs. This section now considers how organisational factors can influence regulation.

2.5.4 Local government and its environmental health services

Seven years after its creation this thesis will explore the emerging structure and organisation of environmental health services at the CoJ and how they influence its EHPs. Section 2.5.2 above on the regulatory context identified the South African government’s shift towards neoliberal macroeconomic policies that is examined further by this thesis. One aspect of this is a redefining of the state’s role from ‘rowing to steering’ (Osborne and Gaebler 1992) or leading to facilitating the conditions to create development and economic growth (Chipkin, 2002). This changing role for government is integral to public service reforms in developing countries (Batley and Larbi 2004), where the failure of many governments to deliver basic services to poor people has led to policy shifts towards new ways of delivering services jointly with markets and civil society (World Bank, 2003).

Part of this failure has been attributed to neoliberal perceptions of traditional/Weberian public administration - of which local government EHPs are a classic example - as bloated, inefficient and unresponsive (Osborne and Gaebler, 1992; Tombs, 2016). In response ‘new public management’ reforms have transformed public services into results-oriented organisations driven by performance measures, incentives and market mechanisms including the contracting-out or privatization of public services (Hood, 1991; Osborne and Gaebler 1992). How these reforms are influencing the CoJ is considered by this thesis, but in Ghana Crook and Ayee found that they required greater collaboration between EHPs, the private sector and civil society (2006). Pressure was also on EHPs to be more flexible and responsive to public demands, but this study and others conclude that these reforms are proving more challenging than envisaged (Batley and Larbi 2004) and will take time and skilful political navigation (World Bank, 2003).

Local government itself exerts various controls on its employees that is explored by this thesis. The role of policies to direct the behaviour of regulators has long been recognised but their influence is questioned by uncertainties including the great breadth of regulatory standards, the

impossibility of producing instructions for all situations and the inherent difficulties of monitoring front-line officials (Diver, 1980; Lipsky, 1980). These uncertainties are characteristic of the world of EHPs, but Hutter (1988) found that internal policies alone had limited influence on EHPs though they were more likely to ‘go by the book’ during work (e.g. complaints) that is more visible and open to public scrutiny.

Performance management is an important driver of regulation and officials are likely to conform when their performance is linked to their actions (Hawkins, 1984; Hutter, 1997) though Hutter (1988) found that some EHPs viewed such monitoring a threat to their integrity and professionalism and sought to thwart it like Lipsky’s street-level bureaucrats (1980). One survey of UK EHPs described their ambivalence to performance management, some recognising it was essential but others warning that resources were increasingly based on outputs (e.g. numbers of inspections/complaints) and not outcomes (e.g. improved environmental health) (Burke et al. 2002).

Organisational culture can also influence regulation and important factors included the norms of the regulator, peer pressure and perceptions of what constitutes a ‘good’ enforcement officer (Hawkins, 1984; Hutter, 1989, 1997; Shover et al. 1986). Echoing the selection of Kaufman’s Forest Rangers (1960/2006), Hutter found local government recruited EHPs considered more likely to comply with the regulatory strategies and expectations of managers and peers (Hutter, 1988). Differing organisational priorities are also influential, Hutter and Manning concluding that regulation is partly a product of the tensions:

“...between management, with their concern for overall performance, compliance and the organisational mandate, middle management whose aim is to control the inspectors and their practices, and the inspectors who are inclined to see their task as exercising an immediate face-to-face responsibility and resolving culpability on their particular ‘patch’ or ‘turf’” (1990 p127).

In South Africa itself further organisational factors include restructuring fatigue (Hunt and Lewin 2000) and the lack of developmental skills and approaches amongst EHPs and other local government officials (Allison, 2002; Lewin et al. 1998) but this section now considers other ways that local government can control its officials.

The location of EHPs in local government raises questions about the control of regulators by politicians that is explored by this thesis. In theory such democratic control ensures EHPs are responsive to public concerns (Hutter, 1988), but studies from Cape Town describe local politicians with a poor knowledge of local government and environmental health and suspicious

of official power (Allison, 2002; Lewin et al. 1998). Opportunities for political bias are also ever present. In the UK for example EHPs feared politicians could divert resources from preventative work towards more visible problems like housing (Hutter, 1988). In South Africa EHPs believed politicians were largely motivated by ‘vote catching’ (Lewin et al. 1998) and party politics (Allison, 2002) and the interventions of politicians connected to businesses in Ghana sometimes rendered EHPs powerless to regulate them (Crook and Ayee 2006).

Concerns about the poor resourcing of EHPs date back to the Victorian age (Crook, 2007; Hamlin, 2013; Wohl, 1983) and continue in the UK (Burke et al. 2002; Pennington, 2009) and South Africa (Balfour-Kaipa, 2007; Eales et al. 2002; Hunt and Lewin 2000; Wright and Mathee 2013). One British political scientist even singles this out in his critique of top-down environmental health policy making to question whether it is little more than symbolic:

“Parliament may relatively easily pass laws allowing the control of certain activities or the provision of certain services whilst not providing the resources to make action possible. Relatively small teams of local environmental health officials, for example, have to cope with a mountain of legislation designed to protect the public from many potential hazards in restaurants, shops etc.” (Hill, 2005 p180)

Resource shortages are hard to link directly to regulation but studies describe regulators with limited resources deciding to focus on those considered higher risk (Gunningham, 1974; Hutter, 1988). Limited resources can also give less time for persuasive approaches (e.g. education, negotiation), but EHPs were also wary that short term educational failures could result in more costly long term legal action (Hutter, 1988). Therefore this thesis will explore the resourcing of local government EHPs, but this section now completes the governance model in Figure 2.2 by considering the relationships between regulators and the regulated.

2.5.5 The backgrounds and views of EHPs

This section moves towards the centre of Figure 2.2 to explore how the backgrounds of officials and their personal and professional views can influence regulation. The influence of gender is largely unexplored by the key studies, but studies describe a majority of male EHPs in local government in the UK (Hutter, 1988) and Johannesburg (Mathee et al. 1999). Crook and Ayee (2006) judged female EHPs in two Ghanaian cities to be better negotiators but this did not necessarily lead to closer relationships with the regulated because female EHPs considered themselves more authoritarian than their male colleagues.

Amongst the white male EHPs in Hutter’s (1988) study problems of language and culture were identified when regulating ethnic groups, but these groups were generally tolerated and EHPs

took steps to avoid accusations of prejudice. The South African context is very different, but McDonald (1997) described white male local government officials in Cape Town with little awareness of the environmental health problems in poorer areas amidst a culture of 'victim blaming'. Three years later Cape Town EHPs were more positive about their developmental role but remained uncertain about their role in poorer areas (Lewin et al. 1998).

Education and experience are also potentially important. Hawkins (1984) observed no practical differences between young and old UK officials in the field, but the younger and more educated viewed their work as an unproblematic 'scientific endeavour' and were more committed to more punitive approaches; in contrast their older, less educated, colleagues valued their experience and considered their work to be more about 'common sense' and 'managing personal relationships' and they sometimes thought their younger colleagues were officious. Similarly Crook and Ayee (2006) found younger Ghanaian EHPs were the least committed to more persuasive strategies, but in contrast to Hawkins' inspectors these young EHPs were generally the worst educated. Significant experiences like serious cases could result in what Hutter (1997) described as inspectors' 'hobby horses' where they focus on specific areas or refer to past cases to persuade the regulated to comply.

Officials own perceptions of their roles are particularly important and UK studies generally found that regulators considered their primary role to be securing legal compliance, not punishing offenders (Carson, 1970b; Hawkins, 1984; Hutter, 1988; Richardson et al. 1983). For them compliance was not an end in itself, more a means towards improving environmental health. Some regulators, including EHPs, even considered prosecution a failure because persuasion was their 'natural inclination' (Hutter, 1988; Richardson et al. 1983). EHPs typically distanced their approaches from the police and saw themselves as experts, not law enforcers, delivering services by advising and educating (Hutter, 1988) and such views date back to the Victorian era (Crook 2007; Hamlin, 2013; Wilson, 1881). Further, EHPs frequently associated their role with solving problems and many saw themselves as guardians of their local districts though, in contrast to central government regulators (Hawkins, 1984; Kelman, 1981), few exhibited a sense of mission or considered the wider impacts of their work beyond the costs to individual businesses (Hutter, 1988).

A common feature to all the key studies and others (Lipsky, 1980; Maynard-Moody and Musheno 2000) is the influence of moral judgments on the regulatory process. Hutter (1988) found that EHPs made constant moral judgments about the regulated, though they denied this, and were more willing to help the worthy/deserving (e.g. the hard working or honest) and take more punitive action against those considered morally culpable. Further, Hutter argues that such 'reasonable' decision making is the hallmark of regulation and gives EHPs a pragmatic response

to situations not necessarily perceived by society as wrong or criminal and where the cooperation of the regulated is needed. Similarly, Bardach and Kagan describe the ‘good inspector’ as someone who is “willing and able to use the coercive tools of the law when necessary, but willing and intellectually able to make sensible compromises that avoid regulatory unreasonableness and elicit cooperation” (2006 p xi).

The backgrounds of local government EHPs as professionals also have the potential to influence how they regulate environmental health. In his 1842 Report Chadwick raised concerns about the failure of local authorities to enact existing sanitary laws and partly blamed their incompetent, biased officials (Chadwick, 1842/1965). A more sympathetic historian describes the “poorly paid and lowly figure” of the early 19th century urban inspector of nuisance who rarely remained in post for long (Brimblecombe, 2003 p124). By the 1880s Wohl describes how some employers still thought ‘a man endowed with common sense’ had all the training necessary to be an EHP (1983), but this period also saw their gradual professionalization. Since 1876 professional organisations have become important for publicising environmental health and representing their members’ interests (Crook, 2007) and continue to fulfill this role today.

Evidence for the influence of professional expectations on regulation is mixed (Meidinger, 1987) but one UK professional organisation has long preferred persuasive approaches:

“Some [inspectors] went with the threat of legal proceedings in their mouth, and did not attempt to explain why certain work had to be done, and if they acted in this way they set up the backs of people, and did not get the work carried out to the satisfaction of the authority. It was far better that people should be taught by inspectors the reasons why different work had to be done, and to persuade them to carry out the principles necessary for the removal of nuisances and infectious disease. It was far better for them to do the work willingly, and look upon the sanitary inspector as their friend rather than as a prying, intolerant autocrat who would force down their throats the principles of sanitation whether they liked it or not” (Address of the President of the Sanitary Inspectors Association in 1890 in Crook, 2007 p387).

“[w]hilst legal proceedings are often necessary it must be remembered that much of the improvement to man’s environment and quality of life results from the patient, painstaking, persuasive efforts of Environmental Health Officers through measures of environmental health education” (Institute of Environmental Health Officers in Hutter, 1988 p56).

“...local regulators would prefer to prioritise this approach [education and advice] over enforcement” (CIEH, 2009).

Professional organisations also remain influential in setting and regulating the professional standards of EHPs. The first examinations for EHPs were in 1877 (Brimblecombe, 2003) and in the UK there has been a gradual transition from a diploma to a graduate profession since the 1970s which is happening in South Africa today. Environmental health law and its enforcement continues to be central to the education of EHPs (CIEH, 2007; Wilson, 1881) and this thesis will explore the education and training of EHPs in this area. Wider concerns about education and training include the challenges of balancing knowledge (e.g. breadth, depth) with practical experience (Brimblecombe, 2003; CIEH, 2007).

These concerns inform professional debates about whether EHPs should work in their traditional, generalist roles or more specialized roles. For example Hutter (1988) was concerned about the generalist education of EHPs, particularly how few opportunities for more specialist training left them ill equipped for the increasingly complex problems they faced (1988). Further, the need for increasing expertise had forced some departments to appoint increasingly specialist EHPs or other technical staff. This generalist/specialist debate continues (e.g. Burke et al 2002) but recent evidence from the UK suggests that cuts to local authority budgets are forcing specialist EHPs to work as generalists to maintain basic service levels (Tombs, 2016).

Professional power has also long been a concern of policy analysis (Parsons, 1995). Lipsky describes how professions can be reluctant to criticise fellow professionals, tend to seek out higher status clients and favour financially rewarding specialties to the neglect of low-income groups to whom they respond in controlling or manipulative ways (1980). Chambers likens this to a “professional prison” where status, power and promotion come less from direct contact with the complexities of people and more from the “reductionist, controlled, simplified and quantified construction which becomes reality for the isolated professional” (1997 p55). In South Africa for example Huchzermeyer (2001) has expressed concern that housing policy is dominated by a local technocratic elite that fits the delivery-driven political agenda but sidelines social movements and dominates the definition of illegality or informality.

Lastly, the views of EHPs about regulation are also important. Hutter (1988) found they were largely untrained in the law and did not recognise the uncertainties described in section 2.5.3 above nor consider their work in terms of the power structures of society. She attributes this to their education and a practical culture that does not encourage reflection on the ideology of regulation where arguably deliberate legal uncertainties were instead perceived as ‘quirks’ of the law and/or practical problems to be solved. Most EHPs thought at least some offences could

be considered crimes and their opinions about them concurred with the sociological explanations in section 2.5.3 above that associated criminality with more traditional criminal motivations.

Front line officials valued the threat of prosecution towards achieving compliance (see section 2.5.3 above) but Hutter (1988) found that even experienced EHPs rarely made court appearances. Many of these EHPs feared unsympathetic magistrates and were concerned they were too lenient or even biased because they were businessmen themselves. The impartiality of magistrates has been questioned since Victorian times (Bartrip and Fenn 1983; Paulus, 1974), but in the UK magistrates themselves have recognised their limited knowledge of environmental health crimes (Magistrates Association, 2009).

Most environmental health prosecutions in the UK result in convictions (Hutter, 1988) because only the most serious and watertight cases are submitted to the public scrutiny of the courts (Hawkins, 1984; Ogus and Abbot 2002). But officials have long been concerned that the low fines could provide an inadequate deterrent that undermines their authority (Bartrip and Fenn, 1983; Hutter, 1988) and similar concerns have been raised in South Africa (Lazarus et al. 1997; Petrie et al. 1992). In the UK others have criticized the criminal justice system for providing little incentive for compliance when fines are so low, offending so profitable (Hampton, 2005; Ogus and Abbott 2002) and the chances of detection so remote (Tombs and Whyte 2007).

Crook and Ayee (2006) found that Ghanaian EHPs could summon offenders to court within 48 hours where they were certain to receive fines of the equivalent of £12-20. This earned EHPs the nickname 'Samman-Samman' ('Summons-Summons') and an apathetic, sometimes hostile, public, but regulation could also lead to powerful local politicians requesting that offenders be excused. Therefore this thesis will therefore also explore the views and experiences of EHPs with the criminal justice system, but this section now returns to external factors to consider the influence of relations between EHPs and the regulated.

2.5.6 Relationships with the regulated

This section starts by reviewing how officials characterise the regulated before exploring other factors that can influence these relationships. The character of the regulated exerts an important influence on regulation and in section 2.4.2 above Kagan and Scholz (1984) argued that regulators should respond flexibly depending on whether businesses behaved as *amoral calculators*, *political citizens* or the *organizationally incompetent*. But they also warned that these categorisations lack predictive power, are not mutually exclusive and should be applied on a case by case basis. Ayres and Braithwaite (1992) further caution that regulatory actors are constantly changing 'multiple selves'. For example businesses "are bundles of contradictory

commitments to values of economic rationality, law abidingness, and business responsibility”, whilst regulators can be “nice guys or tough guys, self-interested or public-spirited, professional or unprofessional, diligent or lazy, intelligent or confused” (Ayres and Braithwaite 1992 p31).

Other important factors for officials include the moral, legal and economic mandate for compliance, the reasons for non-compliance (e.g. cost, negligence) (Hawkins and Hutter 1993) and the regulatory history of a business (Hawkins, 1984). In the UK local government EHPs considered most offenders to be *organisationally incompetent* with only a small minority considered *amoral calculators* (Hutter, 1988). Occupation is also a factor, with uncooperative and/or dishonest behaviours most often associated with scrap metal merchants, second hand car salesmen (Hutter, 1997), street vendors and a few landlords (Hutter, 1988). In contrast, those in more skilled or professional jobs were considered more likely to be compliant (Hutter, 1997).

These typologies are predicted to apply in Johannesburg, but studies of South African cities suggest that issues of ethnicity and culture are also important. In early 1994 some white local government officials in Cape Town commented that ‘those people’ (Black Africans and Coloureds) do not understand environmental issues because of their ‘culture’ (McDonald, 1997). A few years later another Cape Town official explained that local government had to “culture people that this is their area” because people were responsible for maintaining their own environments (Groeter in Allison, 2002 p1547). Similarly, Hunt and Lewin (2000) found Cape Town EHPs described communities as lazy and responsible for their poor environmental health, but these communities in turn considered government to be corrupt and inefficient!

In Johannesburg these characterizations are similar to Beall et al.’s (2000b) *villains* of the urban poor and typical of the *amoral calculator*. But in accordance with the ‘multiple selves’ argument, many could also be considered *victims* (Beall et al. 2000b), the *organisationally incompetent* products of South Africa’s complex history and persistent inequalities. Similarly, returning to Barnes (2007) analysis of the 2005 Delmas typhoid outbreak in section 2.5.2 above reveals its *victims*, still reliant on basic services (e.g. bucket latrines) a decade after democracy, and *villains* whose ‘poor hygiene’ was to blame and who protested when promised improvements never materialized.

Beall et al. (2000b) also identify the *fixers* participating in community based environmental management and paying for municipal services. Indeed, McGranahan (2007) argues that EHPs should not see their role as to regulate but to work with groups like this already improving urban environmental health and the South African Cities Network (SACN, 2006) uses a case from Johannesburg that suggests this is happening already. Here a CoJ EHP describes a *villainous* township goat trader keeping livestock ‘illegally’ and causing complaints etc. but who is also a

victim because of the traditions of keeping and slaughtering animals in cities. But by leasing land in an old industrial area nearby the township the trader has become a *fixer*.

The nature of the relationship between the regulator and regulated is also important. Black's relational distance hypothesis argues that the greater the distance between parties in dispute, the greater the likelihood that the law will be used to settle the dispute (Black in Hutter, 1989 pp169-70). This distance can be reduced by longer term relationships (Hawkins, 1984), more frequent inspections (Hutter and Hawkins 1993) and the regulatory context. For example Hutter found that urban EHPs adopted more formal approaches than rural EHPs because they worked in more anonymous settings and were not closely integrated into the community (Hutter, 1988). This bred a suspicion and distrust of the regulated, until proven otherwise, and the belief that more punitive approaches, instead of education, were the best response to offending and the literature on Johannesburg suggests a high relational distance for its EHPs.

The size of the business could be important, where regulators sometimes considered large businesses more compliant and socially responsible (Grabosky and Braithwaite 1986; Hawkins, 1984). The practicalities of inspecting large businesses and the need for information also potentially favour more persuasive approaches (Hutter, 1997; Shover et al. 1986), but others argue that larger companies also have greater capacity to challenge officials and shape regulation in their interests (Bernstein, 1955; Carson, 1979; Yeager, 1991). In contrast, smaller businesses are often unclear about the law and limit their activities to those indicated by the inspector (Fairman and Yapp 2005a; Genn, 1993). Such problems can be compounded by large numbers of SMEs lacking resources (Gunningham, 2002; Coleman, 1997), particularly in the informal sector (SBP, 2004). Hutter (1988) found that EHPs did not behave differently when regulating smaller or larger businesses, but others describe regulators expecting smaller businesses to be uncooperative and focused only on profit (Hawkins, 1984; Yeager, 1991).

The regulator's perceptions of the ability of a business to comply are also important, where good levels of compliance and staff awareness suggest a responsible company and vice-versa (Hutter, 1997). The costs of compliance are also important and based on the officer's subjective assessment of whether compliance would demand an unacceptable economic burden (Hawkins, 1984). Some EHPs thought public health was paramount and people should not run a business if they cannot afford to, but most wanted to encourage businesses and were more likely to be flexible towards small traders, new businesses or during periods of recession (Hutter, 1988). The nature of offending is also important, particularly the severity of the offence and its potential to harm people (Carson, 1970b; Hawkins, 1984; Hutter, 1988, 1997). Moral considerations were also critical (see section 2.5.4 above), with behaviours associated with criminality more likely to result in punitive approaches.

Bribery is another important influence on regulation. Diver (1980) reflects that offences could be under reported when the costs of paying an inspector to ignore an offence are less than achieving compliance or the inspector has been captured, but Reisman's typology helps explain why EHPs are particularly vulnerable:

- Transaction bribes - paid to get an official to use their discretion with greater speed;
- Variance bribes - paid to stop an official applying a rule on the bribe giver, they are generally more dangerous for the official and thus more expensive; and
- Outright purchase bribes - involve the capture of the official who appears to remain loyal to the regulator but favours the briber's interests (Reisman in Perry, 2000).

The hidden nature of bribery makes it hard to determine but reports of corrupt EHPs date back to Victorian times (Crook, 2007) and in 1988 nearly half New York City's food EHPs were arrested for accepting variance bribes (Leff, 1988). Further, Leff (one of the whistle blowing EHPs) commented that poor salaries made his colleagues more susceptible and warned that a "city that underpays its municipal employees is likely to be a corrupt city" (1988 p45). In Nigeria the corrupt EHP is immortalized in a Ken Saro-Wiwa (1995) short story whilst in neighbouring Ghana the public regularly offered bribes but EHPs did not have a reputation for accepting them (Crook and Ayee 2006). The authors thought the public nature of regulation and the willingness of the public to complain about EHPs, in contrast to the police, could explain this. In South Africa small businesses (SBP, 2004; CDE, 2007) described problems with corrupt local government officials that will be investigated by this thesis.

2.6 Existing gaps in the literature

Chapter 1 defined environmental health and described how environment-health relationships and their management have shaped and been shaped by societies over the centuries. Into the 21st century environmental health remains a complex, persistent and wicked problem, particularly for cities like Johannesburg. Local government EHPs are therefore potentially well placed given their responsibilities for bringing the South African *Constitution* to life by enforcing protective environmental health laws that could make cities more productive, inclusive, sustainable and better governed. But EHPs also find themselves based in organisations and using laws undergoing significant change, whilst the public remains suspicious and sometimes hostile towards them. It's in our best interests to learn more about this, hence the main research question: how do the EHPs of the CoJ regulate environmental health?

This chapter developed a model of governance to answer this question. It started by defining environmental health regulation as one form of social regulation of the market in the public interest, whilst acknowledging that the state - as environmental health regulator - can act as both a protector and repressor of environmental health. The literature then described how the work of EHPs is inherently that of a bureaucratic interventionist and surveillance state, but this thesis instead argues that viewing their work as governance better captures the complex structures, processes and relationships that together describe how they regulate environmental health. A model of governance was created in Figure 2.2 for this with responsive regulation at its core that combines both persuasive AND punitive strategies to regulation. This was embedded within a wider framework of governance to explore the complex and interacting factors known to influence environmental health regulation.

Key studies from the UK and other Northern countries suggest that the regulatory context, the law itself, local government, the views and background of EHPs and their relations with the regulated can all influence how EHPs regulate environmental health. Further, these factors often suggest a preference for persuasive regulatory approaches. This review was supported by the limited literature on EHPs from other African countries, including South Africa, but this thesis aims to fill this gap with an in-depth case study of the CoJ's EHPs. This thesis will therefore contribute to improving our understanding of the work of local government EHPs in urban South Africa and, more broadly, our understanding of environmental health regulation as governance.

2.7 Research aim and objectives

This thesis originated in the question: how do the EHPs of the City of Johannesburg Metropolitan Municipality regulate environmental health? The aim of this thesis was to describe and explain how these EHPs regulate environmental health via three objectives:

- to develop a model that illustrates how CoJ EHPs regulate environmental health
- to explore and analyse the factors that influence how CoJ EHPs regulate
- to make recommendations for policy

In the next chapter the methods developed to answer this question, the aim and objectives are explained in detail.

Chapter 3 Methods

3.1 Introduction

This chapter describes the research design developed to answer the main research question: how do CoJ EHPs regulate environmental health? The chapter begins by introducing the epistemology and strategic approach of this thesis before detailing the case study design, including the measures taken to maximise data quality. The methods of data analysis are then described and the chapter ends with reflections on the case study in practice. The author is grateful to the Development Partnerships in Higher Education (DePHE) programme of the UK government's Department for International Development who part funded the fieldwork as part of an urban EH project with the University of Johannesburg, the Medical Research Council of South Africa and London South Bank University.

3.2 Relativist epistemology and the case study strategy

Informed by the theoretical framework developed in Chapters 1 and 2 this thesis takes a relativist epistemological position. This recognises there are multiple, complex realities which can be experienced and reflects the aim of this research to describe these realities as experienced by CoJ EHPs. For example this thesis rejects simplistic descriptions of regulation as a process in which criminal offences are detected and then acted upon by EHPs; instead it argues that offences and compliance are constructed in the field by EHPs and are influenced by the constant interactions (as governance) between many factors including the regulatory context, the views of EHPs themselves, relations between EHPs and the regulated, organisational controls and legal uncertainties. This relativist position also recognises the subjectivity of the author who is not independent of the researched (see section 3.5.2 below). The term case study does not refer here to the study of a single object but is used to describe the strategic research approach of this thesis (Verschuren, 2003). As a research strategy Yin (2003) explains that the case study provides a holistic approach for investigating real life events to understand these complex social phenomena. The regulation of environmental health by CoJ EHPs is one such phenomenon and the case study strategy provides an approach for describing and managing its complexity.

3.3 The case study design

3.3.1 A multiple-case, holistic design

This case study is based on a multiple-case, holistic design (Yin, 2003) developed around the unit of analysis, the street-level CoJ EHP. A multiple case design was chosen because each EHP produces independent data and conclusions, therefore direct replication by the investigation of ten case-EHPs will produce more powerful conclusions than a single case. The literature review in section 2.5 above describes how the decisions of EHPs can vary for predictable reasons, with

theoretical replication across ten cases providing greater external generalizability than for a single case (Yin, 2003). A holistic design was chosen because the case study focused on street-level EHPs only and not their managers, the regulated or other actors that would be characteristic of an embedded design. Further, the socio-legal framework that informed this design is itself holistic because it considers theoretical perspectives from disciplines including history, the law, political science and sociology and how these shape the governance model developed in Chapter 2 above.

3.3.2 Pilot studies in London and Ekurhuleni

The design of this case study was informed by two pilot studies in one London local authority over November and December 2005 and in Ekurhuleni Metropolitan Municipality (which borders the CoJ) in June and July 2006. Each pilot study was structured around the methods used in Maynard-Moody and Musheno's (2000, 2003) studies of street-level policy implementation. For example each began with negotiating access to potential pilot EHPs via senior managers that the author knew were interested in research and therefore might be willing to participate. Briefings were then held with senior managers to introduce the pilot study and request permission, the written summaries of which became Appendix A in the main study. Permission was granted immediately in both pilot studies, though the author was wary that this might not happen in the main study as he did not know the CoJ senior managers very well.

Next, following Maynard-Moody and Musheno's (2000, 2003) methods, meetings were arranged with street-level EHPs in their local offices who were then briefed on the pilot study using a summary that became Appendix B in the main study. This stage included the need to define the sample population, section 3.3.3 below explaining why street-level EHPs were selected as the unit of analysis. During these pilot briefings the author requested the participation of only two or three volunteers, but in both London and Ekurhuleni there were only two volunteers anyway out of 11 and 12 potential EHPs respectively. The author did not know why so few EHPs were interested, but during observation the four volunteers said they had noticed this too and suggested to the author that their colleagues may be too busy to participate. When this happened during the main study (see section 3.3.3 below) it was therefore not unexpected. The four pilot EHPs were based in regional offices and were then approached individually to complete individual consent forms that became Appendix C in the main study.

Before data collection started, after Yin (2003) a case study protocol was developed to guide the data collection process alongside a database to archive data in physical and electronic formats. Following Maynard-Moody and Musheno's (2000, 2003) methods, the author began pilot data collection by arranging one day of observation with each pilot EHP. In London observation included the inspection of houses in multiple occupation and the investigation of related

complaints (e.g. mould, noise); in Ekurhuleni observations included the inspection of food premises and crèches, particularly those in the informal sector. Starting with observation enabled the author to get to know each pilot EHP and the routine aspects of their work, whilst giving insights into their areas and daily challenges. For example regulating the informal sector became a significant factor in the main study (see section 7.7 below). Further, the pilots provided vital experience of observation techniques as described in section 3.3.5.1 below. These included the importance of avoiding involvement, where possible, in regulatory encounters and trying to remain impartial, themes that recurred during the main study (see section 3.5.2 below).

The author then conducted semi-structured interviews with the four pilot EHPs in their regional offices. These were structured to explore the model of governance in Figure 2.2 and emerging themes from the literature review and followed a protocol that became Appendix F with very few further changes, apart from a greater emphasis on the socio-legal aspects of regulation as explained in section 2.4.1 above. These pilot interviews gave the author important interviewing experience, particularly around timing, and basic challenges like finding quiet areas in busy regional offices and interviewing EHPs with limited time amidst constant interruptions. These experiences informed the main study as described in section 3.3.5.2 below.

The story method described in section 3.3.5.3 below was developed during the two pilot studies, based on Maynard-Moody and Musheno's (2003) methods. The four pilot EHPs each contributed two stories that provided important data on the regulatory process, particularly the influence of morality on decision making that became a separate theme in the main study (see section 7.6 below). The Ekurhuleni stories mainly focused on the challenges of regulating the informal sector and informed section 7.7 below. However, the pilot study also revealed that whilst EHPs had many stories about their work, recording them required time and encouragement. At the end of the Ekurhuleni pilot this led the author to revisit his case study protocol and timetable to make contingency plans for the main CoJ case study that were later realized when stories were dropped from the main study because data collection was running behind schedule (see section 3.3.5.3).

The last pilot data collection method involved the completion of multiple choice questionnaires that were largely unchanged from Part II of Appendix I. These questions were adapted from Maynard-Moody and Musheno's (2003) own questionnaire to explore factors in the decision making process, particularly EHPs' own views of their work, legal and organizational factors and their relations with the regulated. The answers provided useful general insights into these factors for comparison with interview and observation data, particularly surrounding the routine elements of work and views on pay and managers for example. Due to inexperience the author was reluctant to tailor more of the questionnaire to better reflect the work of EHPs and therefore

the generic nature of some questions (e.g. ‘rules and procedures’ in questions 7 to 11) somewhat limited their value. Completion of the questionnaires also involved timetabling further meetings with the four pilot EHPs. By this stage the author was becoming increasingly wary of how long pilot data collection alone was taking. Indeed, with hindsight, in section 9.7 the author argues that if repeating the main study he would extend the observation period and interviews (incorporating vignettes) and not attempt the story method or questionnaires. Though both worked, there wasn’t the time available given the busy schedules of EHPs.

Documents relevant to the study were also collected during the pilots in London and Ekurhuleni, particularly legislation, organizational policies and procedures and examples of the regulatory paperwork produced by EHPs during their work. For Ekurhuleni particularly this provided a guide to what documents might be available during the main study and potential themes to look out for. Important examples from Ekurhuleni including their continued reliance on apartheid era legislation, as their new Public Health By-laws were still being drafted, and the absence of legislation and wider guidance for regulating the informal sector. Both these themes were important in the main study, see sections 5.2 and 7.7 respectively.

The two pilot studies also developed the analytical framework for the thesis and provided experience of writing up the case studies. No quantitative data were collected during the pilots, but in accordance with Miles and Huberman (1994) the qualitative data for each pilot EHP were subject to thematic analysis (see section 3.4 below) and individual reports written. Following Yin’s (2003) case study approach, these reports were reviewed by the four pilot EHPs with any comments and corrections made. Very few were received other than clarifications of the text, but the author knows that one London pilot EHP continues to refer to his report to this day, particularly when asked to describe his work by managers and other researchers. Each pilot EHP report was then compared to their colleague’s and the Figure 2.2 model of governance developed in Chapter 2 before final reports were drafted for the two pilots.

These final pilot stages also warned the author of the time needed for analysis and writing up whereby the author knew that time for analysis during main study data collection in South Africa would be very limited. Wider learning from the pilot included the development of a coding framework that became the start codes for the main study based around the themes/sub-themes of the Figure 2.2 model of governance which was later expanded by the main study. The overlaps between many themes/sub-themes also informed the development of Figure 2.2’s overlapping structure, whereby one regulatory decision could be informed by many different factors. The author also experimented with the use of *QSR’s NVIVO* coding software during this period, but later chose to stick with manual coding using *MS Word* and *Excel* documents.

Overall, though the results of the pilot studies were not used in the main case study, the lessons learned during the two pilot studies informed every stage of the main case study design and the development of the final model of governance in Figure 4.1 below. The pilot process also informed the decision to expand the theoretical framework of the thesis as explained in section 2.4.1 above, though the methods used were very similar to the pilots apart for a greater emphasis on the legal aspects of regulation during data collection. This chapter now returns to the main case study design to describe how potential case EHPs were defined and accessed.

3.3.3 Accessing and identifying potential EHP cases

The street-level CoJ EHP was selected as the unit of analysis for four reasons. The author's initial interest was prompted by his own background as an EHP and is explored further in section 3.5.2 below. Chapters 1 and 2 above reviewed the many complex environmental health problems in South African cities and how local government EHPs are potentially well positioned in response, but little is known about how they regulate environmental health. By selecting the EHPs of one city the research scope was narrowed to provide a manageable unit of analysis within the budget available. Lastly, managers were excluded from the unit of analysis because they are not responsible for specific areas, though the flexible case study design enabled some to be interviewed to further explore emerging themes.

The first step involved gaining access to the Environmental Health Sub-directorate and the regional offices where EHPs are based. This started during pilot study work in June 2006 when the author met with a CoJ Regional EH Manager and the Deputy Director of EH (DD-EH). Following this the author sent Dr Refik Bismilla, Executive Director of the CoJ Department of Health, a research proposal summary and request for permission to conduct research which was approved on 01 November 2006 along with a request that the DD-EH co-ordinate the research.

In January 2007 the author met again with the Regional EH Manager, now promoted to Assistant Director – Resources (AD-Res), to ask his advice on the next steps towards accessing CoJ EHPs. This led to a successful request to the DD-EH to attend the next Regional EH Manager's meeting on 23 February 2007. During this meeting the author presented a briefing (see Appendix A) to the nine Managers present who all agreed in principle to participate in the research. The author then contacted seven of the nine Regional EH Managers to arrange meetings at their offices. Of the other two Managers, one was on holiday at the time and the other did not return the author's calls or emails. Four of the seven Managers confirmed appointments to meet with the author, but the author was unable to make further contact with the other three. The author decided not to pursue them further because at least one of these managers was known to be busy moving regional offices and therefore probably unlikely to

want any additional pressures. The four interested Managers also provided potential access to more than 50 EHPs and their offices were accessible to the author.

The meetings with the four Regional EH Managers reviewed their briefing once again before the author asked whether the Manager would allow their EHPs to participate in the research. Three meetings were also attended by one or more Operations Managers and though all present were willing to participate they also expressed some concerns. All were concerned about how much time the methods would take their EHPs and mentioned the pressures of performance targets they were under. The author explained that the methods would be structured around the EHPs' diaries and he gave time estimates based on the two pilot studies. Two managers were also concerned that their regions were not representative of Johannesburg, particularly the inner city region. The author reiterated the rationale for the multiple case design, particularly how it does not seek to be representative of all CoJ EHPs but is grounded in theories of how EHPs regulate and seeks to replicate these across the case-EHPs selected. Two managers also did not want their EHPs to see this study as a 'moaning session' which the author noted. At the end of these meetings all managers granted permission for the research and arrangements were made to visit their EHPs.

One week later the author gave briefings (Appendix B) to the street-level EHPs in three regional offices and answered their questions about the study which, like their managers, mostly related to the time the methods would take. Operations Managers in Regions B and D1 also attended these briefings but their presence did not seem to influence proceedings and one later expressed regret that she did not fit the case criteria. After Maynard-Moody and Musheno (2003), at the end of each meeting the EHPs were asked to consider whether they wanted to participate in this research as a regional office to ensure they accepted the author's presence even if they did not want to participate as cases. All gave this permission and when fieldwork started the author also obtained verbal consent from managers and others (e.g. licensing officers, pest controllers and administrators) that worked there. All were very welcoming and interested in his research and wider views of Johannesburg and South Africa.

The author returned to the three regional offices the following week to request the participation of EHPs. In Regions B and F2 the author visited every potential case-EHP and asked if they would be willing to participate as individuals. Willing EHPs were asked to read and sign the consent form (Appendix C) which also reminded them of the voluntary and confidential nature of the research and their right to withdraw at any time without reason. In Region D1 only two of the 10 potential case-EHPs were willing to participate and both presented themselves to the author on his next visit. In Region F2 only four out of 12 potential EHPs were willing to participate, but in Region B eight of the 14 potential EHPs gave their consent.

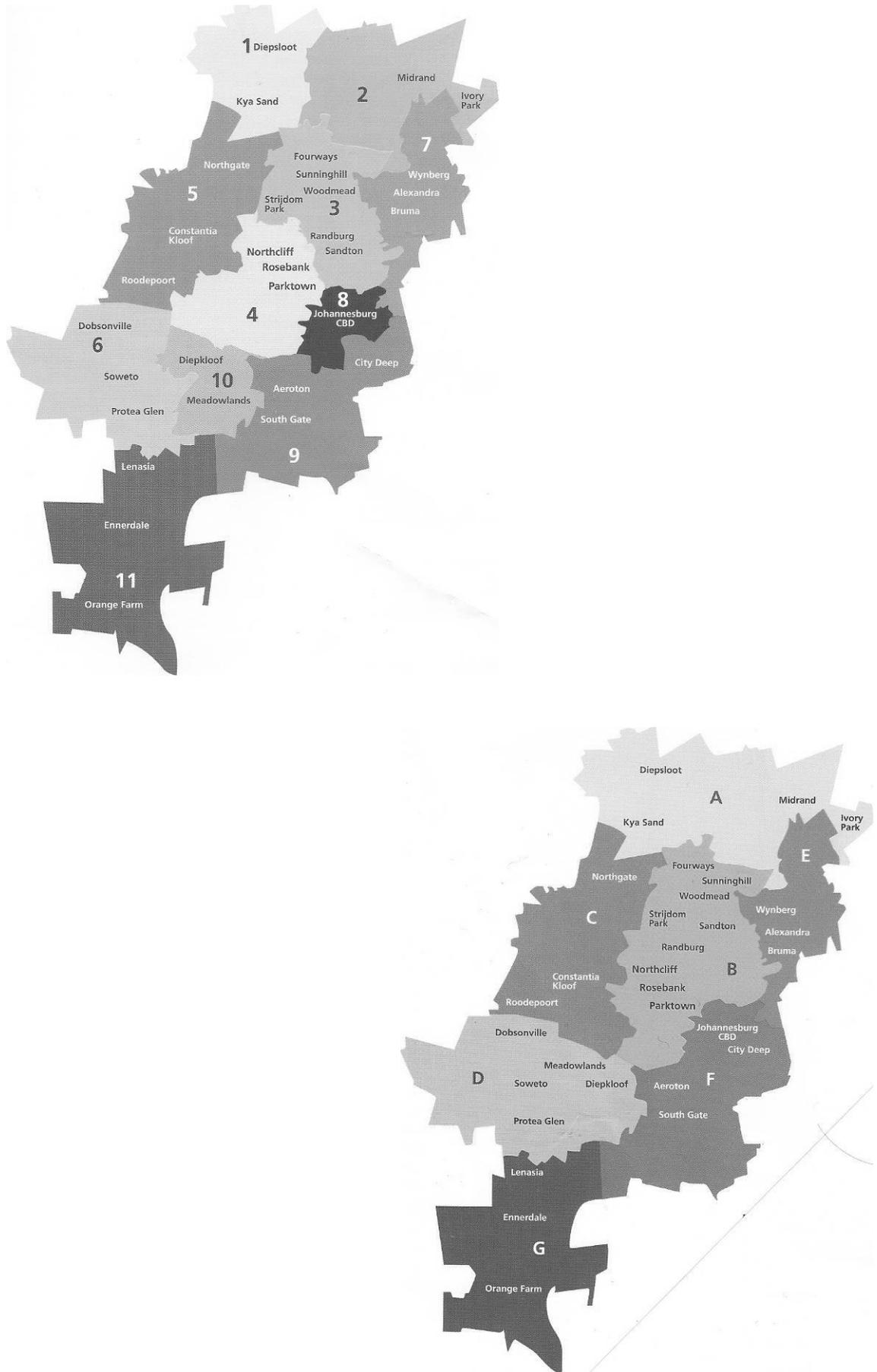
The author was initially concerned that relatively few EHPs agreed to participate, though this was not entirely unexpected. At the planning stage the AD-Res consulted recommended that there shouldn't be too much emphasis on asking EHPs to participate because the Executive Director had given his permission. EHPs were not asked why they did not want to participate, but some willingly provided explanations. For example one was about to go on maternity leave, two were about to go on holidays but most - including some new starters at the CoJ - explained that they were too busy to participate. One Region F2 Operations Manager was surprised that any of his EHPs had volunteered given their heavy workloads!

In inner city Region F1 this briefing and consent process was very different. The Regional EH Manager there explained in his first meeting that some of his areas were dangerous and therefore he wanted the author to accompany only experienced EHPs whose work he knew and trusted. The author did not argue because these EHPs fit the case definition and factors including experience and manager relationships were being investigated. The author also trusted the Manager's judgement and knew that rejecting it would have stopped research there immediately. The Manager pre-selected six EHPs and during their first meeting with the author in the Manager's office all six were willing to participate in the research and wanted to confirm observation dates immediately. The Manager was working nearby within earshot of the meeting and therefore the author postponed requesting written consent until he could approach the EHPs individually. When the author did so four were still willing to participate and signed the consent form but one did not wish to participate and the other was off sick.

3.3.4 Selecting individual EHP cases from the four regional offices

Until the end of 2006 CoJ EHPs worked from 11 regional offices across Johannesburg but in early 2007 fieldwork coincided with the re-organisation of the CoJ into seven regions (A to G) as summarised in Fig. 3.1 below. Four out of nine regional offices were initially selected due to the willingness of their Regional EH Managers to participate in this study and their accessibility to the author, but the author also checked with the AD-Res that these four offices covered the breadth of environmental health in Johannesburg. He confirmed that the four offices covered were very different areas in developmental terms but together covered most of Johannesburg's diverse environmental health. For example Region B (formerly Regions 3 & 4) included highly developed residential areas and retail centres in the Northern Suburbs alongside some townships and informal settlements. Region D1 (formerly 6) covered the western part of Soweto and was dominated by residential townships, with some informal settlements and new retail centers. Region F1 (formerly 8) covered the inner city and its many businesses and residential areas, whilst Region F2 (formerly 9) was mostly residential suburbs alongside Johannesburg's largest manufacturing area.

Figure 3.1 CoJ regions before and after re-organisation (CoJ DoH 2006b pp75-6)



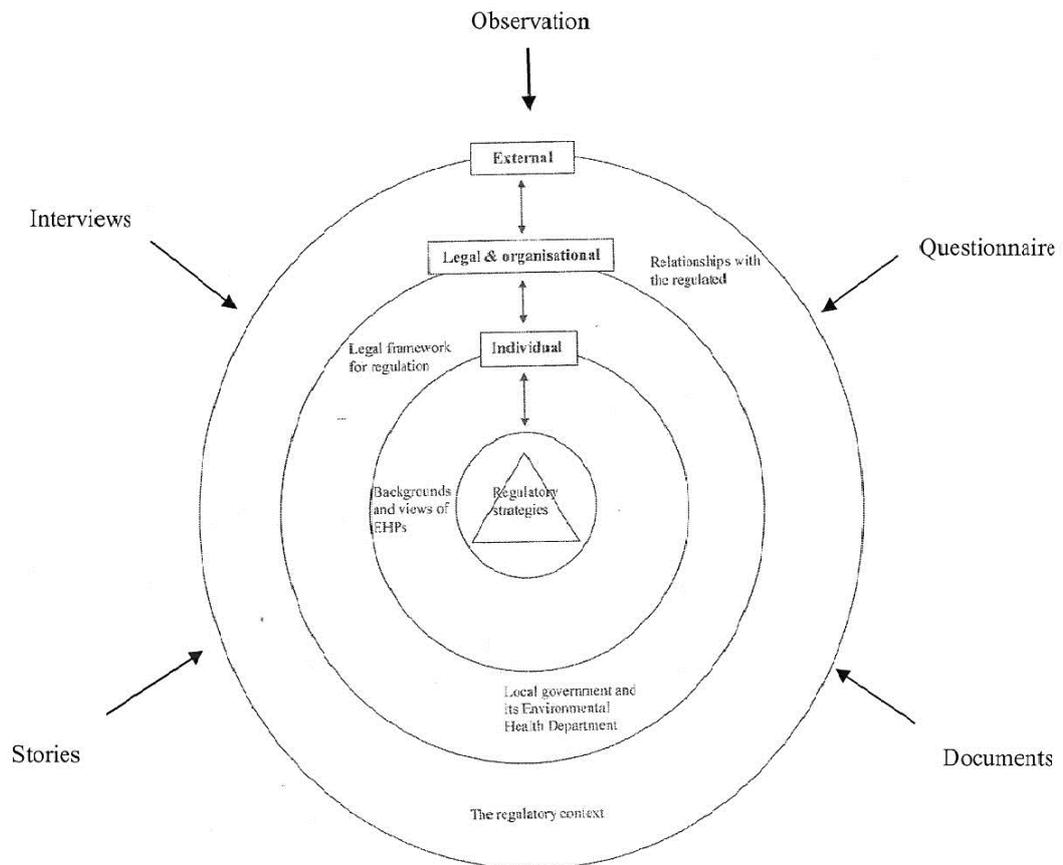
In accordance with the multiple case study design the EHP cases were selected for their replication potential. In Region B and F2 offices five EHP cases were selected from a possible 12 following observations of their work and comparing these to the theoretical framework and considering its potential for replication. For example those selected included a new starter to the CoJ (B1), the CoJ's most experienced EHP (B4) and a White female EHP (F2B). In Region D1 the only two EHPs that volunteered were selected to enable replication in this township region. In inner city Region F1 office the author withdrew from observation (see section 3.5.3) but four front line EHPs pre-selected by their manager initially agreed to participate in the other methods, though one (F1A) later withdrew.

After Yin (2003), two forms of replication logic were applied to the multiple case study design. For literal replication similar results were predicted because all cases were CoJ EHPs, regulating using the same laws and subject to similar organisational controls. The multiple case design thus enabled comparison between two or more case-EHPs in each region and between the four regional offices. The design was also based on theoretical replication by applying the model of governance developed in Chapter 2, the author predicting some differences between how EHPs regulate particularly due to factors like their relations with the regulated.

3.3.5 Methods of data collection

All data collection was conducted by the author himself to maintain quality and stay on budget. The methods used were informed by the key studies in Table 2.1 and others reviewed in Chapter 2 and were largely qualitative in nature, apart from limited quantitative performance management data. The criteria of validity and reliability also informed this selection as explained below. Five methods were developed to answer the main research question and meet the aim and objectives of the research (see section 2.7). As summarised in Figure 3.2 below, each method collected data from across the governance model of regulation created by this thesis in Figure 2.2 above. For example data were collected that describe the regulatory strategies of CoJ EHPs (the centre of Fig.3.2 below - see results Chapter 4) and explore the factors influencing this process relating to the regulatory context (see results section 4.6), legal and organizational factors (see results Chapter 5), the backgrounds and views of EHPs (see results Chapter 6) and their relations with the regulated (see results Chapter 7). After Yin (2003), these methods provided multiple 'measures' of the same phenomenon (EH regulation as governance) that also further enhanced the validity of this case study as explained below.

Figure 3.2 Data collection activities and their convergence on the model of governance



External validity establishes the domain to which a study's findings can be generalized (Yin, 2003) and case study findings have been criticised for their poor generalizability beyond the original case, often because statistical generalizability is considered the only valid basis on which inferences can be drawn (Mitchell in Verschuren, 2003). Case studies rely instead on analytical generalization where results are applied to existing theory and tested by replication (Yin, 2003). For example this thesis aims to describe how CoJ EHPs regulate using the model of governance theoretical framework and to explore its replication by 10 case-EHPs to contribute to our knowledge of urban environmental health regulation in South Africa.

Construct validity establishes the correct operational measures for the concepts being studied and is another criticism of case studies, particularly their use of subjective judgments during data collection (Yin, 2003). The construct validity of this thesis has been increased using multiple sources of evidence, as summarised in Table 3.1 below, that allow for the development of converging lines of enquiry by triangulation (Yin, 2003). A chain of evidence was also maintained during fieldwork which included maintaining a case study database and protocol (see below). The review of draft case study reports provides another means of maintaining the construct validity of a case study (Yin, 2003). The departure of the author from South Africa

shortly after fieldwork meant the ten case-EHPs were unable to review their draft case study reports but on-going correspondence with two of them provided further advice and comments.

Table 3.1 Multiple sources of data and evidence used

Data source	Evidence source			
	Field observation days	Semi-structured interview	Questionnaire	Narrative analysis
Case-EHPs				
B1	1	1	1	0
B2	1	1	1	1
B4	1	1	1	0
D1A	1	1	1	0
D1B	1	1	1	0
F1B	0	1	1	0
F1C	0	1	1	0
F1D	2	1	1	0
F2A	1	1	1	0
F2B	1	1	1	0
Non-case-EHPs				
Region B	3	1	0	0
Region D	1	0	0	0
Region F1	0	1	0	0
Key informants				
Region B EH Manager	N/A	1	0	0
Region F2 EH Manager	N/A	1	0	0
AD-Res	N/A	1	0	0

The reliability of the case study is also integral to its quality and seeks to minimise bias and errors by demonstrating that the case study strategy could be repeated with the same results (Yin, 2003). A case study protocol was developed from the theoretical framework and the two pilot studies to guide the author during fieldwork. The multiple case study design meant that the author was always at different stages of data collection across the ten case-EHPs and the protocol provided a constant reminder of the aim, objectives, questions and fieldwork procedures that enabled the author to remain flexible but consistent. A case study database was also created to organise and document the data collected and comprised a case study diary and the on-going maintenance of electronic archives and folders for all fieldwork data (see Appendix J summary), but this chapter now reviews the data collection methods in more detail.

3.3.5.1 Observation

Data collection started in the offices of Regions B, D1 and F2 with the direct observation of EHPs and their office colleagues. In Region F1 the author did not observe inner city EHPs in

their areas for safety reasons (see Section 3.5.3 below) but F1D was observed running two EH training courses. Observation was chosen to investigate the routine elements of work and the contexts that the observed might not otherwise comment on (Green and Thorogood, 2004) and to enrich descriptions of the beliefs and values of the observed and their relationships with others (Maynard-Moody and Musheno 2003). Starting with observation also enabled the author to get to know the EHPs and Hutter's (1988) comment that observing their work might make them more likely to give honest answers was confirmed by comments throughout fieldwork along the lines of 'you know how it is out there'.

Before each observation the EHP was reminded that they should work as normal, but in Regions B and D1 EHPs admitted on a few occasions they diverted briefly from their planned work to visit premises or areas (e.g. a mortuary, illegal dumping hotspots) they thought the author might be interested in. Following similar experiences, Hutter (1988) commented that such arrangements were made to be helpful and avoid 'mundane' activities and the author's experiences concurred with this. Things seemed to return to normal after these diversions, though the ability to make them also suggested the considerable field discretion of EHPs.

During observations no notes were taken, but immediately after leaving the field the author spent the evening writing up his observations directly onto computer in a roughly chronological order. Each observation report ended with reflections and reminders identifying new lines of enquiry. The author sometimes recalled data missed from his original notes that were then added but labeled as potentially less reliable. Throughout the fieldwork period the author reviewed the observation data to identify potential patterns or new lines of enquiry. Appendix D is an extract of the original and un-coded data from the observation of case-EHP F2A. During the first visit on the first observation day the author realised that he did not have his own CoJ identification and therefore he drafted an identify letter (Appendix E) that was signed by the DD-EH. The author only showed this letter on the few occasions when asked and when EHPs showed their identification, on most occasions they were known to those being visited. The author also provided a photocopy of his passport and emergency contact details to the reception administrators and Regional EH Managers of each regional office and each day the author made sure the office administrators knew which EHP he was accompanying.

Table 3.2 below summarises the categories of premises, activities and complaints observed during fieldwork between 27 March and the 14 June 2007. In summary all the main categories of municipal health services (MHS) were observed at least once during fieldwork apart from the surveillance and prevention of communicable diseases and illustrated the great breadth of EHPs' work.

Table 3.2 Fieldwork observations by MHS area, category and region

Main MHS area	Categories of premises, activity or complaint	Number of inspections, visits or related complaints by office				
		B	D1	F1	F2	Total
Food control	Food premises (retail)	1	3	0	10 + 40	14 + 40
	Food factories	0	0	0	0	0
	Informal food traders	0	0	0	1	1
Health surveillance of premises	Places of care (e.g. crèches)	3	11	0	0	14
	Accommodation establishments (non-food)	0	0	0	1	1
	Business premises (formal, non-food)	0	1	0	0	1
	Personal services (e.g. hair dressers, clinics)	0	0	0	0	0
	Formal dwellings (e.g. bad buildings)	0	0	0	0	0
	Informal dwellings (e.g. informal settlements)	2	0	0	0	2
	Community facilities and recreation premises	0	1	0	0	1
Animal related premises (e.g. kennels, stables)	0	0	0	0	0	
Waste management	Solid waste (e.g. illegal dumping)	1	0	0	1	2
	Open areas (e.g. public areas, vacant stands)	1	0	0	2	3
Water quality	Water quality monitoring	0	1	0	0	1
	Waste water/sewerage	1	0	0	0	1
Surveillance and prevention of communicable diseases	Investigations of communicable diseases	0	0	0	0	0
	Bacteriological samples	0	0	0	0	0
Vector control	e.g. infestation investigations and controls	0	0	0	0	0
Environmental pollution control	Noise related complaints	3	0	0	0	3
	Air quality related complaints	2	0	0	0	2
Disposal of the dead	Funeral undertakers	0	1	0	0	1
	Crematoria, cemeteries	0	0	0	0	0
Chemical safety	Lead safety training course	0	0	1	0	1
Wider EH project & promotion activities	Food safety training course	0	0	1	0	1
	General EH awareness raising activities	1	0	1	0	2
Total		15	18	3	55	91

Beyond more traditional regulatory activities, wider EH project and promotional activities were also observed in two regions, but Table 3.2 above also captures the limitations of the observational data. During fieldwork some services were not seen at all in a regional office or very small numbers were observed in one or two offices only. Omissions include food factories, vector control, after-hours noise inspections and diesel vehicle emissions testing. Direct comparison of the observation data for inspections of food premises and places of care is also limited by small numbers, the separate figure of 40 arising from observing two EHPs inspecting all 40 food premises at a Region F2 food festival. These limitations reinforced the importance of the other methods to which this section now turns.

3.3.5.2 Semi-structured interviews

Interviews are one of the most important sources of case study information (Yin, 2003). As summarised in Table 3.1 above semi-structured interviews were undertaken with all ten case-EHPs and followed the semi-structured interview protocol (Appendix F) developed from the theoretical framework and emerging observation themes. As well as exploring the model of governance and emerging factors, interviews also enabled the EHPs' responses to determine the information produced about these factors and their relative importance (Green and Thorogood 2004). The author limited most interviews to one hour in recognition of the busy schedules of the case-EHPs and some commented afterwards that the interviews would be included in that day's performance monitoring report. Interviews with two Region F2 case-EHPs had to be cancelled and rescheduled three times and were finally only 40 minutes long because of events. Two semi-structured interviews were also conducted with non-case-EHPs in Regions F1 and B. The former EHP (coded F1A) withdrew from the study just after this interview to start a new job, the latter was an Operations Manager (coded B3) who volunteered her experience of how EH cases are treated in the courts once it became clearer that case-EHPs had so little courts experience.

In Table 3.1 above semi-structured interviews were also conducted with four key informants. Of these, two Regional EH Managers (B and F2) and the AD-Res were interviewed at the end of the fieldwork using a managers' semi-structured interview protocol (Appendix G). The author planned to interview the other two managers but both were summoned to meetings during the author's arrival and there was no time left to reschedule them. Meetings were also held with senior managers to provide contextual data about the CoJ and recorded by hand. All semi-structured interviews were recorded using an Olympus VN-960 PC digital voice recorder which is small, portable and does not require an external microphone. The recorder also produced high quality recordings, even in offices with noisy air conditioning units though the recorder was always positioned to try to minimise background noise. The digital format also allowed for easy computer backup and storage of files. Before starting each interview the author asked again if

the interviewee was happy to be recorded and then demonstrated how the digital voice recorder worked before starting which helped to put people more at ease.

3.3.5.3 Stories

Stories are a powerful research instrument for describing how people behave and comprehend their work lives (Maynard-Moody and Musheno 2003) and the narrative analysis method provided good descriptive data in the two pilot studies. After completing their semi-structured interviews, case-EHPs B1 and B2 only were given a small notebook containing a story briefing (Appendix H) and blank pages in which to make brief notes. After Maynard-Moody and Musheno (2003) they were asked to write down outlines of two or three stories over the following week describing situations where their beliefs about 'fairness' helped them make decisions. One week later B2 reported that he had two stories and these were recorded, with B2 reminded beforehand that recording was voluntary and confidential. The author asked questions at the end of each story to avoid interruptions and all recorded data were then transcribed by the author and checked by B2 who made no further changes. By the sixth week of fieldwork the author knew he was behind schedule and therefore he decided to stop the narrative analysis method after only two stories had been collected from B2 (see Table 3.1 above) and to focus on the other methods. B1 did not volunteer any stories and the decision to stop was explained to all other case-EHPs at the end of their interviews.

3.3.5.4 Questionnaires

A two part questionnaire was developed and is presented in Appendix I. The first part used four vignettes based on events the author encountered during the pilot studies and main fieldwork and designed to further investigate emerging themes. The vignettes were particularly important for the Region F1 EHPs whom the author had not observed beyond their offices and training rooms. Each vignette was read out to the EHP and their responses recorded by the author on paper and checked for accuracy by the EHP at the end. In the second part multiple choice questions informed by the theoretical framework sought to compare how the views of case-EHPs align with those of their colleagues and the other data collected.

All data collection methods (apart from observation) were completed in privacy. All case-EHPs had access to private rooms or areas but EHPs were also offered the use of the offices of the Medical Research Council of South Africa where the author was based and F1C and the AD-Res accepted this offer for their interviews. Most interviews and questionnaires were interrupted by mobile phone calls or colleagues/managers, but these interruptions were brief and did not disrupt the methods.

3.3.5.5 Collection of documents

The review of documents encountered during fieldwork also provided important contextual data and assisted in validating and augmenting other data. Documents are advantageous because they are not created from the case study, they can be reviewed repeatedly and cover long term events (Yin, 2003). However they can also be deliberately biased and inaccurate or the author can introduce their own bias through incomplete selection or problems of access (Yin, 2003). The collection of documents was guided by the theoretical framework and governance model of regulation (Figure 2.2) developed in Chapter 2 and included legislation, organisational policies and procedures, the paperwork produced by EHPs (e.g. letters, fines, educational materials) and media articles. Limited quantitative performance management data for the preceding year of fieldwork (2005-6) was also collected and analysed (see section 3.4 below), particularly to explore whether trends in regulation identified using the main methods were reflected in the quantitative activity of CoJ EHPs. Unfortunately requests to the CoJ for more complete and detailed data for subsequent years were unsuccessful. At the end of the fieldwork period the case-EHP cases and their Managers were all provided with feedback on the initial findings and the next steps in the research process.

3.4 Data analysis

The quantitative performance data collected relating to the work activities of EHPs required no further analysis but there were many gaps in these data and they were treated with caution. For example only 2005-6 data were available and therefore the author was unable to explore trends in the nine years after fieldwork. This data was also incomplete, for example activity data by region, sector and premises was often missing and sometimes the data focused only on core regulatory activities with other activities (e.g. EH project & promotion work) missing altogether. However enough data was available to give a basic account of the activities of EHPs that informed the qualitative data at the centre of the case study design.

After experiments with QSR NVIVO during the pilot study phase the author decided to analyse all qualitative data manually and the case study protocol and database helped organise and manage these data. All digitally recorded interview data and the two stories from B2 were transcribed by the author into *MS Word* using *Olympus Digital Wave Player* software. Given the case study focus on factors influencing how EHPs regulate, largely denaturalized transcripts were produced but some naturalistic elements were retained including some basic South African terms (e.g. 'location' for township, 'ja' for yes, 'ag' for 'oh') and the use of block capitals to recreate when the interviewee puts deliberate emphasis on words.

After Miles and Huberman (1994) a start list of codes was produced prior to analysis based on the themes from the theoretical framework and developed during the two pilot phases. These

codes were applied to the multiple sources of evidence for each case-EHP and other data sources using *MS Word*. Each case resulted in further revision and development of the codes until a final list was applied to all the data collected. Themes identified for each case-EHP were then reduced and displayed in matrix form in *MS Excel*, partly to improve their accessibility for later analytical comparison (Miles and Huberman 1994). A report was then drafted for each case-EHP using the multiple sources of evidence⁵ and data and then compared across the ten case-EHPs and other data based on theoretical replication (Yin, 2003). These reports were then subject to further discussion based on the theoretical framework and model of governance developed before conclusions and recommendations were made.

3.5 Reflections on the case study design in practice

This section reflects on how the case study design worked in practice, beginning with the importance of its flexibility, research ethics and the influence of the author before exploring how personal safety issues shaped the case study design.

3.5.1 Flexibility of the case study design

Flexibility was central to the case study design. Time was inevitably lost when meetings were cancelled and rescheduled, particularly towards the end of each month when EHPs were busy compiling their monthly performance reports. The end of fieldwork also coincided with the end of the South African financial year (30 June) when all EHPs were busy compiling annual reports or using up any remaining leave. The flexible design and case study protocol enabled the author to accommodate changing schedules and events with minimal disruption. For example the sudden withdrawal of case-EHP F1A caused no problems because his data were used to validate and develop the data from other case-EHPs. Being able to drop the narrative analysis method without adverse consequences for the research design also enabled fieldwork to remain on schedule and on budget.

⁵ These sources of evidence included the two part questionnaire in Appendix I. Responses to the vignettes in Part I and the multiple choice questions in Part II were coded, then analysed and written up for each case EHP following comparison with the data from the other methods (particularly observation and interview) and the theoretical framework. These results were then compared across the ten case-EHPs and with the other data collected (e.g. policy documents, interviews with managers), the theoretical framework and emerging model of governance. The questionnaire results were written up across the result chapters according to their relevant themes. For example Part I data from two vignettes exploring EHP-EHP and EHP-manager relations are reported and discussed alongside other data in section 5.3.3 (inc. Table 5.4), whilst moral tensions in regulation are explored with other data in section 7.6. Similarly, Part II data exploring job satisfaction and views about pay are discussed, with other data, in section 6.3.

3.5.2 Research ethics and the influence of the author

Ethics continually shaped the case study design. This section begins by summarizing the basic ethical controls developed before exploring the ethical issues that arose during fieldwork and how these were managed. Ethical approval for the case study design was granted by London South Bank University on 19 December 2005. Dr Refik Bismilla, the Executive Director of the Department of Health of the CoJ, granted permission for the study on 01 November 2006 which was later reconfirmed on the 18 July 2007 in accordance with the new research policies of the CoJ. During the research process written consent was obtained from all participants and they were able to withdraw from the study at any time without giving a reason (see Appendix C). Before fieldwork verbal research consent was obtained from all EHPs, managers and others that worked in the regional offices. The names of all those who participated were removed from the data and no photographs were taken. The names of areas were also removed and substituted with terms like 'inner city', 'township', 'suburbs' and 'informal settlement' that are common to South African cities. All the data collected were backed up and stored in a locked desk at the author's offices and homes in Johannesburg and London.

The relativist position of this thesis acknowledges the subjectivity of the author and his position as someone not independent of the researched. This section now explores how this continually influenced the case study design, the ethical issues that arose during fieldwork and how these were managed. One important design factor was the development of methods the author could carry out himself, but his values and position as a White, non-South African and English-only speaking EHP had many influences on the research. Beginning with values, Green and Thorogood identify three typologies of author based on the purposes of their research and its relationships with society:

- *The neutral outsider*: Authors should strive to be disinterested in political and social values, given that their role is to produce knowledge for its own sake. The implications of that knowledge, and the impacts it has on society, are not the proper concern of the author;
- *The liberal relativist*: As ethical standards are differently constructed across different settings, authors should follow their own (professional) conscience in deciding what to research and how to do it; and
- *The radical*: The proper role of research is to improve society, and the author should be explicitly partisan about their practice, striving to redress inequalities and increase social justice through their research practice (Green and Thorogood 2004 p55).

This thesis has a radical agenda but during data collection the author sought not to express his own values on participants. All research briefings were designed to be as value free as possible, focusing on the need to know more about how EHPs make decisions. The only hint towards the

wider research agenda was the statement that "...until we better understand how we work, the full potential of our work may not be realised" (see Appendix B p237).

During all data collection the author sought to remain impartial but during observation this could be difficult, particularly when EHPs were upset. For example during a visit to a township crèche case-EHP D1B burst into tears and asked the author how its owner could allow such overcrowded conditions? The author said nothing but the overcrowding there also moved him to tears that he did not try to hide. During a visit to an informal settlement in sub-zero temperatures case-EHP B4 encountered a toddler wearing only a ragged t-shirt and playing alone on the frozen ground near a lit brazier whose flames were licking the roof of the shack nearby. B4 exchanged a knowing glance with the author and nothing more was said at the time, but this encounter later prompted many reflections from B4 about the life of the urban poor.

The author was aware that his EHP background could bias data collection, not least because this had created the original idea for this thesis. Reed and Procter identify three positions of authors:

- *Outsider*: An author undertaking research into practice with no professional experience;
- *Hybrid*: A practitioner undertaking research into the practice of other practitioners; and
- *Insider*: A practitioner undertaking research into their own and their colleagues practice (Reed and Proctor 1995 p10)

The author approached this study as a 'hybrid' and decided from the very first meetings to be honest with all participants about his own EHP background. This helped to negotiate access for the research, the AD-Res recommending at the planning stage that the author establish his 'common ground' with participants (AD-Res 02 Feb meeting p2). Therefore the author was sometimes asked about environmental health in the UK, three EHPs expressing an interest in working there one day. In response the author encouraged this whilst also explaining the difficulties because of the different qualification systems between the two countries.

During fieldwork the author was aware of his own potential EHP bias. This informed the focus of this thesis on local government EHPs and sometimes prompted comparisons during field work, but the theoretical framework was also grounded in objective empirical studies and theories to describe how EHPs work. The small number of studies from South Africa and Johannesburg also meant that the author did not know what to expect other than from his pilot study experiences. During observation the author recognised the problems of selectivity and making judgments (Robson, 2002), but the settings were different to anywhere the author had worked before and he did not feel like Reed and Proctor's (1995) 'insider'. The risks of

selectivity were controlled by a case study designed to describe all the work of the case-EHPs, not just the interesting cases. In terms of judgments, the author's initial concerns that EHPs might think they were being assessed by a 'foreign EHP' proved unfounded. On only one occasion (a smoke complaint investigation) was the author asked for his professional opinion but the author reminded case-EHP B1 that he was only an observer and this was accepted without further comment. On two occasions the author was asked by business owners for his opinion of standards there but on both occasions the author politely declined to comment. The impact of the author's own judgments was lessened by repeat observations with the same EHPs and follow up discussions with them to further explore the reasons for their decisions.

The author's presence influenced observations but was minimised in different ways. All observed EHPs were briefed at the start of each day that the author did not want to participate in the events being observed. CoJ EHPs regularly take out medical and nursing students and student EHPs and were therefore used to being accompanied in their work. During most visits the author was not introduced, but on a few occasions the author was introduced as 'Rob' or as 'someone from the UK who is interested in environmental health in South Africa'. The author made no notes during observations and tried to remain in the background when possible, though he deliberately intervened on three occasions. On one occasion the author helped case-EHP B1, a new EHP to the CoJ, with map reading to find a complaint and he later let B1 borrow his Johannesburg A-Z map because the office map had gone missing. After one visit the author helped a teacher to fix a blood-glucose meter she was struggling with. During a food safety training course for street hawkers one Mozambiquan delegate was struggling to complete the attendance form herself, probably because it was written in English and/or she was illiterate. Case-EHP F1D observed this and gave the author her ID and he completed the form for her.

The author's presence and the decision of most EHPs not to introduce him influenced two visits. One township crèche owner was very upset with case-EHP D1A's judgement and attempted to negotiate with her in English. The owner probably assumed that the 'White man' present did not understand isiZulu and might have some influence over D1A, but the author said nothing and tried to remain as unmoved as possible during this very hostile encounter. During an inspection conducted in isiZulu a pub manager seemed to deliberately switch to English to challenge the EHP about the responsibility for the repairs needed. When he responded evasively, the manager looked to the author for support and the author remarked that it seemed unfair but said nothing more, conscious that he had broken his own case study protocol. The inspection continued and the issue of responsibility was raised again by the EHP at the end of the inspection as a matter for further investigation by both parties.

For the EHPs themselves only once was their use of English obviously influenced by the author's presence. At the start of a street hawkers training course the author was the only White person present but case-EHP F1D started the course in English. The delegates quickly became uncomfortable and, sensing this, F1D immediately asked them about languages and conducted the rest of the course in seSotho and isiZulu and calm was restored. The author had anticipated his own language limitations and therefore reviewed each visit (including paperwork) afterwards with the EHP. These accounts were inevitably the EHPs' version of events, but despite the language barriers the author could generally understand what was happening during visits. Further, the use of multiple sources of data and evidence converging on the themes identified helped validate the observation themes.

Lastly, the completion of this thesis nine years after fieldwork was delayed by events. In early July 2007 the author returned to the UK with very limited funds. Balancing the demands of data analysis with new jobs in the National Health Service and University sector was difficult at times and compounded by part time caring responsibilities for the author's father with Parkinson's Disease and a homeless friend. In February 2012 the author had a brain haemorrhage caused by a rare congenital condition called an arteriovenous malformation (AVM). Most of the AVM was occluded by brain surgery in May 2012 and the author's epilepsy is now controlled well but he was off work for seven months and the author continues to undergo regular monitoring with the intention of further surgery. The author suspended his PhD during this time and re-started in September 2013, two months after the birth of his daughter Freya. The author's homeless friend died suddenly in April 2012 and his father died in November 2013 which further delayed writing up. In February 2015 the author resigned from his part time University teaching post to dedicate at least two days a week to writing.

3.5.3 The impact of personal safety concerns

Ethical considerations also influenced the impacts of personal safety on the case study. Johannesburg's violent reputation is recognised by researchers (Mathee et al. 2010; Leslie and Storey 2003) and influenced the author's decision not to observe Region F1 inner city EHPs in the field following a series of meetings and discussions. The Regional F1 EH Manager warned the author that the inner city could be a dangerous place to work, that in some areas his White skin could be a danger and that the CoJ accepted no responsibility for his personal safety. In the following meeting potential case-EHPs repeated these warnings and commented that you never know what will happen each day, but this was part of their job and something they accepted.

After these briefings the author asked the advice of three White EHPs with inner city experience. All recommended observing there but one suggested establishing emergency procedures with each EHP in the event of gun threats for example, another considered it

important to work in groups so that you can constantly watch out for each other. The author then contacted London South Bank University's insurance company for advice using these examples and they confirmed that he would not be insured for events that constituted a 'deliberate exposure to unnecessary danger'. The authors' supervisors agreed that he should not put himself in danger during fieldwork and therefore the author decided not to observe the inner city EHPs outside their office nor to observe higher risk activities like night visits and blitz work targeting offending hot spots.

All the inner city EHPs were happy with this decision. The Regional EH Manager also stated that he did not want to attend a conference in two years time and hear the author describing the inner city as too dangerous because he has four white EHPs working there (0006/F1 Observation p2). Later observations found that inner city EHPs found the safety aspects of their work very difficult (see section 6.4 below) and further discussions with EHPs supported the author's precautionary approach. For example F1C thought that inner city observation would be "very tough" because EHPs are not respected and he found this "psychologically disturbing" at times (F1C interview pp50-1). F1D commented that because the author had observed in Soweto, where she lived, he would be fine in the inner city though it would also be wise to avoid entering buildings and stick to the more public main streets (0007/F1 Observation pp4-5).

The author was occasionally reminded by EHPs that he looked out of place in certain areas and could have problems there if he was by himself, but all the observations proceeded without incident. Only on two occasions did the author think there could be problems. Both occurred during monitoring visits to informal settlements when the author and EHP were approached by threatening looking men. On both occasions the (male) EHPs were unmoved and nothing further happened and the author's 'nerves' were probably heightened by his own experiences in Johannesburg that included an attempted robbery one evening and being threatened by an inner city gang when walking to the main Bree Street taxi rank. But the greatest danger was probably travelling around in poorly maintained and badly driven minibus taxis. Fieldwork also coincided with a turf war between two taxi operators that included a series of fatal shootings at Bree Street taxi rank which the author missed by minutes on one occasion. The author therefore enlisted the help of a private taxi driver during data collection.

3.6 Conclusion

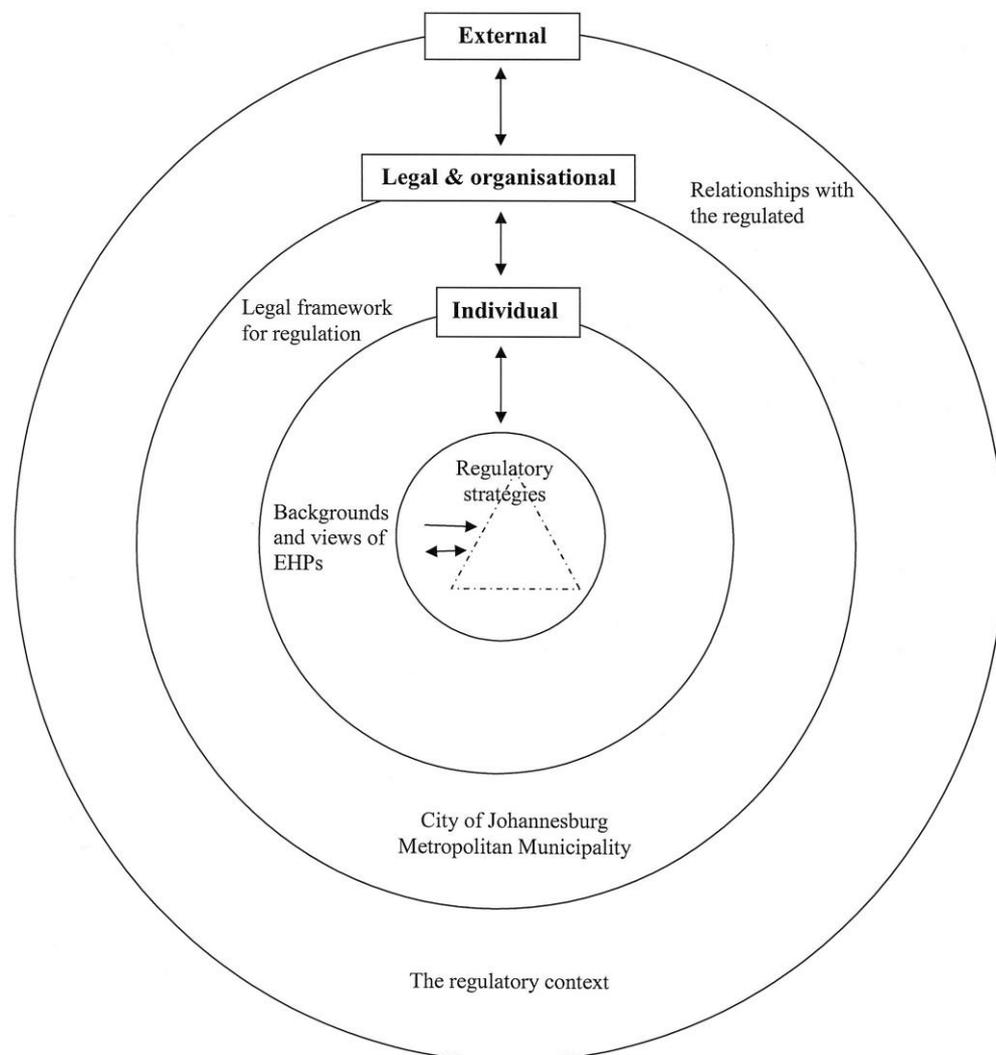
This chapter has provided details of the methods used to investigate how CoJ EHPs regulate environmental health in Johannesburg. The epistemology and the case study design and methods of data analysis were presented and discussed. Reflections on the case study in practice were also made, particularly the importance of flexibility and how ethical considerations continually shaped the case study. The next four chapters present and discuss the results.

Chapter 4 The EHP in the City of Johannesburg and the regulatory context

4.1 Introduction

The following four results chapters are structured to explore the governance model of responsive regulation by CoJ EHPs in Figure 4.1 below. This was created by this thesis by comparing and contrasting the main study results with the literature in the theoretical framework developed in section 2.5 and summarised in the governance model in Figure 2.2 above. This chapter begins at the centre of Figure 4.1 by describing and explaining the regulatory strategies of EHPs and starts with an overview of the CoJ and its environmental health services before describing the working days of EHPs. Chapter 4 then explores two pathways of regulation, their stages and responsive regulation before describing the proactive and reactive work of EHPs.

Figure 4.1 The governance model of responsive regulation by CoJ EHPs



Chapter 4 ends by moving to the outer part of Figure 4.1 to revisit the regulatory context explored in Chapters 1 and 2, notably how EHPs are influenced by South Africa's history,

macroeconomic policies and public and media attitudes. Chapters 5 to 7 then explore the other factors in the governance model, specifically how legal, organisational and individual factors and relations between EHPs and the regulated influence the regulatory process. These factors are complex and interacting as per Kaufmann's (1960/2006) funnel metaphor (see section 2.5.1) and the decision to organise them using the governance model. But the argument repeated across these four results chapters is that for EHPs these factors frequently favour persuasive over punitive approaches to regulation.

4.2 Environmental health in the CoJ

4.2.1 An overview of the CoJ

Local government in Johannesburg has been through continual restructuring since 1990 and fieldwork coincided with the latest re-organisation. A detailed description of this on-going process is beyond the scope of this thesis but between 1994 and 2000 the phases of the *Local Government Transition Act, 1993* saw political struggles between many interest groups and cycles of centralization/de-centralisation as they attempted to shape local government in their interests (Tomlinson et al. 2003). In 1997 a financial crisis led to national and provincial government intervention and an interim committee running Johannesburg until the local government elections of 2001 (Beall et al. 2002). In early 1999 this committee published *iGoli 2002*, a three year plan that created the CoJ in December 2000 (CoJ, 2005b).

Under the *Municipal Structures Act, 1998* metropolitan municipalities include areas with a high population density, an intense movement of people, goods, and services, extensive development, multiple business districts and industrial areas and a "centre of economic activity with a complex and diverse economy" (Section 2). *iGoli 2002* also proposed institutional changes to Johannesburg's new structure including the division of policy making and implementation responsibilities via the 'client-contractor split' (CoJ, 2005b) that are distinctly neoliberal. Figure 4.2 below summarises the structure of the CoJ during fieldwork.

CoJ politicians have ultimate legislative and executive power. They include 109 directly elected Ward Councillors, with whom most EHPs were in regular contact (see section 5.3.5 below), and 108 Councillors elected by proportional representation. During fieldwork the African National Congress (ANC) held 61% of Council seats and the Democratic Alliance 27% (CoJ, 2005b). The Speaker heads the legislature and oversees all CoJ committees. The Executive Mayor, Clr Amos Masondo, is elected every five years and supported by a ten member Mayoral Committee. During fieldwork this Committee were all ANC members and each member, or MMC, has a specific portfolio. Environmental Health, as a sub-directorate of the Department of Health, is led by the Health Committee's MMC (hereafter MMC:Health).

The core ‘client’ administration is led by a City Manager who is also responsible for policy making in areas including finance, planning and contract management. 13 central departments including Health, the home of EHPs, are also part of this core administration and develop and monitor policy for regional implementation. On the ‘contractors’ side, *iGoli 2002* established 11 new regional administrations and 14 new utilities, agencies and corporatized entities. Until the end of 2006 these 11 regions delivered a wide range of services, including environmental health, but fieldwork coincided with the re-organisation of the CoJ into seven regions (A to G) as summarised in Fig. 3.1 above.

Figure 4.2 The structure of the CoJ in 2007



The seven regions act as contractors to the central departments, with each service responsible for meeting performance targets (see section 5.3.4) and expected to liaise with Ward Councillors and be responsive to local citizens. The utilities, agencies and corporatized entities are owned by the CoJ but intended to function as ‘arms-length’ companies (CoJ, 2006b). The Departments, utilities, agencies and corporatized entities of the CoJ are hereafter referred to collectively as ‘CoJ organisations’ and are important for this thesis because of the monitoring work EHPs conduct on their behalf (see section 5.3.2).

4.2.2 The Environmental Health sub-directorate

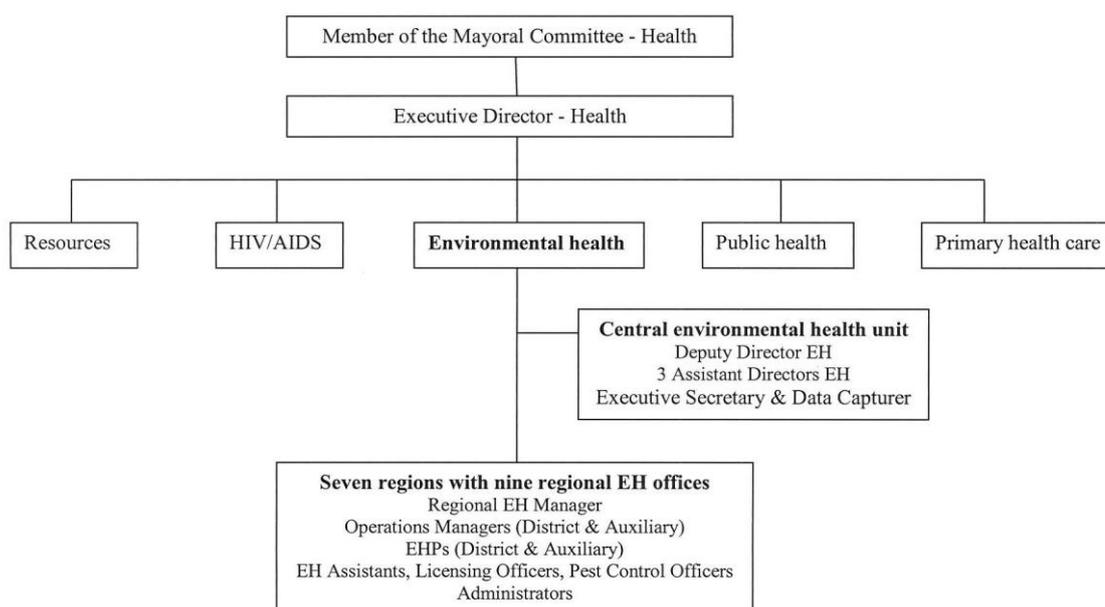
The structure of the Department of Health is summarised in Figure 4.3 below and from 1 July 2006 it was led by the MMC: Health, Clr Mfikoe, with its administration led by the Executive Director of Health, Dr Refik Bismilla, a general medical practitioner by background. Before this

the two posts had been of equal rank. This Department employed around 1500 people across five sub-directorates in central and regional offices and clinics working towards the following:

“Vision: A City with a high quality, efficient, accessible and equitable health system for all, that has adequate and flexible capacity to meet the changing health challenges facing Johannesburg.

Mission: Improved general health, well being and increased life expectancy of the citizens of Johannesburg” (CoJ DoH 2006b p1).

Figure 4.3 The CoJ Department of Health and its EH sub-directorate



In its own words the Environmental Health sub-directorate is responsible for delivering its services by complaints investigation, compliance monitoring, law enforcement and health promotion and training (CoJ DoH 2006b). In section 1.3 above it was argued that environmental health is one part of a broader public health given its long history in preventing and controlling communicable and non-communicable diseases and its contributions to primary health care and the wider social determinants of health. However as in Figure 4.3 above the Department of Health retained a traditional bio-medical structure, its other four sub-directorates covering:

- Public Health – Communicable and non-communicable diseases and health data management;
- Primary Health Care – Delivering primary health care services in 86 local government clinics and elsewhere;
- HIV/AIDS – Co-ordinating HIV/AIDS related programmes/projects; and

- Resources – Supporting the Department by integrating with national policy and advising on internal management (CoJ DoH 2006b).

In 2007 the Environmental Health sub-directorate comprised a Central EH Unit and EHPs working in seven regions from nine offices. The Central EH Unit was working “...towards the ultimate goal to protect the environment and to ensure that Johannesburg is a healthy, clean and safe city” (CoJ DoH 2006b p37). It was headed by a Deputy Director (DD-EH) and three Assistant Directors (AD-EH), all experienced EHPs, and supported by a data capturer and secretary. The Central EH Unit was responsible for overseeing and supporting the regions and developing policy (e.g. the *Public Health By-laws*) and new standards and procedures, a process that one senior EHP considered very ‘top-down’ (AD-Res 12 July interview pp3-4).

Before the latest regional re-organisation 11 Regional EH Managers reported to Regional Health Managers, but centralization during fieldwork meant each now reported directly to the Executive Director of Health as in Fig. 4.3 above. In early 2007 the Department of Health employed 134 EHPs operating from nine regional offices. This regional structure was only a few years old and prior to this EHPs usually operated alone from clinics that were closer to communities in theory, but in practice in the words of one case-EHP they found themselves “scattered all over” and often unreachable because of this and a lack of basic facilities like telephones (F1C interview pp23-4). Therefore EHPs now valued being together with colleagues and managers in regional offices and having the basic resources for the job. Problems with community engagement remained but there were always EHPs or others available to receive complaints or other issues but this section now describes the regional offices briefly.

Region F’s two Environmental Health offices each occupied part of one floor of multi-storey CoJ offices that housed many other municipal services. Inner city Region F1 was home to 30 EHPs making it the largest in the CoJ, whilst 12 EHPs were based in Region F2. The Region F2 EH Manager emphasised that the two offices had a close working relationship and effectively operated as one office, but separate offices were maintained for practical reasons including major local traffic problems. The 14 Region B EHPs and 10 Region D1 EHPs were based in dedicated EH offices within larger regional CoJ compounds. Most EHPs had their own desks, computers, telephones and filing cabinets within open plan offices, though a few Region B EHPs had their own offices. A strong feeling of camaraderie was observed in all four offices and EHPs clearly valued being together to share information, knowledge and gossip. A few were concerned about the lack of privacy, but other rooms were available nearby for meetings etc. Managers had their own offices nearby which also enabled them to observe their EHPs.

4.2.3 Who are the case-EHPs?

Table 4.1 below summarises the kinds of EHPs working for the CoJ. Most case-EHPs were Black-Africans in their 20s-30s as were most of their colleagues across the four regional offices, with very few Coloured, Indian/Asian or White street-level EHPs. One level up the hierarchy White Operations Managers were more common, though many in the four regional offices were also Black-African. Seven of the nine Regional EH Managers were White, as were two of the four Assistant Directors in the Central EH Unit. Half the case-EHPs were raised in rural areas outside what is now Gauteng Province, but four were born and raised in Johannesburg/Soweto. Most lived within the CoJ but in different regions to those they worked in. Most lived nearby because of family commitments and/or a desire to minimise travel costs.

Table 4.1 The backgrounds of the ten case-EHPs

EHP code	Sex	Age	Race	Area of upbringing	EH education	Pre-CoJ EH experience (years)	CoJ EH experience (years)
B1	M	24	Black – African	Rural	Diploma; B.Tech.	PG - 1.5 NG - 1	0.25
B2	M	29	Black – African	Rural	Diploma; B.Tech.	PG - 1	5
B4	M	59	Black – African	Soweto	Diploma	None	32*
D1A	F	34	Black – African	Soweto	Diploma	None	8*
D1B	F	32	Black – African	Soweto	Diploma; B.Tech.	PG - 4	2.5
F1B	M	24	Black – African	Rural	Diploma; B.Tech.	PG - 1 NG - 0.3	2
F1C	M	35	Black – African	Rural	Diploma	LG - 1	5
F1D	F	31	Black – African	Soweto	Diploma; B.Tech.	PG - 1 PS - 6	2
F2A	M	33	Black – African	Rural	Diploma; B.Tech.	PS - 1 LG - 6	3
F2B	F	44	White	Jo'burg	Diploma	None	12*

Diploma = Diploma in Environmental Health Sciences

B.Tech. = Bachelor of Technology degree in Environmental Health Sciences

LG = local government

PG = provincial government

NG = national government

PS = private sector

* Worked for local authorities in Johannesburg before CoJ

All had National Diplomas in Environmental Health, the minimum qualification for EHPs in South Africa, and were members of the Health Professions Council of South Africa (HPCSA). After graduating, six continued studying for a further one or two years to complete their Bachelor of Technology (B.Tech.) degrees in Environmental Health Sciences and F1C was half way there. B4 and F2B trained during apartheid in government funded schemes before working as EHPs in Johannesburg. The others all worked part time to fund their Diplomas/Degrees and recalled the challenges of balancing study with work and other commitments during this period.

Most case-EHPs had worked elsewhere before joining the CoJ. A few had different jobs (e.g. gardening, administration, sales) before and during their EHP training. F1C and F2A had worked as local government EHPs before the CoJ, but five EHPs had also worked in provincial government in rural areas (B1 & F1B), port health (B2 & F1D) and coordinating rural nutrition programmes (D1B). Two EHPs had also worked in national government, F1B as a projects officer for the National Department of Environmental Affairs and Tourism and B1 as a workplace health and safety inspector for the National Department of Labour. Two EHPs had worked in the private sector, F1D as the quality controller for an airport catering company and F2A as the hygiene officer for a commercial abattoir. Other EHPs observed had worked for the government owned railways and the South African National Defence Force.

The majority of case-EHPs had at least two years of CoJ experience, but even the least experienced B1 had worked as an EHP for two and a half years elsewhere. The results are potentially biased towards more experienced EHPs but this was controlled by the case study design (see section 3.3.4 above) and recognition of experience as an important factor in its own right (see section 6.2 below). Most case-EHPs had interests in continuing education and had pursued these at the CoJ, often in accordance with their future career plans. For example F1D had just finished a Certificate in Public Administration, B2 had nearly completed a Certificate in Noise Control, B4 had Degrees in Public Administration and Urban Studies and a Diploma in Financial Management and F2A was half way through a Masters in Environmental Health. Others were planning qualifications in safety management (B1), solid waste management (D1B) and business studies (F1B) and hoped to work in these areas in the future.

There was also evidence of career development amongst the case-EHPs. D1A spent her first three years as a contract EHP before securing a permanent post and shortly after fieldwork ended F2B and F1D were promoted to Operations Managers. The other case-EHPs hoped their continuing education would open up new opportunities at the CoJ or elsewhere and B4's own career illustrated what they could achieve. He started as an EHP in the 1970s, became a regional manager in 1994 and then worked in policy development and the private sector. He returned to

the CoJ in 2001 as an EHP but became a Regional EH Manager shortly after fieldwork ended and on his retirement in 2010 became a university academic.

Working in local government was also considered good for career development. The EHPs had varied careers before the CoJ, but F1D summarised what many felt:

“...to really practice being an Environmental Health Practitioner you have to do it at the local level, at the municipality” (F1D interview p3).

This was partly in recognition of the breadth of responsibilities and opportunities in local government that were not available elsewhere, but most EHPs believed that in local government they could finally put into practice what they had learned at University.

When asked why they originally chose Johannesburg only three case-EHPs considered it a good career move because, in F1C’s words, it was “the place to be” (F1C interview pp5-6). Instead most cited better pay and conditions and/or a desire to be nearer home and family. The Region F2 EH Manager recognised these attractions but was concerned that metropolitan municipalities were draining rural areas of EHPs and she was relieved that the CoJ had recently stopped recruiting from Limpopo province (Region F2 EH Manager reflections p3).

4.3 The working days of EHPs

Having established that EHPs are qualified professionals, this next section further confirms their Weberian (1947) bureaucrat status by outlining their role delivering municipal health services before exploring how their working days are determined by their position in departmental hierarchies. The section ends by introducing the rules, standards and expectations that shape the work of EHPs whilst acknowledging their considerable discretion.

The working days of EHPs involved delivering municipal health services (MHS) that cover both brown and green environmental health hazards and include:

- water quality monitoring;
- food control;
- waste management;
- the health surveillance of premises;
- surveillance and prevention of communicable diseases (excluding immunizations);
- vector control;
- environmental pollution control;

- disposal of the dead; and
- chemical safety *(National Health Act, 2003 Section 1)*

To explore how EHPs divide their work between these areas two sets of data for the period 2005-6 were collected from the Department of Health's annual report (CoJ DoH 2006b) and are summarised in Appendices K1 and K2 for information. They must be interpreted with caution because they only count the numbers of encounters (K1) or (more detailed) evaluations (K2), not the time spent on these activities. Further, three MHS areas are missing because data on water quality monitoring and chemical safety (e.g. training workshops, chemical poisoning investigations) were unavailable whilst data on the disposal of the dead (some 129 visits to mortuaries and crematoria) are incorporated into the health surveillance of business premises category. Important non-MHS areas (e.g. health promotion, project working) are also not included and attempts to get more complete data were unsuccessful (see section 3.3.4 above). This data also includes non-EHPs (e.g. licensing officers, pest controllers) and pre-dates the restructuring of the regional offices.

During 2005-6 CoJ EHPs mostly focused on the health surveillance of premises, particularly formal and informal dwellings (usually non-permanent structures) and business premises, and the control of food, particularly retail food premises and informal food traders. This focus was mirrored across the four regional offices, but local priorities included the informal food traders in inner city Region F1 and informal dwellings in the townships of Region D1. Most other MHS work focused on vector control, environmental pollution control and waste management, particularly the problems of illegal dumping. There were relatively few investigations of communicable disease but those case-EHPs involved were concerned about how long these investigations took and its impacts on their other work.

EHPs identified the greatest health risks across the CoJ (see Appendix K2) from accommodation establishments (62%), informal dwellings (88%) and open areas (67%) due to problems like illegal dumping. However the health risks from informal food traders were only slightly higher than in formal food premises and this is explored further in section 7.7 below. Appendix K2 shows that Region D1 completed far fewer evaluations than the other three regional offices and during fieldwork its EHPs admitted that their health surveillance work had been affected by limited resources but things were beginning to improve, not least because so many evaluations of places of care (61%) were identifying health risks.

The working days of EHPs were largely determined by their position in the Departmental hierarchy in Figure 4.3 above. The four Central EH Unit Directors developed policy and

coordinated the work of the regions and liaised with regional EHPs, politicians, the Executive Director-Health, other CoJ organisations and external organisations like Provincial and National government. From their nine offices Regional EH Managers were mainly office based and managed service delivery in their regions, liaising with the ED-Health and the Central EH Unit and local politicians. Occasionally they worked in the field, particularly during non-routine and/or complex cases and when politicians were involved. Further, Regional EH Managers also assisted in basic office tasks (e.g. answering phones, logging complaints), particularly after 10:00AM when most EHPs were in their areas.

Most Operations Managers had responsibility for four or five district EHPs but in each regional office at least one Operations Manager was responsible for supervising officers, including EHPs, delivering auxiliary services specializing in pest control, licensing and environmental pollution control. Operations Managers were mainly office based but sometimes accompanied their EHPs/officers in the field, particularly during complex cases. They also worked on complex cases, coordinated prosecutions and specialist EH projects.

Nine of the ten case-EHPs were district EHPs covering all nine MHS areas listed above and others (e.g. health promotion) within their areas. In contrast case-EHP B1 was one of two newly appointed auxiliary EHPs and specialised in environmental pollution control across all Region B. Most of the EHPs' daily work was in the field and face to face and this was something all valued, some commenting that they did not want an 'office job'. They mostly worked alone and covered areas that followed the administrative boundaries of CoJ wards, though sometimes other factors including resources and the numbers of premises shaped their areas. Interestingly, it was also common for EHPs to act up one level when their manager was on holiday or there were extended gaps in their appointment. Their daily responsibilities and pay remained unchanged, but EHPs gained valuable experience for their future careers.

The structure of their working days was the same across the four regional offices and B4's recollections from 1970s Johannesburg suggest they remain largely unchanged. From Monday to Friday most EHPs were in the office before 08:00AM and busy with administration until around 10:00AM when they started work in their areas. Around 15:00PM they return to their offices and spent the last hour on administration before leaving around 16:30PM. Two case-EHPs summarised their daily routines as:

“We do the same thing every day, every day you do the same thing. And, you are exposed to the same things, the same conditions every day” (F1B interview pp26-7).

“So mainly it’s inspection, inspection, inspection, complaints, complaints, complaints the whole day.... that is mainly what I do” (F1D interview p2).

EHPs normally did not work evenings or weekends. Instead an answer phone recorded public complaints and EHPs would start responding the next working day though they knew that sometimes the following day or Monday morning could be too late. Non-routine work (e.g. health surveillance of night clubs, blitz⁶ work) required EHPs to work evenings or weekends and was popular with EHPs when counted as overtime. Other activities including project working or promotional activities also sometimes involved working outside the standard day.

EHPs generally considered paperwork a ‘necessary evil’ and D1B described a culture that “if it’s not written then it means it’s not done” (D1B interview p21). B4 thought EHPs had far more paperwork discretion than during apartheid but the quantities had also increased alongside the demands from managers and other CoJ organisations (B4 interview pp24-5). In each office small numbers of EH assistants and administrators supported EHPs in various ways (e.g. recording complaints, finding GIS locations and business owners) but EHPs completed their own paperwork. Most preferred this because support was limited and “...you cannot actually go outside there and then have another person write the report” (F1C interview p29). The recording of daily, weekly and monthly performance data was a constant and each day all paperwork went to Operations Managers for review and approval. Getting the fieldwork-paperwork balance right was a constant struggle amidst unpredictable workloads, where “...more problems [equals] more admin” (B4 interview p24). Managers recognised these concerns and generally supported their EHPs in managing these tensions. EHPs also valued how paperwork provided constant evidence of their work to managers. On Fridays any unfinished paperwork (e.g. unresolved complaints, revisits) was recorded on ‘holdover’ forms submitted to managers for approval.

Despite these controls, the case-EHPs all recognised and valued their discretion in the field:

“...you start at 8, leave at half past 4, you are in the office from 8 to 10, from 10 you should be out of the office because your work is at the field, come back 3 o’clock... But they’re [managers] rarely telling you exactly how to work, there is no, you must just do it yourself” (F1D interview p6).

“...you are given an area and then you supervise that area, whatever problems arise in that area, and then you are responsible. There is no one always behind you, ‘where are

⁶ Blitz work targeted known hotspots for EH offending and frequently involved other CoJ organisations, particularly the Johannesburg Metropolitan Police Department (JMPD).

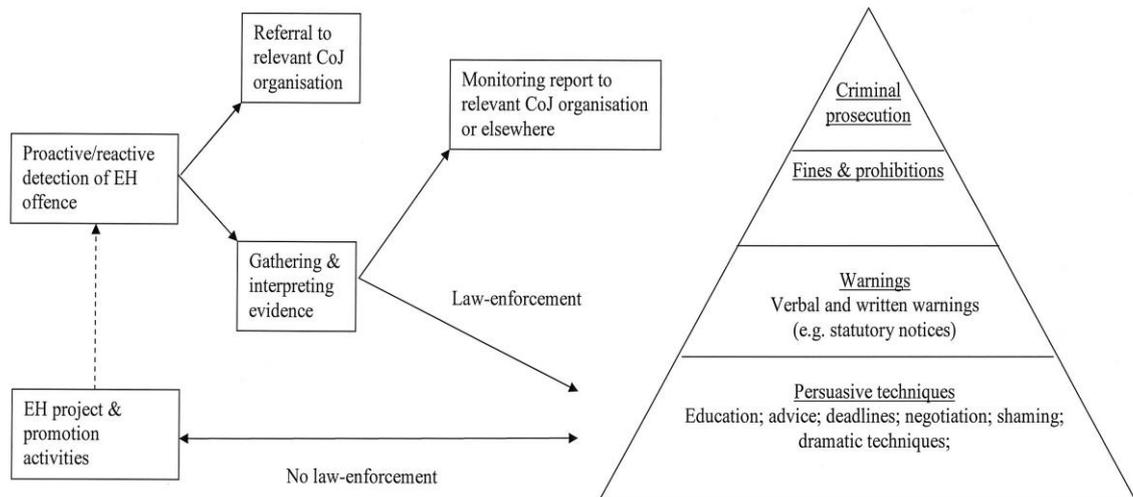
you, what are you doing?’ ...we are responsible people, that is very good about our job, there is not always somebody going with you... you become responsible, you become adult, you know to supervise yourself it’s something else.’ (F1C interview p26)

EHPs knew the limits to their discretion, but F1C believed it had made him stronger as a person and more able to “face whatever problems” (F1C interview p26). Further, all valued the flexibility discretion gave them and how it enabled them to manage their work in different ways, for example by organising their work geographically to reduce travel time and to focus on those in the greatest need. These decisions sometimes created tensions with managers, but EHPs maintained they were best placed to make these decisions and managers usually accepted this.

4.4 Introducing the regulatory strategies of CoJ EHPs

This section introduces the stages of regulation as summarised by two pathways in Figure 4.4 below. This was developed by the author from the results data to describe and explore the stages CoJ EHPs go through before reaching their own pyramid model of responsive regulation. The first is the traditional regulatory law enforcement pathway that begins with the initial detection of offences and ends with the responsive regulation pyramid. But this thesis also identifies a second pathway associated with EH project and promotion activities that usually do not originate in offending but which are often influenced by the regulatory pyramid.

Figure 4.4 The stages of regulation by CoJ EHPs



4.4.1 Detecting the EH offence

The regulatory process begins with the detection of potential environmental health offending by proactive or reactive means (see section 4.5 below). The word ‘potential’ is important because at this stage it could be hard to establish whether an offence has been committed without further investigation. Most proactive work was unannounced but before accessing any premises/areas EHPs would show their CoJ ID and introduce themselves as ‘[name] from the Health

Department' and explain the purpose of their visit. Depending on the case, they would then ask to speak to the owner/person in charge and discuss their visit in more detail before starting any investigations. If EHPs knew the premises these introductions were brief and did not involve ID, but when visiting for the first time EHPs were careful to clarify the purpose of their visit for many reasons, not least the hope of starting to build co-operative working relations.

4.4.2 Referral or gathering and interpreting evidence

Matters obviously not relevant to EHPs were referred (via reports) to the relevant CoJ organisation or provincial/national government regulator. All other matters were then subject to further investigation by EHPs using skills like observation, interviews and the analysis of documents. Back in the office other checks might include the past history of the business, previous complaints and/or background checks of the CoJ's GIS records. Other CoJ organisations might also be contacted and together this evidence informed whether referral to the relevant CoJ organisation or other regulator is necessary or if EHPs have complete or shared responsibilities for a case. Responsibility could be shared because EH regulation is fragmented in the CoJ itself and between other spheres of government (see section 5.3.2).

4.4.3 Monitoring reports

EHPs undertake a wide range of EH monitoring for other CoJ organisations and provincial government that is explored in more detail in section 5.3.2 below. In summary many EHPs thought the ability to work with such a diversity of organisations was a key skill and monitoring reports were drafted by EHPs then reviewed by their managers before being sent to the relevant organisation(s). In theory this ended the EHP's involvement, but in practice monitoring usually continued because conditions changed or the problems continued, particularly when the recommendations of EHPs were not acted upon.

4.4.4 Confirming the pyramid of responsive regulation

As summarised in Figure 4.4 above, the regulatory options available to CoJ EHPs in their regulatory pyramid differ from those described for UK EHPs (and other EH regulators) by Hutter (1997) in Figure 2.1 above. However, the core pyramid distribution of regulatory activities of EHPs was confirmed by three sources of evidence that suggest the predominance of persuasive approaches during routine work. First, the observation of 14 CoJ EHPs during fieldwork confirmed routine activities dominated by persuasive approaches towards the base of the pyramid, particularly the provision of education and advice. Written warnings in the form of statutory notices were issued after some visits but only one fine/summons was served during 89 observed visits. Non-routine work targeting known offending hotspots, when punitive approaches were more likely, was not observed.

Second, the author was unsuccessful in his requests for law enforcement data (see section 3.3.4) but the regulatory pyramid mirrors the CoJ performance targets for EHPs summarized by the author in Table 4.2 below. Performance management is explored in section 5.3.4 below but the case-EHPs usually exceeded their performance targets. In Table 4.2 the estimated figure of 1800 premises is based on the typical agreements observed by the author, where EHPs complete eight inspections/complaints per day during a working year of around 225 days⁷. This suggests the probability of a fine/summons during routine encounters of around 1:50. This calculation could not be directly applied to the target data for all the EH sub-directorate in the next column of Table 4.2 below because the total target number for all evaluations was not available. However, the Appendix K2 data show at least 122262 evaluations were completed over 2005-6 which suggests a similar probability of around 1:49 assuming that EHPs at least meet their annual fine/summons targets. This probability could be lower still when EHPs are involved in non-routine work targeting offending hotspots.

Towards the top rows of Table 4.2 below the author was unsuccessful in his requests for data on the numbers of prohibitions (e.g. premises closures) and prosecutions carried out by the CoJ. By its nature the fine/summons automatically becomes a prosecution if unpaid and contested, but this process was organised by the criminal justice system and EHPs did not know what happened after they had issued the fine/summons as explored in section 6.9 below.

Table 4.2 CoJ data confirming the pyramid distribution of regulatory activities

(Sources: Results in EHP scorecard data; CoJ DoH 2005, 2006b&c)

(- = no data)

	Typical EHP per year	Annual EH Sub-directorate targets for 2005-6 and 2006-7	Inner city Clean and Green campaign
Criminal prosecutions	-	-	-
Number of fines/summons issued	36	2495	1650
Number of prohibitions	-	-	-
Number of statutory notices	264	29 781	3678
Number of premises evaluated/re-evaluated	1800	No target data, but 122262 evaluations over 2005-6	10970
Crude probability of fine/summons	1:50	1:49	1:7

⁷ Assuming a working year of 250 days that excludes weekends and 12 days of public holidays, from which the EHPs' typical annual leave of 20 days and 5 days training is then subtracted.

Third, in the final column of Table 4.2 non-routine activity data from the Executive Mayor's inner city Clean and Green campaign in 2006 suggested a far steeper regulatory pyramid where the probability of a fine/summons increases to 1:7. This is not surprising given the campaign's targeting of known offending hotspots and its 'zero tolerance' approach to offending where the fine/summons was issued without prior warning (CoJ DoH 2006c). No similar non-routine activities were observed during fieldwork but more punitive approaches were an important regulatory tactic for CoJ EHPs.

4.4.5 Moving up and down the regulatory pyramid

The stage at which cases entered the regulatory pyramid and the speed they moved up/down thereafter depended on the case and the factors explored in Chapters 5-7 but the case-EHPs used predominantly persuasive approaches towards the base of the pyramid in Figure 4.4 above towards achieving compliance with the law. If these initial attempts were unsuccessful they would be followed by negotiations where EHPs typically appealed to a person's sense of responsibility to their customers or the public. The agreement of deadlines was also useful here because, as Hutter (1988) found, it suggested reasonableness on the part of the EHP whilst obliging the offender to carry out the works needed in the agreed time period. Shaming businesses into compliance, for example by comparison with better premises nearby, was another technique used in these early stages. Bluffing strategies included making demands or threats that would be difficult to enforce if called. For example EHPs observing relatively minor offences sometimes commented that 'you know I could close you down' or 'I could fine you R500'. Dramatic techniques like raised voices or asking people to point out their offences also helped EHPs reinforce their demands.

Failure to secure compliance would usually result in an escalation to verbal and written warnings, the next level of the pyramid in Figure 4.4 above. The former included threats of further escalation, particularly the fine/summons, that EHPs would be forced to take if offending continued. This could include involving managers, other CoJ organisations or the courts themselves and, after Hutter (1988), helped shift responsibility for action onto the offender in a reasonable way. The most common written warnings were statutory notices but they also included reports or letters depending on the case. Standard formats and checklists were used to record inspection data for some premises (e.g. food premises, places of care) and the Central EH Unit was developing more. There was no standard format for written warnings but F1D thought this was deliberate because "... [our managers] don't want to tell you what to do, they want you to use your own way of doing things..." (F1D interview p6). Appendix L provides an example of a statutory notice but all written warnings included the following:

- Date
- Name and address of potential offender
- Address and stand number of offending premises
- A summary of the offence committed, including the relevant laws
- The works to be completed towards compliance, with timescales
- The EHP name and contact details

Depending on the case, details like the GIS location were also included and photos using digital cameras were being used to give reports more impact. Written warnings typically ended with a standard sentence like ‘your co-operation will be greatly appreciated, but failure to comply may result in legal proceedings being taken against you’.

Depending on the offence some warnings cautioned that a fine/summons could result from continued non-compliance and stated the maximum fine for that offence upon conviction. In the field statutory notices were written on blank and indexed carbon copy sheets, with the top sheet given to the offender at the end of the visit. Of the two remaining copies, one was retained by the EHP in their filing cabinet and the other sent to their Operations Manager for review. On returning from the field, hand written warnings were usually typed up by EHPs and reviewed by their manager. The final copies were posted to the offender where possible (e.g. some informal traders lack postal addresses) or hand delivered and filed for future reference. Written warnings were subject to further scrutiny by EHPs during revisits.

Continued non-compliance could result in another written warning or increasingly punitive action by escalation to the next stage of the regulatory pyramid in Figure 4.4 above, typically a spot fine/summons. This was the most common punitive sanction used by EHPs and incorporates both a fine and a court summons (see Appendix M) and is normally used by the CoJ’s JMPD and its Department of Transportation for regulating road traffic. Authorised EHPs (called Peace Officers) completed the carbon copy form on site with details of the offence and the next regional court date (EHPs carried lists of local court dates in their bags) if the offender wishes to appear before the magistrate and contest the offence. The fine/summons thus gave EHPs the power to prosecute offenders, a sanction that makes them much more powerful than their UK counterparts where prosecution decisions are usually made by the local authority itself.

The spot fine/summons also provides further information for the accused in Afrikaans and English (not shown in Appendix M) that includes a warning that the failure to comply could result in arrest and sentencing to a fine not exceeding R1500 or imprisonment for a period not exceeding 3 months. For those admitting guilt, details of the various payment methods of the

Department of Transportation are included. Those disputing the offence should inform the public prosecutor in writing before the payment of the fine deadline and are recommended to use a lawyer or apply for legal aid via the court. The original copy of the spot fine/summons was left with the offender, another was filed by the EHP and the third submitted to the local JMPD duty Sergeant/Inspector. This police officer then reviews the document, signs the EHP's handover form when happy and the fine/summons enters the criminal justice system.

Other formal options exist but were not observed during the fieldwork and were only mentioned briefly by more experienced EHPs and managers. They are grouped under the heading 'prohibitions' in Figure 4.4 above and include the closure of premises, the suspension/withdrawal of licenses/permits and other procedures like court orders to take control of premises/buildings or confiscate equipment (e.g. music amplifiers). Only a few EHPs had prohibition experience but the Central EH Unit were drafting guidance for EHPs who were very keen to try these approaches, not least because of the problems with the fine/summons as explored in section 6.9 below. Inner city Region F1 EHPs also worked with the CoJ's Inner City Task Force because they had far greater expertise of prohibition related approaches.

At the peak of Figure 4.4 above, criminal prosecution is the highest sanction and the nature of the spot fine/summons meant that, in theory, prosecution happened automatically if an offender chose to contest their fine in court. Offenders not paying their fines and then failing to appear in court were, in theory, automatically issued with warrants of arrest. EHPs could also force such cases to court by requesting that public prosecutors serve a 'Notice to Appear in Court' on the offender, a procedure commonly known as a 'J175'. During fieldwork Operations Managers were preparing prosecution cases but the involvement of the EHPs observed was limited.

4.4.6 Environmental health project and promotion activities

Returning to Figure 4.4 above, most case-EHPs were also engaged in a second pathway associated with on-going EH project and promotional activities with local actors including schools, businesses, community groups and non-government organisations (NGOs). These interventions are separate from the first pathway described above, not least because they often do not originate from offending and can be initiated by local actors themselves. However a broken arrow is used to link the two pathways in Figure 4.4 for two reasons. Occasionally project/promotion activities did lead to the detection of offending and these activities were often shaped by the regulatory pyramid as illustrated by some examples below. Therefore whilst project/promotion activities remain separate from the educational activities towards the base of the regulatory pyramid, they remain regulatory by nature given their role towards achieving compliance with the law.

Some EHPs were responsible for health education in their regions. During fieldwork F1D was delivering half-day hygiene training courses for informal food handlers and lead awareness training for pre-schools from across Region F1. Each course was structured around the technical and practical aspects of the subject and tailored to the requirements of delegates, particularly those from the informal sector, but F1D constantly reminded delegates of their legal responsibilities and warned that non-compliance could result in punitive sanctions. Fieldwork coincided with Johannesburg's Annual Water Festival with stands from many CoJ organisations, including Region F1 Environmental Health, and talks to visiting school children about CoJ services. Global environmental health days were celebrated each year and F2A was busy with local teachers planning activities for 'World No Tobacco' and 'World Environment' days, the latter including plans for a 'healthy environment' poster competition and community workshops on the environment and illegal dumping.

EHPs worked regularly with local groups and NGOs in different ways. Attending meetings gave opportunities to provide information and education on environmental health and other CoJ services. EHPs could also receive complaints and feedback about local problems and concerns that might otherwise remain undetected. Further, EHPs could also make referrals to other CoJ services where appropriate. F2A had recently attended a local youth event to talk about illegal dumping and By-law enforcement and was planning more events like this in the future. He hoped that by educating the youth "...you make your programme sustainable, because they are the future leaders and they can EASILY take the information back to their homes" (F2A interview p4). Work with local NGOs included the provision and maintenance of basic EH services for vulnerable groups like refugees and those affected by HIV/AIDS and EHPs recognised that maintaining good relations with them could be mutually beneficial:

"They know us, that we are there, whenever we need their assistance we call them on board, or maybe their chairman and sit down and discuss... we are working hand in hand, you know it's good to work like that, that can make our job easier at the end of the day because they are actually there every day, they are staying there, they know, they are not like people going there and go, they know. When you are speaking to them, they know the situation" (F1C interview pp32-3).

As well as contributing to existing community projects, some EHPs had developed their own. Field work coincided with an on-going hostel clean-up campaign targeting 10 hostels identified by EHPs across Regions D, E and F. The hostel heads worked with residents, Ward Councillors and other CoJ organisations (e.g. Pikitup – the waste management utility) on activities including the cleaning of hostels and surrounding areas and workshops on healthy lifestyles and the CoJ By-laws. Half way through the campaign more than 450 residents, including women, children

and the unemployed had participated (CoJ DoH, 2007). Former gardener B2 was also working with township residents to create a local park (B2 interview p21). Two Region F1 EHPs had also developed a smokeless coal stove (see Appendix N) and in 2011, as part of a wider programme to improve air quality and empower small businesses, they donated 25 to informal township traders and were planning similar future donations (CoJ, 2011).

The illegal dumping of solid waste had also prompted EHPs to organise local projects to complement their regulatory activities. For example B2 had reduced illegal dumping by involving local people in the monitoring of known hotspots; they now did not hesitate to call him if they saw anything (0006/B Observations p11) and other EHPs were developing similar projects. B4 had started a similar project around his own home, partly by shaming (in his own words) his neighbours into action by asking what they had done to make a difference to their local environment beyond just complaining to the council (0010/B Observations p11). Across the four offices EHPs were actively trying to persuade the public to take more responsibility for their environmental health, Region D1 using a briefing that began:

“The City of Joburg takes the protection, conservation and enhancement of its environment seriously. However, inconsiderate people litter our streets, dump refuse and waste on vacant stands and open spaces and pollute our underground water resources, soil, streams and air. The monitoring and control of illegal activities, pollution and dumping cost the City a great amount of money. This cannot be allowed, as these wasted funds are needed for urgent projects such as housing, infrastructure and other services. The City of Joburg cannot protect, conserve and enhance the environment on its own and therefore requests the assistance and commitment of all stakeholders in combating these crimes” (Region 6 Notice, undated)

The briefing then requests the public to inform EHPs of anyone who commits any of the offences listed there and warns that ‘zero tolerance’ will be applied with ‘stiff fines’ for those found guilty by the courts. By prosecuting offenders the briefing argues that the CoJ is protecting the rights of South Africans and it ended with a separate section outlining the information required by EHPs plus a guarantee of confidentiality for all informants.

4.5 The proactive and reactive approaches of EHPs

This section summarises the proactive and reactive ways that EHPs regulate across Figure 4.4 above. Table 4.3 below summarises the results in terms of the numbers of proactive or reactive visits observed during fieldwork, the additional 40 premises in Region F2 reflecting the inspection of 40 food premises at a festival one evening.

Table 4.3 Proactive/reactive nature of field work visits

(Source: Results in PhD observation notes)

Type of visit	Number of visits by Regional office				
	Region B	Region D1	Region F1	Region F2	Total
Proactive	5	18	0	10 + 40	33 + 40
Reactive	10	0	3	5	18

The importance of proactive working was widely acknowledged. One Region F2 Operations Manager commented that the CoJ had lost a lot in the past by reactive working but by becoming more proactive environmental health was improving, particularly through better surveillance and targeting of known hotspots (0001/F2 Observations p3). Most proactive work was unannounced and EHPs were flexible in fitting around busy workplaces, though as Hutter (1988) found this was also dependant on whether they thought business owners/managers were genuinely busy or being evasive. EHPs only booked proactive visits when issues like access or safety were problematic, for example prisons.

Whether EHPs were accompanied by business owners/managers during proactive visits was determined by the case itself (e.g. seriousness, staff availability) and their own preferences. For example some EHPs preferred to work alone and report their findings afterwards, but others gave people the option to accompany them which was usually accepted. All visits ended with meetings to review the findings and the next steps. Much of this proactive work was initiated by EHPs themselves in accordance with the traditional regulatory pathway in Figure 4.4 above, though some project/promotion activities were also proactive as described above.

Of the 73 proactive visits observed during fieldwork, only one resulted in a spot fine/summons and all others involved largely persuasive regulatory activities. The following three results chapters will explore why in more detail, but the annual performance agreements between EHP and their Operations Manager were influential because each set minimum monthly targets for the numbers of premises inspected and complaints investigated and specific regulatory activities completed (see section 5.3.4 below). Proactive work was also influenced by the responsibilities of each EHP and the areas they cover. There were no formal systems of risk assessment to prioritise premises for proactive intervention. Performance targets influenced how many premises they visited and set minimum numbers for regulatory activities completed each month, but otherwise decisions about which premises to visit were left to the individual discretion of EHPs. For example, EHP B2 chose to inspect all the pre-schools in his area every month, not every six months as per his performance targets, because he was concerned that standards would drop if he did not do so.

For reactive work, complaints worked covered all EH areas but those related to waste management (e.g. illegal dumping, sewage leaks), environmental pollution control (e.g. noise, smoke) and vector control (e.g. pest infestations) were encountered during the observation of fifteen investigations in Regions B and F2. The author was unsuccessful in his requests for more complete complaints data, but during 2005-6 there were some 524 noise and 1473 air quality related complaints across the CoJ (CoJ DoH 2006b). Township Region D1 did receive complaints but no investigations were observed during fieldwork and EHPs there were noticeably more 'proactive' in their attempts to encourage the public to complain when compared to the other offices.

Complaints reached EHPs from many sources. Most reached them via telephone calls or visits to the regional CoJ Peoples' Centres that were being promoted as the public's first point of contact. Sometimes complainants visited the offices of EHPs in person or complained to them during visits or meetings etc. This was important given the difficult relations between EHPs and the public, particularly in the poorer areas of Region D whose EHPs had concluded that bringing the complaints book to the people was vital because "...if you wait for them to come they are not going to come" (D1A interview p19). Outside office hours, complaints were recorded on answer machines and processed into complaints by administrators/EHPs the next working day. Other sources of complaints included local politicians, other CoJ organisations and senior managers from the Central EH Unit. All EHPs had CoJ email accounts and access to office computers, but this access was sometimes limited and EHPs usually corresponded with complainants by phone, letters and visits. All complaints were treated seriously by EHPs because, as Hutter (1988) found, their actions could be subject to greater public scrutiny than during proactive work, particularly when politicians were involved (see section 5.3.5 below). The EHP's perceptions of a complainant's motivations were also important in determining their regulatory approach as explored in section 7.2 below.

The basic details of the complaint and the complainant were recorded by the administrator/EHP and entered into an electronic database and the office complaints book. During fieldwork a new database was centralising complaints via the regional Peoples' Centres before distribution to the regional offices for further investigation. Where possible the GIS location of the complaint was also pinpointed to gather further details (e.g. land ownership) and ensure allocation to the correct EHP. This worked well in theory, but in practice centralised call operators lacked knowledge and were making mistakes like inputting the same details into the 'Address of Complaint' (i.e. where the offence happened) and 'Address of the Complainant' and consequently EHPs were even more careful to maintain confidentiality. It was also becoming harder for EHPs to access this central database to investigate the complaint's history.

Complaints were usually allocated to the EHP responsible for the area in which they originate and investigations began soon after receipt. Where possible the EHP would try to witness the complaint, well aware that delays could result in a loss of evidence as often happened with weekend noise complaints. Responding to complaints quickly also helped EHPs maintain good relations with all parties, though investigations could be delayed by a lack of evidence, difficulties contacting complainants (e.g. no telephones) and cases that involved other CoJ organisations. Performance targets for complaints usually required EHPs to initiate investigations within two working days of receipt, with a further three working days to initiate action. Reports for completed complaints were reviewed by managers before being sent to the Peoples' Centres for archiving, though EHPs were retaining copies given the on-going problems of access.

EHPs were also engaged in activities to raise public awareness of their services and environmental health more generally. During fieldwork EHPs were observed distributing advisory leaflets in residential areas, shopping malls and other workplaces that explained their services, gave instructions of how to complain and details of local EHPs by area. The EH sub-directorate also hosted a website with this information and more covering five priority areas:

- Permits for public health by-laws (including application forms)
- Business licensing (including application forms)
- Illegal dumping
- Cleaning and clearing of vacant stands
- Food safety at food premises: general tips and guidance

This chapter started by exploring how environmental health is organised in the CoJ and introducing its EHPs before describing and exploring their working days, summarising their regulatory strategies and how these conform to the pyramid of responsive regulation. Their work in EH project and promotion activities was then explored, the section above summarising how EHPs work in both proactive and reactive ways. Having explored the regulatory strategies of EHPs at the centre of Figure 4.1 the final section of this chapter now turns to the first factor influencing regulation, the context in which it takes place.

4.6 External factors: The regulatory context

Theoretical and empirical studies provide accounts of how regulators can be influenced by the political and socioeconomic contexts in which regulation takes place, what Hawkins (2002) calls the 'surround'. This section builds on the literature review in Chapters 1 and 2, particularly section 2.5.2, by using the results to revisit South Africa's history before exploring its

macroeconomic policies, how public and media attitudes are influencing EHPs and why this context often favours persuasive regulatory approaches.

4.6.1 Historical context

Chapter 2 summarised the challenges for South African EHPs tasked with improving the environmental health of historically disadvantaged and potentially hostile populations whilst maintaining the highest standards expected in more affluent areas. The literature review in section 2.5.2 above painted a bleak picture of EHPs during colonialism and apartheid, notably how EH regulation was characterised by punitive regulatory approaches and frequently used to justify the segregation and control of populations. Indeed, the CoJ *Public Health By-laws, 2004* require EHPs (and others) to “take account of historic inequalities...” when dealing with matters affecting public health (Chapter 2 Section 3 (6) (c)).

Two case-EHPs (B4 and F2B) and three Regional EH managers had worked as EHPs in Johannesburg during apartheid. All apart from B4 were White and had worked mainly in the city’s White areas since the 1970s-80s and further confirmed that the predominance of law enforcement approaches that included a lot of time in court. They acknowledged that this work was inherently unfair to non-White people and businesses, but two also believed that such prescriptive laws made their work clearer. However B4 volunteered a more nuanced account of apartheid era regulation. He first worked as a township EHP in Johannesburg in the mid-1970s with responsibilities for measles and polio immunisation and supervising bucket latrines before moving to Soweto as one of its 200 inspectors. There he was responsible for enforcing public health By-laws and was gradually promoted until working across all Johannesburg, including White areas.

In the 1970s B4 explained that national government was deliberately selecting, training and then posting health inspectors to the areas with the worst environmental health like rural Limpopo. Those EHPs appointed by the rural (self-governing) homeland governments were not very effective because they were so few in number (e.g. 1 or 2 per homeland) and had to travel long distances so could only stay in one place a few days before moving to another area (B4 interview pp16-7). In contrast, urban environmental health was much better due to population controls (e.g. pass laws) and the greater resources available, Soweto alone having 200 EHPs (B4 interview pp17-8) when compared to 221 across all the CoJ in 2013 (Mudaly, 2013).

In Soweto B4 would typically start work at 08:00AM and complete the previous day’s paperwork before being dropped off by his supervisor in his areas from 10:00AM to 16:00PM. During a typical day he would inspect 50 residential units (e.g. homes/hostels) and businesses and he thought the health surveillance and pest control measures then were of a high standard.

EHPs often worked in areas where they did not speak the language, but they soon learned it. Threats from township gangsters and the public were common, the latter often commenting:

“How can you, a fellow African....” (0010/B Observations p4)

But B4 thought it important to have a job and by working as an EHP was proud of his work. He also recalled one incident that suggests public attitudes weren't all hostile. During the Soweto uprising in 1976 three White pest controllers became trapped; two managed to escape but one was hidden by locals who later smuggled him out, assisted by boot polish to blacken his face.

B4 gradually progressed beyond the township areas by conducting inspections in so-called 'grey' food businesses serving Johannesburg's factories and run by Greeks and Portuguese. Initially his White superiors would revisit the premises to communicate B4's inspection findings but he was eventually authorised to do this himself. Offences generally resulted in fines and prosecutions and B4 spend a long time in the courts which he did not think were fair but they sometimes helped to improve local conditions. When prosecuting White people his presence would often be met with outrage (e.g. 'how dare a Black man tell us what to do', 'who is this Black monkey?') but he usually won his cases and magistrates sometimes held offenders in contempt of court for such comments (0010/B Observations pp6-7).

These accounts further confirm that EH regulation before democracy reinforced apartheid and was characterised by more punitive regulatory approaches that today's EHPs understandably want to distance themselves from. But B4's recollections suggest that regulation was more complex and nuanced. His actions were maintaining apartheid, but they were often resisted by the public and businesses in the streets and the courts. Surveillance and control restricted freedoms but also provided B4 the opportunities to maintain and improve environmental health and enabled him to eventually transcend racial boundaries. Thus, after Hall (2012), B4's past work illustrates the role of the apartheid environmental health state as repressor and protector because his actions simultaneously reinforced and undermined its legitimacy and this supports the need for more historical research into EH regulation as recommended in section 9.8 below.

4.6.2 A neoliberal macroeconomic policy context

This section summarises the movement of South Africa's macroeconomic policy towards a more neoliberal model and how this has shaped the work of EHPs in different ways. No EHPs viewed their work in macroeconomic terms and, apart from their adherence to performance targets, there was no evidence of neoliberal preferences towards more persuasive regulatory approaches. However an emerging neoliberal policy rhetoric associating regulation with burdens on business was identified.

In 1994 the ANC's Reconstruction and Development Programme (RDP) set out an integrated and developmental framework in which the state was to be transformed to lead development and economic growth (Chipkin, 2002). The ANC was cautious about privatization given the historical role of business in reinforcing racial division; instead its RDP vision was that reconstruction, development and sustainable growth could be achieved by a leading state and direct public investment, a thriving private sector and a people-driven process involving all civil society (ANC, 1994). Environmental health infrastructure and services were integral to meeting the RDP's ten basic needs of the people, with a separate 'Environment' chapter calling for the environment to be integral to all decisions and for a review of historically weak and fragmented regulators (ANC, 1994). This chapter was removed from the final *White Paper on Reconstruction and Development* but the overall RDP vision remained (RSA, 1994). The new government also faced many problems in achieving the RDP consensus, including pressure from business for more export led (not RDP supply driven) growth and pressure from the unions frustrated by slow service delivery (Chipkin, 2002).

In 1996 the national RDP coordinating office was closed (Habib and Padayachee, 2000) and an alternative 'Growth, Employment and Redistribution' (GEAR) strategy proposed changing the state's role from leading to facilitating the conditions for development and economic growth (Chipkin, 2002). GEAR made no reference to the integration of environmental factors into macroeconomic planning, instead it proposed de-centralisation, more restrained and strategic government intervention and partnerships with non-state bodies and an expanding private sector (RSA, 1996). This could be achieved by reduced state spending, an accelerated program of privatization, deregulation and trade and industry liberalization (RSA, 1996). This change in the role of the state to 'steering, not rowing' (Osborne and Gaebler 1992) was also noted by Beall et al. in Johannesburg:

“...the initial statist conception of local government's task (one of *leading* development) was downgraded to one of *facilitating* development” (2002 p73, emphasis in original).

The transition from RDP to GEAR has been described as a transition from socialist to neoliberal development (Habib and Padayachee, 2000; Peet 2002). The explanations for this are complex, but Habib and Padayachee identify a change in the ANC's perception of the balance of political and economic power at the global and local levels that subordinated growth and development needs to those of the business community, international finance and foreign investment (2000). But this section now considers how this policy shift has influenced the CoJ.

Section 4.2.1 above introduced the CoJ and how its structure was shaped by the market inspired *iGoli 2002*, particularly the split between the ‘client’ administration and its various ‘contractors’ that include its EHPs. In her study of CoJ waste management utility Pikitup, Samson describes how strategic priorities characterised by cost minimisation and profit maximisation both assisted and further entrenched exploitative social relations within its workforce. In their analysis of the case of *Mazibuko & Others v. the City of Johannesburg & Others* Bond and Dugard (2008) also describe how similar strategic priorities at CoJ utility Johannesburg Water towards water demand management and cost recovery were judged contrary to the Constitutional rights of access (Section 27(1)(b)) of *Mazibuko & Others* to sufficient water. Further, Samson (2008) identifies the paradox of *iGoli 2002* which simultaneously created the uni-city of Johannesburg whilst shifting operational responsibility for many municipal functions outside the local state.

During fieldwork the author encountered no public mention of plans for the future privatization or outsourcing of EHPs at the CoJ or any other local authority in South Africa. This may be due to considerable uncertainties about government responsibilities for delivering environmental health services as explored in section 5.2.2 that, until resolved, would imperil any alternative model from the outset. But the fact that environmental health related services are well established amongst CoJ contractors and the emerging trend towards the privatization or outsourcing of local government environmental health services (Tombs 2016) in influential countries like the UK suggests these options require careful scrutiny. But this section now considers the influence of the CoJ’s neoliberal policies on individual EHPs.

No EHP identified themselves as a ‘contractor’ to their Department of Health ‘client’ but this is hardly surprising given their focus on local matters. However in accordance with Hood’s (1991) ‘new public management’ approaches their work was inherently results-oriented and shaped by performance targets concerned with monthly outputs (e.g. numbers of inspections, complaints, notices served) that EHPs met with few difficulties (see section 5.3.4 below). Further, these outputs broadly conformed to the pyramid distribution of regulatory activities. In their daily monitoring work EHPs were often detecting the potential failures of other CoJ contractors, but their attempts to rectify these were very mixed as explored in section 5.3.2 below.

There was no evidence that EHPs felt pressured by macro-economic policy to be more cooperative with business, but during fieldwork new policy developments suggested central government could become more hostile towards them. For example the new *Accelerated Shared Growth Initiative for South Africa* (ASGI-SA) complemented GEAR and aimed for higher, sustained and shared growth by initiatives including reform of the regulation ‘burdening’ small and medium businesses and more local government support for local economic development (RSA, 2006). ASGI-SA made no mention of which regulations were burdening business, but in

the UK local government EHPs and other regulators have long perceived a hostility from central government to their work via neoliberal arguments that it ‘burdens business’ and binds it with ‘red tape’ though little or no evidence is provided of this (Hawkins 2002; Tombs 2016). The final part of this section now considers how the local context can influence EHPs.

4.6.3 EH in Johannesburg and public and media attitudes to regulation

Chapter 1 summarised the environmental health challenges of South Africa and Johannesburg, but this section considers what EHPs themselves thought about these challenges and the public and media attitudes to their work. Here approaches across the entire regulatory pyramid in Figure 4.4 above were utilised by EHPs in response to this complex local context, but the emphasis towards more persuasive approaches remains. All the case EHPs had been born and brought up under apartheid and were well aware of the vast inequalities in their areas. For example most areas included affluent suburbs with the highest EH standards plus highly educated, vocal and demanding people who sometimes communicate via their lawyers:

“If you happen to get one [a rich complainant] they tell you how rich they are, how they can talk to their lawyer and you don’t have to communicate directly with them. So if you are not familiar with the Act and the Regulation they can shut you out... so when you come they don’t look at you as a professional, they just measure you concerning their wealth. It seems like you are too poor to come talk to them, “send someone else they said to me (laughing)!” (D1A interview pp14-5)

At the other extreme EHPs described people from low income areas with the worst environmental health who are the least vocal and sometimes will not say anything to them. When asked why this was their answers covered the aspects of poverty summarised in Figure 1.1 above, with particular emphasis on fears of eviction, their own failures as EHPs and the legacy of the powerless ‘apartheid mindset’. EHPs responded in many different ways including greater monitoring of poorer areas and more education and awareness raising activities but this was a persistent challenge to which this section now turns.

EHPs often commented on general improvements in their areas but feared these were not sustainable. For example D1B believed there was much less crime (e.g. car-jacking, rape) in some of her areas, but it remained a problem in others. F2B and others were concerned that drugs and prostitution were feeding wider problems like overcrowded housing that were spreading to neighbouring areas. F1C predicted that by next year his inner city area would have changed altogether for the worst, particularly due to migration which B4 also highlighted:

“Now the landlords of the people that stayed in these big houses... realised that whilst there’s money coming in they started subdividing the houses, getting people in, hence we have these overcrowding problems. Because now these houses were designed for families and we have forty people staying in a house designed for one family, and what happens to the infrastructure, blockages, problems of refuse removals, apart from the overcrowdings itself? Then also the neglect of the properties needing to be maintained... So problems become – MUCH BIGGER because of that” (B4 interview pp21-2).

Informal settlements were common and EHPs reported sightings of possible illegal settlements to the CoJ that were usually removed a week or two later but EHPs knew they would return soon and there was some sympathy for their plight, not least given the housing shortages. In the inner city EHPs described people moving in and out of their areas constantly, some shops constantly changing ownership whilst ‘business tourists’, as EHPs described them, stayed for very short periods (e.g. 1 week). In the townships EHPs remarked that some crèches keep closing and re-opening and they never know what they will find. The 2010 World Cup was only a few years away and was beginning to add to workloads via planning and license/permit applications and wider issues like the anticipated growth in informal food traders. Two case-EHPs (B4 & D1B) likened their work to constantly ‘putting out fires’ and this summarised well the general thoughts of EHPs about regulating Johannesburg, but the final part of this section explores public and media attitudes to their work.

EHPs generally thought their relations with the public were improving but everything was still new and neither EHPs nor the public were used to it. For example two senior managers questioned how well EHPs were adapting to working in the CoJ ‘uni-city’. The Region B EH Manager described “the challenge of changing, coming from an old White Jo’burg to an old ‘Black’ Soweto; you were working in very limited boundaries, but I don’t think we’ve passed that...” (Region B EH Manager interview p22). Similarly, the DD-EH had formerly worked for local authorities covering Sandton [an affluent suburb] and Soweto. In the former he had used punitive, ‘zero tolerance’ regulatory approaches, particularly for food trading and air quality but in Soweto his work mainly involved education and pollution control; the ‘uni-city’ challenge was to bring such different areas together under the same roof (DD-EH 10 April interview p2).

Changing public attitudes was an ongoing challenge, particularly in the townships:

“Our communities were used to apartheid for some time. This time the legislation was very prescriptive, blacks have... whites have... Everything came from the Government.

Now there are few complaints from the community and yet conditions remain unsatisfactory, even appalling” (D1 Operations Manager interview p2).

“... I usually tell them, compared to apartheid while you were born for like 60 years under oppression, suddenly you are free but I believe your mind is still born dead because there are so many things that you got used to doing a certain way. Things have changed on paper ... but they actually come slowly. So I’m thinking people got used to staying in dirty environments, there were no By-Laws, anybody could do whatever they want, whatever. So now you come in, the Council, and you’re telling them to paint their shop, you’re telling them to put in hand wash basins, nail brush, soap and they are like ‘Aha, you must be kidding me!’” (D1B interview pp38-9)

Understandably, EHPs regularly encountered the public’s distrust of them and the CoJ more generally. The more affluent expected high levels of services and were willing to complain but did not seem to have much faith in EHPs to sort out their problems. In poorer areas EHPs sometimes encountered public hostility to their work driven in part by fears that EHPs were oppressing them and could close their business down or get them evicted. Such fears were sometimes justified, for example EHPs sometimes used verbal threats of business closure to encourage compliance (see section 4.4.5 above) and EHPs knew - and felt uncomfortable - that their reports on unsafe buildings could be used to evict tenants (see section 7.6).

EHPs recognised the utility of the media for communicating their work and often asked them to cover projects and promotional activities. However the media rarely seemed interested unless there were serious and visible problems when EHPs could find themselves in the firing line:

“Let’s say there are blockages in the squatter camp, then they will go there to shoot, to put it in the first page, telling the people that the Councillor and the EHPs are not doing their work... maybe the blocked drain happens on Friday late then I need to come here on Monday, they will say... “the whole week it was like this and the health inspectors did nothing, and the councillors did nothing” (B2 interview pp46-7).

“...what happens is the newspapers and everybody will say ‘the environmental health of people in [my area] is put at risk. Who exposed them? It is the EHP of the area’” (F1B interview p47).

During fieldwork the author monitored the local and national newspapers and found that articles on the environmental health problems of Johannesburg appeared regularly, particularly when highlighted by senior politicians and policy makers including the Executive Mayor (Mashaba,

2007a), the President of South Africa (Brown, 2007) and the United Nations Special Rapporteur for Housing (Benjamin, 2007). The *Monitor* section of the national weekly *Mail and Guardian* consistently focused on the environmental health of the urban poor and how actors including local government and the courts sometimes made matters worse (e.g. Donnelly, 2007; Ismail, 2007). Such articles were mainly based on the experiences of poor people themselves, but important context was often provided by NGOs and academics, particularly those from the Centre for Applied Legal Studies of the University of the Witwatersrand.

Articles on local green initiatives featured CoJ organisations like Pikitup (Bangerezako, 2007) and complaints for higher service levels, the letters pages of one suburban newspaper featuring a complaint to Pikitup about weeds, long grass and poor maintenance of local parks and paths (Anonymous, 2007). But most newspaper coverage was directed towards more serious issues that B2 suspected were driven largely by the need to sell newspapers (B2 interview pp46-7), not bearing witness or holding people/organisations (including EHPs) to account. However, EHPs were clearly engaged because some of their office walls were decorated with articles covering their cases, particularly in housing. During fieldwork only one newspaper article identified by the author referred directly to CoJ EHPs when the front page of *City Vision* (see Appendix O) covered the eviction of a mother and her newborn:

“The chairperson of the [building] committee, John Sithole, said they received orders from the Johannesburg Council’s environmental health inspectors to renovate the building, and failure to do so would have resulted in a fine” (Mashaba 2007b p1).

The article mentioned other factors behind the eviction decision, including the mother’s precarious employment and accusations of tenant fraud, but it illustrates how easily EHPs can become caught up in complex cases by the media. In another example one anonymous EHP was furious following the Executive Mayor’s tour of his areas where “...residents live in appalling conditions without running water, lights or toilets” and “...shacks comprise mostly of unemployed people who will do anything, including crime, to keep their house fires burning” (Mashaba 2007a p1). In a furious response this EHP accused Mayor Masondo of knowing nothing about environmental health but he was clearly anticipating a hard time as a result.

4.7 Conclusions

The first part of Chapter 4 confirmed that the core elements required for regulating environmental health were in place at the CoJ. It began with an introduction to the governance model of responsive regulation by CoJ EHPs in Figure 4.1 created by this thesis before describing and explaining the organisation of the CoJ and its EHPs and their work. The chapter then used Figure 4.4 to explore their regulatory strategies before confirming the pyramidal

model of responsive regulation and exploring the proactive and reactive approaches used by EHPs. Most of this work continues to follow the traditional law enforcement pathway, but during these stages EHPs also act as the environmental health eyes and ears for other CoJ organisations and provincial government. As summarised in Figure 4.4, this traditional pathway also operates alongside a second pathway focused on environmental health projects and other promotional activities involving a wide range of actors, not least local people themselves.

The final section of Chapter 4 moved to the outer governance ring of Figure 4.1 above to consider how the regulatory context influences EHPs. Confronted by persistent and dynamic EH inequalities and a frequently hostile public and media, more persuasive regulatory approaches could help increase the public's EH knowledge and build better relations between the CoJ and the public. More punitive approaches risked damaging already fragile relationships and were attracting adverse media coverage, but there was also clearly a need for them to try to maintain and improve standards in all areas and to protect the most vulnerable. Neoliberal policies were shaping the work of EHPs in many ways, but there was not yet any evidence that EHPs themselves felt pressured towards being more cooperative with business though new policy suggested this could change. Lastly, Chapter 4 suggests the utility of the model of governance in Figure 4.1 for identifying early on how power circulates between the many regulatory actors. The next chapter explores how legal and organisational factors can influence regulation.

Chapter 5 Legal and organisational factors

5.1 Introduction

The model of governance in Figure 4.1 explores how legal and then organisational factors can influence how EHPs regulate environmental health. The first section here describes and analyses the legal framework for EH regulation at the CoJ and explores the uncertainties that characterise it. The second section considers how organisational factors within the CoJ itself shape the work of its EHPs and it is argued that legal and organisational factors frequently favour more persuasive activities towards the base of the regulatory pyramid in Figure 4.4.

5.2 The legal framework for environmental health regulation in the CoJ

During the transition to democracy environmental health law has been through a continual process of review. This section is focused on main characteristics of the law and begins by reviewing the developmental framework for environmental health set out in the *Constitution* and subordinate legislation. The section then explores the uncertainties that characterise the law, beginning with the definition of municipal health services before analysing the criminality of environmental health offending and exploring the wider uncertainties surrounding the role of EHPs. Together, it is argued, these give local government EHPs an uncertain legal mandate that frequently favours persuasive approaches towards the base of the regulatory pyramid.

5.2.1 Rights and reasonableness: the *Constitutional* framework for environmental health

The *Constitution* shapes the legal framework for environmental health regulation by defining the environmental health rights of South Africans and the organisational structures and procedures for EH regulation across the three spheres of government. This section begins with an overview of the developmental local government framework for delivering these rights that is inherently ‘reasonable’ and is extended through a continual emphasis on reasonableness in environmental health law that remains integral to this developmental mandate.

The *Constitution* is the highest law and was enacted in December 1996 after nearly two years of consultation and was informed by the “largest public participation programme” in South Africa and represents “...the collective wisdom of the South African people and has been arrived at by general agreement” (Preamble). The *Constitution* created local government across the whole of South Africa for the first time (Section 151 (1)) in three different forms:

- 6 Category A or metropolitan municipalities (including the CoJ)
- 242 Category B or local municipalities
- 46 Category C or district municipalities

The *Constitution* recognises local government as a distinctive sphere of government but one that is simultaneously equal, interdependent and interrelated to the national and provincial spheres of government (Section 40 (1)). These relationships are enshrined by the principles of co-operative government and include a duty on all spheres to secure the well-being of the people (Section 41(1) (b)) and five more specific objectives for a local government committed to:

- provide democratic and accountable government for local communities;
- ensure the provision of services to communities in a sustainable manner;
- promote social and economic development;
- promote a safe and healthy environment; and
- encourage the involvement of communities and community organisations in the matters of local government (Section 152. (1))

In 1998 this mandate was extended by the *White Paper on Local Government* and its vision for a developmental local government “committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs and improve the quality of their lives” (RSA, 1998). This vision extended to metropolitan municipalities like the CoJ by requiring that metropolitan development is socially just, equitable and integrated spatially and economically (RSA, 1998). Measures to realize this included a focus on local economic development and more developmental service delivery in accordance with the ANC’s original Reconstruction and Development Programme (see Section 4.6.2 above) though Beall et al. (2002) interpret this considerable extension of responsibilities on local government as a form of ‘decentralisation by stealth’.

The Bill of Rights of the *Constitution* also sets out the environmental health rights of South Africans. Most importantly the fundamental right “to an environment that is not harmful to their health or well-being” (Section 24a.) operates alongside the socioeconomic right “to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:

- i. prevent pollution and ecological degradation;
- ii. promote conservation; and
- iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development” (Section 24b.)

Other socioeconomic environmental health rights include the right to have access to adequate housing (Section 26 (1)) and access to health care services, sufficient food and water and social

security (Section 27 (1)). Distinct rights for every child include the right to basic nutrition, shelter, health care services and social services (Section 28 (1c)). The *Constitution* also shapes how the three spheres of government should deliver these rights by including the fundamental rights of everyone to:

- equality before the law and equal protection and benefit of the law (Section 9 (1));
- dignity and to have this respected and protected (Section 10); and
- administrative action that is lawful, reasonable and procedurally fair (Section 33 (1)).

These rights are further enacted in subordinate law. For example the *Local Government: Municipal Systems Act, 2000* requires municipalities to take measures to prevent corruption in their administration (Section 6. (2c)). Under the *National Health Act, 2003* a ‘health officer’ may enter any premises, excluding a private dwelling, at any reasonable time (Section 82 (1)). Further, if the health officer has ‘reasonable grounds’ to believe that any condition constitutes a violation of the *Constitutional* right to an environment that is not harmful to their health or well-being (Section 24 (a)), or pollution detrimental to health, or is causing/is likely to cause a health nuisance then the health officer must investigate such condition (Section 83 (1)).

Reasonableness also shapes how other legislation should be delivered. In the *Atmospheric Pollution Prevention Act, 1965* for example, if a person can demonstrate they used the 'best practicable means' to the prevention the escape of noxious or offensive gases or the dispersal or suspension of dust in the atmosphere or the emission of fumes by vehicles then they are exempt from criminal liability. EHPs must therefore consider factors including ‘local conditions and circumstances, the prevailing extent of technical knowledge and the cost likely to be involved’ to protect the public from the gases, dust or fumes (Section 1) that could arise from the activities regulated by this Act. The principle of ‘best practicable means’ originates from UK legislation but has been criticised for failing to define what is reasonable, particularly the balance between acceptable business costs and unacceptable dangers to public health (Gunningham 1974; Hutter, 1988) and investigations into South African industries have raised similar concerns (Davis et al. 1997; Leonard and Pelling 2010).

At the CoJ reasonableness has also been written into the principles for delivering its *Public Health By-laws* but there is no further guidance there for EHPs on how to achieve this:

- “In dealing with matters affecting public health the Council must -
- (a) Adopt a cautious and risk-averse approach;

- (b) Prioritise the collective interests of the people of the municipal area, and of South Africa, over the interests of any specific interest group or sector of society;
- (c) Take account of historic inequalities in the management and regulation of activities that may have an adverse impact on public health and redress these inequalities in an equitable and non-discriminatory manner;
- (d) Adopt a long-term perspective that takes account of the interests of future generations; and
- (e) Take account of, and wherever possible without compromising public health, minimise any adverse effects on other living organisms and ecosystems” (Chapter 2 Section 3 (6))

In summary, CoJ EHPs have a wide ranging *Constitutional* mandate for their work and a duty to act reasonably but there are few clues in the law to guide EHPs as to how they should regulate environmental health. The pyramid model in Figure 4.4 could help EHPs to navigate this uncertain legal mandate but this section ends by analysing the national frameworks for public service delivery and environmental health policy that complement the law and sometimes encourage EHPs towards more persuasive regulatory approaches.

In 1997 the *White Paper on Transforming Public Service Delivery* sets eight *Batho Pele (People First)* principles for delivering public services that include consultation with citizens (1), equal access to services (3), treating citizens with courtesy (4), providing information about services (5), openness and transparency (6) and accountability (7) (RSA, 1997b). Whilst these principles do not preclude more punitive approaches, the greater emphasis on cooperation, education and negotiation that characterise persuasive approaches arguably makes them more ‘Batho Pele’. Chapter 11 of the 1997 *White Paper for the Transformation of the Health System in South Africa* focuses on environmental health and is structured around five developmental principles:

- Every South African has the right to a living and working environment which is not detrimental to his/her health and well-being.
- All persons should have access to knowledge on environmental health matters and the services available to them.
- Environmental health services should be accessible, acceptable, affordable and equitable. They must be implemented with the active participation of the communities.
- Environmental health services should contribute positively towards sustainable physical and socio-economic development.
- The establishment of effective environmental health surveillance is essential to determine whether or not the services are functional and effective and have a positive health impact (RSA, 1997a).

Two points further articulate this environmental health vision. First, alongside its Constitutional first principle it acknowledges that environmental health is a shared responsibility; here the environmental health sector itself is responsible for providing accessible services and supporting communities in managing their environmental health risks, but individuals remain ultimately responsible for maintaining a healthy environment (Chapter 11.1.1(d), RSA, 1997a). Second, the following statement under the heading ‘environmental health legislation’ is significant:

“A community development rather than a law enforced approach will be followed in creating environmental conditions conducive to good health. Environmental health legislation will comply with the requirements contained in the Interim Constitution's Bill of Rights and will be based on integrated, appropriate and uniformly applicable legislation.” (Chapter 11.1.1(e) RSA, 1997 - Note: errors in original).

This preference was reinforced during the development of the *National Environmental Health Policy for South Africa*. In 1996 its first draft called on EHPs to adopt community development approaches and envisaged them as educators and facilitators, monitoring and responding to community needs and demands and enabling access to essential local authority services (Eales et al. 2002). By 2004 the third draft described post-1994 services as developmental, with education, cooperation and community participation central to its ‘philosophy of environmental health’ (NDoH, 2004). The final draft was published on 4 December 2013 as a broad guide and framework for the effective implementation of Environmental Health Services in South Africa. Its key principles encompass the entire regulatory pyramid but with continued preference for persuasive activities. For example its first objective is to “promote a legal and regulatory framework that ensures mandatory but also supports voluntary compliance...” (NDoH, 2013 p14). Its principles include an emphasis on voluntary compliance by education:

- “Although it's a requirement for compliance to national policies and standards on environment and health by importers, producers, manufacturers, retailers and communities, environmental health strategies should strike an appropriate balance between promotion and education and law enforcement.
- Education must be used as a vital tool of building capacity for all stakeholders /role players, to be able to attain voluntary compliance” (NDoH, 2013 p16).

This consistent national policy preference for regulation by activities towards the base of the regulatory pyramid sends a clearer message to EHPs about how to regulate, but Chapter 5 now explores the legal uncertainties surrounding the very definition of their work.

5.2.2 What are municipal health services?

This section argues that the legal framework for environmental health regulation via the delivery of municipal health services is also characterised by uncertainty that potentially further weakens the mandate of EHPs. The *Constitution* lists 83 areas of legislative competence of national, provincial and local government in two schedules (Schedules 4 and 5). Environmental health services at the CoJ reside mainly as a local government competence within Schedule 4B municipal health services but environmental health is relevant to at least 71 of these 83 competencies and it is argued in section 5.2.8 below that this fragmentation of EH responsibilities further weakens the mandate of local government EHPs. During fieldwork uncertainty also surrounded the definition of municipal health services. Section 156 (1) of the *Constitution* mandates municipalities to deliver municipal health services, but metropolitan municipalities were not given responsibility for delivering these services until the promulgation of the *Municipal Structures Act, 1998* from the 1 February 1999. Further, municipal health services were only defined in 2006, during pilot fieldwork, as those services including:

- water quality monitoring;
- food control;
- waste management;
- the health surveillance of premises;
- surveillance and prevention of communicable diseases (excluding immunizations);
- vector control;
- environmental pollution control;
- disposal of the dead; and
- chemical safety *(National Health Act, 2003 (Section 1))*

No further definition of these nine areas is provided but the Act excludes port health, malaria control and the control of hazardous substances which have become provincial government functions (Agenbag and Balfour-Kaipa 2008).

Concern about these uncertainties was widespread during fieldwork. In one survey Gauteng EHPs welcomed how its breadth avoided excluding services but remained confused about the scope of each function, who was responsible for delivery (i.e. provincial or local government, if local government: metropolitan, district or local municipality?) and resources (Haynes, 2005). Some established services including the licensing of premises and dogs, control of liquor establishments, regulation of accommodation establishments and abattoirs and the care and burial of animals were also omitted from the definition above (Balfour-Kaipa, 2007).

To provide more certainty the Professional Board for EHPs of the HPCSA attempted to define the scope of the work of EHPs (see Appendix P) but in 2006 this was little more than a long list of areas and sectors that ended with a catch all sentence concerning “[a]ny other matter incidental to or of Environmental Health significance, which, if unattended would compromise the quality of public and Environmental Health” (HPCSA, 2006a). At the CoJ the DD-EH confirmed that the Gauteng branch of the South African Local Government Association (SALGA) had pragmatically adopted a definition of municipal health services as environmental health and therefore the CoJ were delivering the nine functional areas above whilst continuing to regulate missing areas (e.g. accommodation establishments) and monitoring provincial government premises including schools, prisons and clinics (see section 5.3.2 below).

5.2.3 Minimum legal standards and the inevitability of discretion

Environmental health regulation by the delivery of municipal health services by EHPs and others (e.g. licensing officers, EH Assistants) is enabled by a wide range of legislation as listed in the bibliography of this thesis. These laws define minimum standards and give EHPs and others the powers to regulate but it is argued here that their uncertainties confer considerable discretion on those responsible for bringing them to life. Some laws date back to the apartheid era but did not contain any race-based standards. During the pilot study in 2006 however the EHPs of Ekurhuleni Metropolitan Municipality were still enforcing by-laws that included race based standards, though these provisions were (obviously) not being enforced and their new by-laws were promulgated in 2007.

Hawkins and Thomas argue that where regulatory goals are clearly defined and unambiguous they are likely to be enforced more stringently (1984) but environmental health law has been characterised by both broad and prescriptive legal standards since Victorian times (Crook, 2007; Wilson, 1881) and this continues in South Africa. Indeed the minimum legal standards for environmental health remained largely prescriptive and included requirements for permits/licenses that date back to the British colonial era (Rogerson, 1986). For example the *Regulations governing general hygiene requirements for food premises and the transport of food (R.918 of 30 July 1999)* (hereafter the ‘R918’ as EHPs call them) prohibit certain listed activities, prescribe wide ranging standards for food premises, equipment and handlers and then require a permit called a Certificate of Acceptability (CoA) from the local authority in order to operate. Similarly, Chapter 14 of the *CoJ Public Health By-laws* defines the minimum space standards and facilities (e.g. toilets, hand washing, kitchen etc) for child care facilities and a permit to operate. The CoA was free, but applications for by-law permits began with the full payment of fees. Standard application forms operated for all permits and collected details about the applicant and the business itself before requesting descriptions of the operations undertaken there. Premises were then subject to inspection by EHPs and sometimes other CoJ organisations

(e.g. Development Planning, Community Development) and once all were happy permits were granted and this information maintained in the premises files stored by each EHP.

Applications for all permits/licenses also included an exemption process for premises that might not fully comply with environmental health conditions. Applicants were required to apply in writing detailing their grounds for exemption provided that no health nuisance or other hazards exist, that the exemption complies with the standards of other CoJ organisations and that the EHP and their Managers are in agreement.

The separate provisions of the *Businesses Act (Act 71 of 1991)* also meant that many businesses required a business license to trade. The application process was similar to that summarised above for environmental health related permits but included a one off application fee (R145 informal premises, R450 formal premises in 2007). As for environmental health offences, failure to comply with these requirements was also punishable by sanctions. These licenses and others covering areas like the sale of liquor were usually enforced by licensing officers based within the regional environmental health offices. Whilst not within the direct remit of EHPs, the work of licensing officers often helped EHPs discover new or temporary premises (e.g. events, festivals) that were then subject to regulation. The permit/licensing process was also being exploited by corrupt EHPs and criminals impersonating them (see section 7.8 below).

The prescriptive minimum standards summarised above also co-exist alongside more general legal standards framed by terms like ‘adequate’ and ‘reasonable’. For example under R918 strict liability standards include the requirement that a person in charge of food premises ensures that:

- (a) effective measures are taken to eliminate flies, other insects, rodents or vermin on the food premises;
- (b) any person working on the food premises is adequately trained in food hygiene by an inspector or any other suitable person (Section 10)

Similarly, Chapter 14 of the *CoJ Public Health By-laws* requires that child care services with outdoor play areas must:

- (a) be free of any excavations, steps, projections, levels or any surface which may adversely impact on the health and safety of children using that area;
- (b) provide a minimum outdoor play area of 2 m² per child;
- (c) have an adequate means of enclosure and a lockable gate to prevent a child leaving the premises on his or her own and to prevent the entrance of any animal and unauthorised person;

What constitutes ‘effective’, ‘adequate’ or ‘free’ in the strict liability examples above effectively saves the law from deciding how to resolve the dilemmas created by competing interests but shifts this responsibility to EHPs who were found to spend considerable time interpreting the law and drawing on other resources including their colleagues and managers. By linking the law to the offence Hawkins argues that discretion gives the law its very substance and life (1984), but whether or not discretion is problematic remains the subject of debate. This crudely divides between those who think broader standards like those above enable more flexible interpretations by skilled professionals operating in dynamic contexts and others who maintain discretion is necessary but should be minimised and subject to predetermined rules to ensure accountability and guard against injustice (Hutter, 1988). Section 5.3 below explores why the case-EHPs leaned towards the latter argument.

Environmental health laws based on enforced self-regulation included the *Occupational Health And Safety Act (Act 85 of 1993)* but were not being enforced by CoJ EHPs during fieldwork as they fall outside the remit of municipal health services. These standards compel businesses to devise their own rules for conducting their activities but within legal parameters and subject to regulatory approval (Braithwaite, 1982) and typically take the form of risk based self-management approaches. However their emergence could create further discretion for EHPs given the uncertainties of risk based regulation identified in section 2.4.3 above and the existence of draft legislation suggested a change was imminent that could weaken local government EHPs. The draft *Regulations Relating to the Application Of The Hazard Analysis And Critical Control Point (HACCP) System (R494 of 26 April 2002)* require food business owners to identify, evaluate and controls hazards significant to food safety but compliance would be established by ‘external auditors’, not local government EHPs.

The regulation of the informal sector created further legal uncertainties because minimum legal environmental health standards were all based on formal premises. The challenge for EHPs was adapting them to the informal sector, as explored in section 7.7 below. Other legal uncertainties include the regulation of continuous behaviours (e.g. the management of activities/processes) and long term cases (e.g. housing). Together these factors confer further discretion on CoJ EHPs, but this chapter now explores how the criminality of environmental health law creates further uncertainties.

5.2.4 The uncertain criminality of environmental health offences

This section starts by returning to the historical context to consider how the criminalisation of environmental health offending during colonialism and apartheid helped sustain these systems to the detriment of most South Africans. The section then explores the criminality of environmental health law since democracy and how strict liability differentiates environmental

health offences from more traditional crimes, though for EHPs themselves moral culpability remains important. The section ends with recognition of the problems for EHPs in regulating complex organisations.

Before democracy the criminalisation of environmental health was integral to colonial and apartheid policy. Racially based environmental health laws assisted colonial local authorities to segregate and control urban areas (Parnell, 1993 & 2002; Swanson, 1977) and avoid the provision of environmental health services to urban slums (Parnell, 1993) and emerging townships (Proctor, 1986). After independence from Britain in 1948 these systems were reinforced with urban areas ‘run by whites for whites’ (Beall et al. 2000a) and their local authorities delivering the highest levels of environmental health service (de Visser, 2005). Simultaneously the environmental health of other areas continued to deteriorate under separate local government structures, or none at all, and inadequate revenues for service provision (RSA, 1998). Further, heavily polluting state owned industries were largely exempted from environmental health law (Steyn, 2008) but regulators also failed for reasons including fragmented responsibilities, poor resources (Petrie et al 1992) and a lack of political will (Davies et al. 1997; Rabie and Fuggle 1992), notably the prioritization of economic development over environmental health (Steyn, 2008).

Section 6.8 below explores how the case-EHPs themselves questioned the criminality of environmental health offences when compared to more ‘traditional’ crimes. Sometimes these were prompted by South Africa’s many crime problems and their own experiences. The case-EHPs recognized that their work fell within the criminal law and more punitive law enforcement approaches were sometimes necessary. But their own views were also powerful, particularly that most offenders were not criminally motivated but did so because they lacked environmental health knowledge. In response they required education and other more persuasive approaches towards the bottom of the regulatory pyramid, but this section now returns to the questions surrounding strict liability.

Most environmental health laws enforced by CoJ EHPs incorporate strict liability offences prescribing the minimum environmental health standards for businesses (see two section 5.2.3 examples above). Some offences still incorporate *mens rea*, but these mainly relate to how standards are administered by regulatory officials. For example the *National Health Act, 2003* states that a person is guilty of an offence if they obstruct or hinder a health officer, or refuse to provide them with information or knowingly provide them with false or misleading information (Section 89 (1)). Some defences against strict liability offences also incorporate *mens rea* and could provide what Carson describes as an “escape route for the blameless” (1970a p397). For example in the *Foodstuffs, Cosmetics and Disinfectants Act, 1972* an employer can be convicted

for the offence of an employee or others unless he proves 'that he took all reasonable measures to prevent an act or omission of the nature in question' (Section 8.1.b.).

There was some evidence to support Norrie's (2001) argument that the abilities of the criminal law to regulate business activities are limited by the challenge of establishing corporate criminal liability. The case-EHPs admitted it sometimes took them months, even years, to establish who owned premises or buildings they were investigating because they were hidden behind complex corporate structures. Case-EHP B4 enjoyed the detective work involved, but one anonymous EHP commented that he did not enjoy this and was therefore reluctant to take on potentially complex and long term cases.

Section 7.6 below describes how moral culpability remains an important consideration in the decision making of EHPs but Lazarus et al. (1997) question whether strict liability offences are Constitutional. They argue that strict liability offences might violate the fundamental right to a fair trial (Section 35 (3)) and thereby fail constitutional challenge unless provisions can be put in place to minimise the risk of convicting innocent people but the author has not found any examples of this being tested in the South African courts.

There was also emerging evidence in case law that the uncertain criminality of environmental health law was being reinforced by conflict with Constitutional rights, particularly in two landmark cases where the regulation of informal housing was making public health worse. Here Huchzermeyer (2004) argues that there is a need to redefine problems not as a 'contravention of laws' but towards recognition of a lack of protection from the breaches of constitutional rights. In *Government of the Republic of South Africa v. Grootboom, 2001* for example Irene Grootboom and her community moved from an informal settlement onto private land intended for low cost housing but were then evicted and forced to live under plastic sheeting on a nearby sports field. Grootboom was successful in asking the Constitutional Court for the provision of adequate shelter/housing until permanent accommodation was available, but the Constitutional Court also ruled that State housing programmes were not reasonable because they were not providing for those in desperate need.

Shortly after fieldwork the case *Occupiers of 51 Olivia Road v City of Johannesburg, CCT 24/07, Judgment of 15 February 2008* began following a series of emergency applications to the Witwatersrand High Court by the CoJ to evict over 300 people from six bad buildings in inner-city Johannesburg and is explored by Ray (2008). This was part of a wider regeneration strategy and in accordance with the CoJ's powers under the *National Building Regulations and Building Standards Act, 1977* to evict tenants from buildings judged by EHPs (and others) to be unsafe or unhealthy. The residents - assisted by the Centre on Housing Rights and Evictions (COHRE, an

international NGO) and local academics from the Centre for Applied Legal Studies of the University of the Witwatersrand (CALS) - initially successfully opposed these applications on several legal grounds including the CoJ's Constitutional right to provide access to adequate housing and the failure of its housing program to comply with its constitutional and statutory duties.

These judgements were partially overturned in a series of appeals, but the CoJ's inner city eviction programme was also suspended and further concessions by the CoJ included improving the environmental health of existing bad buildings. In its final decision the Court required a process of engagement to be followed whereby governments must consult with residents affected by policy decisions that may involve eviction to ensure their socioeconomic rights are protected and publicly report on this process. It was too soon for Ray (2008) to comment on its success and the final decision did not reject the need for more punitive interventions in future cases like this, but its endorsement of persuasive regulatory approaches that engage local government and civil society in working through these complex problems is significant.

In summary therefore the criminality of environmental health offences is made uncertain by South Africa's historical legacy and the differentiation of regulatory offences from more traditional crimes as identified by EHPs themselves and the widespread use of strict liability. EHPs were also busy trying to untangle attempts to assimilate the criminal liability of individual business and property owners within complex organisations. Lastly, two case law judgments illustrate the considerable tensions between the criminal law and the rights of the most vulnerable South Africans. Together these uncertainties potentially make more punitive actions less likely but this chapter now considers other aspects of the law that could further encourage more persuasive activities towards the base of the regulatory pyramid.

5.2.5 The variable powers of EHPs

The regulatory powers of local government EHPs are considerable and wide ranging. Section 334 of the *Criminal Procedure Act, 1977* authorises the Minister of Justice and Constitutional Development to confer on local authorities like the CoJ the power to appoint EHPs as Peace Officers to regulate environmental health. The *National Health Act, 2003* authorises EHPs to enter any premises, excluding a private dwelling, at any reasonable time (Section 82 (1)) and it is an offence to obstruct or mislead EHPs, as health officers, in the conduct of their work (Section 89 (1)). Accounts from late Victorian Britain when such powers were first enacted describe widespread opposition to this expansion of the intervention of EHPs into formerly private spaces (Crook, 2007) and it was not uncommon for CoJ EHPs to be obstructed in their work but here the individual's rights to privacy are overridden by concerns towards protecting public health.

But after Hutter (1988) the powers of CoJ EHPs can also be described as ‘variable’ for two reasons. The legal right of access to a business does not automatically infer compliance with the law, for example most food premises observed had facilities like wash hand basins but food handlers were rarely seen washing their hands. Second, CoJ EHPs sometimes had little or no powers to regulate environmental health in areas that are not their responsibility and these included informal settlements, premises owned by the CoJ itself and those that were the responsibility of other spheres of government (e.g. schools, prisons). But this chapter now considers why the sanctions available for offences could make more punitive actions less likely.

5.2.6 Sanctions for environmental health offences

The discretion of CoJ EHPs extends to the application of increasingly punitive sanctions towards the top of the regulatory pyramid. Section 6.9 below describes how the case-EHPs generally perceive the role of criminal sanctions more as a tool towards legal compliance than to punish offenders, but the sanctions available are inherently problematic for EHPs for various reasons. The maximum penalties for offences are set out in legislation or in clauses explaining that penalties will be determined by the criminal justice system. During fieldwork the CoJ actually published the fines available for offences on its website and these are summarised in Table 5.1 below.

Table 5.1 Maximum sanctions available to CoJ EHPs and/or the courts in 2007

Law	Maximum sanctions
<i>Health Act 1977</i>	R1500; imprisonment not exceeding 2 years; or both
<i>Tobacco Products Control Act 1993</i>	R1500
<i>Regulations governing general hygiene requirements for food premises and the transport of food (R 918, July 1999)</i>	R500
<i>Noise Control Regulations of Gauteng 1998</i>	R1500
<i>Public Health By-laws 2004</i>	R1000

Sanctions for multiple offences during the same visit were not uncommon, EHPs recalling cases of fines/summons totalling R5000 for example, but for larger businesses such financial penalties were unlikely to deter offending. Indeed, CoJ EHPs were often reluctant to sanction more affluent offenders for fear of undermining their authority (see section 6.9 below). The threat of imprisonment could be more effective, but the author found no evidence of any cases in Johannesburg of imprisonment for environmental health offences though the *National Health Act, 2003* was gradually repealing the *Health Act, 1977* and increasing the maximum period for

imprisonment from two to five years. Other sanctions including the prohibition of activities, the closure of premises and the withdrawal of licenses/permits were available but most case-EHPs had little or no experience of them though their managers were using them and EHPs were waiting for more guidance on these more alternatives to the fine/summons.

At the other extreme in 2007 around 57% of South Africans were considered poor and earned less than R458 per capita per month (SSA 2014) and for this majority such financial sanctions could be unaffordable. Other sanctions including prohibitions (e.g. evictions), the withdrawal of licenses/permits and criminal convictions could also have grave implications for their livelihoods and those of their dependants. However the case-EHPs were sometimes willing to sanction the poor despite being well aware of the consequences as explored in Chapter 7 below, particularly section 7.7.

5.2.7 The uncertain role of the local government EHP

The precise role of local government EHPs is not clearly defined in law and this section identifies an emphasis towards persuasive regulatory approaches. The *Health Professions Act, 1974* requires EHPs to register each year with the Board for EHPs of the HPCSA and to confine themselves to practicing in the field of environmental health (Annexure 4 (a)) but in 2007 this field was only defined in the Board's *Competency requirements and Scope of Profession of Environmental Health Practitioners* (see Appendix O). This comprised a long list of so-called 'matters' relevant to EHPs, but no detail on how EHPs should work. Further, the mission of the Board includes "[p]romoting the principle of excellent professional practice by ensuring ongoing professional competence" (HPCSA, 2006b) but no guidance on what excellent or competent practice might look like.

In 2007 the role of South African EHPs was better articulated in the *White Paper for the Transformation of the Health System in South Africa* and the *National Environmental Health Policies* reviewed in section 5.2.1 above. These identified the need for approaches across the whole regulatory pyramid but expressed a clear preference towards persuasive approaches. When asked to describe their role most case-EHPs simply recited the nine areas that define municipal health services, as reviewed in section 5.2.2 above, before describing the typical premises and complaints they encounter plus a caveat along the lines of "anything pertaining to public health" (B4 interview p2). All the case-EHPs acknowledged their work as law enforcers but considered their primary role to be more about persuasion than punishment. For example EHPs typically described themselves as educators and advisors, persuading and awareness raising, protecting people and improving their lives as explored in section 6.2 below.

In the UK Hutter (1988) suggests that the gradual development of local government environmental health 'more by chance than design' could explain why their legal mandate is so broad, complex and ill defined. More recent historical work provides some support for this argument, particularly Crook's (2007) exploration of the myriad factors that drove the expansion of the law and the role of British EHPs from the late Victorian period. South Africa's historical context suggests this expansion was more deliberate given the role of EHPs in maintaining and expanding the colonial and apartheid systems as summarised in section 4.6.1 above. Since democracy environmental health law and policy have been through a process of transition as described in section 5.2.1 above but this is a gradual process and in 2007 CoJ EHPs raised important concerns about the law and its suitability for regulating Johannesburg's environmental health that are covered in Chapters 6 and 7 below.

5.2.8 The statutory position of EHPs

Legal responsibilities for environmental health policy are fragmented across national, provincial and local government. In theory this shouldn't be a problem given that the *Constitution* designates all three spheres of government as equal and interdependent and obliges them to cooperate with each other (Sections 40 & 41) but studies suggest the national policy influence of EHPs is limited. The Environmental Health Directorate of the National Department of Health has responsibility for policy making, coordination and support for provincial and local government EHPs (NDoH, 2006). But this is inherently difficult when responsibilities cut across so many government departments as summarised following document analysis by the author in Table 5.2 below. Senior EHPs in this study (see section 6.3 below) and others (Haynes, 2005) voiced concerns about the lack of national leadership (Haynes, 2005) exacerbated by extended periods without a National Director of Environmental Health in post (Agenbag, 2006). During fieldwork a spokesman for the newly appointed National Director apologised to CoJ EHPs for their inactivity but sought to reassure them of future support (Murdoch in Nzo 0005Obs/Central p9).

In 2007 the Board for EHPs of the HPCSA and the South African Institute of Environmental Health (SAIEH) were trying to influence national policy makers but by 2013 it was clear that they and the National Director of Environmental Health, by then an EHP and former secretary of the SAIEH, were becoming more established and successful advocates for EHPs but this is explored further in section 6.3 below.

Table 5.2 National and provincial government Departments with EH responsibilities

National department	Scope of EH responsibilities
Environmental Affairs and Tourism	Chemicals and waste management policy Environmental advisory services & programmes Climate change and air quality policy Regulation via Environmental Management Inspectorate
Housing	Housing and sustainable human settlements
Labour	Regulation of occupational health and safety by Labour inspectors
Minerals and Energy	Regulation of mine health and safety. Environmental management of mines and other energy sources.
Trade and Industry	EH standards policy – e.g. South African Bureau of Standards
Transport	Regulation of transport safety
Water Affairs and Forestry	Water & sanitation policy Water resources management
Gauteng Departments	Scope of EH responsibilities
Agriculture, Conservation and Environment	Waste management, air quality and environmental management Regulation via Environmental Management Inspectorate
Community Safety	Projects related to safety in schools and communities including alcohol, drugs
Education	Provision of school meals (inc. nutrition & food safety)
Health - Environmental Health Services	Regulatory functions - covering provincial premises, port health, control of communicable diseases, control of hazardous substances, malaria control, environmental health sampling (e.g. food, water) Co-ordination functions – overseeing activities of Gauteng local government, including the CoJ.
Health – wider public health	Delivery of primary health care services (inc. HIV/AIDS and TB) across hospitals, clinics and in the community.
Human Settlements	Housing and sustainable human settlements in co-ordination with local government
Infrastructure Development	Development and maintenance of provincial environmental health related buildings and infrastructure
Roads and Transport	Sustainable transport policy
Social Development	EH related services for vulnerable groups (e.g. disabled, elderly, those affected by HIV/AIDS)

In the CoJ itself fragmentation and duplication in the delivery of environmental health services were challenges identified in its Department of Health Annual Report that required the “attention of top management” and the appropriate “alignment of organisational structures” (CoJ DoH 2006b p36). In South African local government environmental health departments are still the norm but in UK local government they have become increasingly rare with these services delivered by other departments (e.g. Housing) and/or combined with other services

(e.g. Trading standards, health education) into so-called ‘regulatory services’ (Burke et al. 2002) or in a few cases outsourced to the private sector (Tombs 2016). However time will tell whether the transition to municipal health services could result in the gradual loss of distinctive environmental health departments.

For EHPs themselves the *Health Professions Act, 1974* provides an important statutory basis for their work that requires them to register annually with the Board for EHPs of the HPCSA to practice environmental health (Annexure 4 (a)). During fieldwork new requirements for Continuous Professional Development were being developed but CoJ EHPs also thought the HPCSA could do more to promote their work. Section 6.3 below also explores why CoJ EHPs felt threatened by the re-emergence of Environmental Health Assistants and the new post of Environmental Management Inspector focused on environmental pollution control and based in Departments in all three spheres of government. There was a legal basis for these fears because most laws do not specify who is responsible for their enforcement and refer instead to general terms like ‘inspector’, ‘health inspector’ or ‘authorised person’. The CoJ *Public Health By-laws, 2004* specifically refer to HPCSA registered Environmental Health Officers/Practitioners for certain tasks, but Chapter 1. 1(1) also refers to ‘authorised’ officials. Therefore if the CoJ authorised Environmental Health Assistants or Environmental Management Inspectors in the future to enforce these By-laws there might be little EHPs can do.

In 2007 responsibility for the delivery of municipal health services remained, by definition, within local government. But EHPs themselves were increasingly working for other local government departments, including the CoJ Department of Environment, in provincial and national government and the private sector and most case-EHPs had also worked in at least one of these areas before joining the CoJ. The fragmented nature of environmental health regulation and the continued influence of neoliberal policies on local government (see Section 4.6.2 above) suggest that in the future EHPs could find themselves working in far more centralised or privatised municipal health services.

In summary, section 5.2 began by describing the developmental framework for environmental health in the *Constitution* and subordinate legislation before exploring the potential uncertainties that cut across environmental health law. Together, it is argued, these create a legal mandate for local government EHPs that is far from certain and frequently favours more persuasive approaches towards the base of the regulatory pyramid. But this chapter now explores the next part of Figure 4.1, how organisational factors influence EHPs.

5.3 Organisational factors

The section starts by reviewing the strategic framework of the CoJ and its implications for regulation before exploring their monitoring work for other CoJ organisations and provincial government. The section then analyses four ways in which the CoJ seeks to control their daily work. This starts by considering relations between EHPs themselves and their Managers and the influence of performance management targets before considering how local politicians and resources can shape regulation. Together these organisational factors influence the work of EHPs across the regulatory pyramid, but once again the emphasis is frequently towards persuasive activities (e.g. education, advice, negotiation) around its base.

5.3.1 The strategic developmental framework of the CoJ and EH

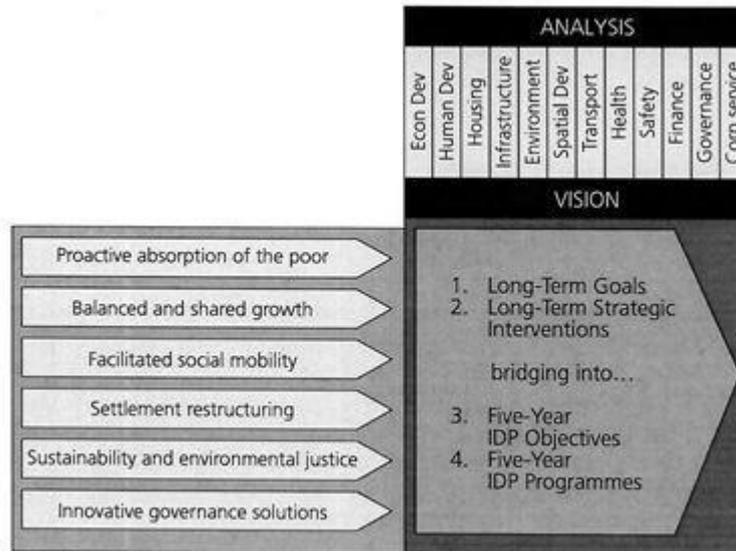
Section 5.2.1 above summarised the legal framework for environmental health regulation in South Africa and Johannesburg and how its developmental mandate potentially encourages more persuasive approaches towards the base of the regulatory pyramid. This section reviews how the CoJ's own strategies are bringing this to life, fieldwork coinciding with the launch of the CoJ's new *Growth and Development Strategy (GDS)* and *Integrated Development Plan (IDP)*. The GDS builds on previous long term city strategies and tries to address their past weaknesses. For example the CoJ's previous *Joburg 2030* strategy largely ignored environmental health (CoJ 2005a) whilst failing to recognise the informal economies of South Africa, including its narrow view that informal street traders must be 'formalised' (CoJ 2006a). At the centre of the new GDS is its vision for the Johannesburg in 2030:

“In the future, Johannesburg will continue to lead as South Africa's primary business city, a dynamic centre of production, innovation, trade, finance and services. This will be a city of opportunity, where the benefits of balanced economic growth will be shared in a way that enables all residents to gain access to the ladder of prosperity, and where the poor, vulnerable and excluded will be supported out of poverty to realise upward social mobility. The result will be a more equitable and spatially integrated city, very different from the divided city of the past. In this World-Class African City for all, everyone will be able to enjoy decent accommodation, excellent services, the highest standards of health and safety, and quality community life in sustainable neighbourhoods and vibrant urban spaces”
(CoJ 2006b p20)

This developmental vision is underpinned by six core principles that cut across 12 sector areas as depicted along the left hand side and the top (respectively) of Figure 5.1 below. At its centre the IDPs implement the GDS by aligning the long term GDS strategic goals and interventions

with five year local government political process, Mayoral priorities (see below) and the business plans and targets of CoJ organisations.

Figure 5.1 GDS and IDP framework (Source: CoJ 2006b p20)



Environmental health regulation is integral to the long term GDS goal for the systematic improvement in environmental health conditions and cuts across *IDP Sector Plan 5: Environment* and *IDP Sector Plan 8: Health* as summarised in Appendix Q. This environmental health goal is divided into three core interventions and objectives and programme activities that together cover most of the work of CoJ EHPs. But this long term strategy also sends out mixed messages to EHPs about how to regulate. For example *IDP Sector Plan 5* refers repeatedly to ‘combating’ the various forms of pollution using approaches including ‘rigorous’ law enforcement that suggests more punitive approaches higher up the regulatory pyramid. This emphasis continues in *IDP Sector Plan 8* but its long-term strategic interventions refer to law enforcement ‘where necessary’ and the need to work with businesses, communities and others (see Appendix Q) that suggests more persuasive regulatory activities.

Environmental health also features in other GDS goals and IDPs with a continued emphasis towards more persuasive regulation. For example in *IDP Sector Plan 2: Human/Community Development* one priority for the Early Childhood Development (ECD) programme is to establish a “...common Citywide approach to Bylaw- enforcement in ECD facilities, both to ensure enforcement of set minimum standards and to prevent unnecessary and prohibitive fining where a more developmental and supportive approach would be more effective” (CoJ 2006b - p134). In *IDP Sector Plan 3: Housing* one priority for the Building Standards Promotion and Enforcement programme is to proactively “...intervene through regulations in management and

maintenance where necessary to prevent negligent and irresponsible property ownership causing decline in the built environment (CoJ 2006b p149).

The GDS and IDP co-exist with six priorities set by the Executive Mayor for his 2006-11 term of office that place considerable emphasis on environmental health as a priority:

1. Economic growth and job creation;
 2. Health and community development;
 3. Housing and services;
 4. Safe, clean and green city;
 5. Well-governed and managed city; and
 6. HIV and AIDS
- (CoJ 2006b p21)

These were informed by the GDS and IDP processes and other sources including feedback from communities during Mayoral road shows. The CoJ recognises these priorities within the other strategic plans but they are intended to set "...both the tone of the current term of office and, by implication, its critical strategic path" and all CoJ staff and politicians are asked to consider them during their daily activities (CoJ 2006b p21). The incorporation of environmental health to six of the Executive Mayor's priorities is important, but section 5.3.5 below suggests that relations between EHPs and politicians including the Executive Mayor are more complex.

In summary, environmental health regulation is well integrated across the CoJ's medium and long term strategies and priorities. They provide few clues as to how EHPs should regulate environmental health, but where they do the emphasis is towards persuasive activities. This section now returns to consider the monitoring work of EHPs for other CoJ organisations and provincial government and its influence on regulation.

5.3.2 Monitoring work for other CoJ organisations and provincial government

Section 4.4.3 above introduced the monitoring work of EHPs for other CoJ organisations and provincial government and these roles are summarised in Table 5.3 below based on the results data. This work was advisory and thus outside the regulatory pyramid but remained important because of its impacts on EHPs. This section argues that whilst monitoring benefits EHPs and those they monitor for it is also costly and can undermine the legitimacy of EHPs.

The case-EHPs described generally good relations with the many organisations they work for and acknowledged its advantages. For example EHPs developed a broader knowledge of other CoJ organisations and provincial government services and premises that was also valuable to

others including local politicians and the public. Indeed, one former senior EHP believed that EHPs had a duty, as part of the CoJ team, to work like this:

“...if you pick up water running down the street, it might not even be a health nuisance, but there’s water running so you report it to Joburg Water. There’s nothing preventing you from contacting Joburg Roads Agency if you find that there’s a pavement that’s got a pot hole in it or whatever the case might be, and you as an EHP might think that this is a safety issue for pedestrians. It’s got nothing to do with you directly, it’s not your core business, but YOU are the eyes and ears of Council out there” (AD-Res 12 July interview pp8-9).

Table 5.3 Examples of EH related monitoring activities by EHPs for other CoJ organisations and provincial government

Organisation	Examples of monitoring activities
CoJ Agencies	
Jo’burg Roads	Vacant stand conditions and roads (e.g. blocked drains)
City Parks	Vacant stand conditions and parks
CoJ Departments	
Emergency Management Services	Joint approval of permits for pre-schools, advice on fire safety and water safety issues
Health	Immunisation programmes in schools and crèches
Housing	Water and sanitation in informal settlements Environmental health conditions in residential buildings
Transportation	Diesel vehicle emissions
Development Planning and Urban Management	Location and use of buildings and settlements
Environment	River and drinking water quality
CoJ Utilities	
Pikitup	Waste management
Jo’burg Water	Water and sanitation (e.g. leakages, overflowing drains)
Gauteng provincial government	
Environmental Health Services	Environmental health of provincial government schools, prisons, clinics

The ability to work with such a diversity of organisations was part of being an EHP, though F1B commented that being “middle men” was also very challenging (F1B interview p47). Joint monitoring work also enabled EHPs to identify premises missing from their databases. For example the involvement of EHPs in city wide immunisation programmes enabled them to identify and then inspect previously undiscovered pre-schools. Joint working could also benefit the regulated, for example EHPs sent copies of crèche permits to the CoJ Department of Community Development because these permits could support social grant applications from

the crèches to improve facilities. However EHPs had many concerns about this work. One common complaint was that EHPs were effectively doing the work of others that was sometimes beyond the scope of environmental health:

“...your correctional services, your police stations, your clinics, your schools... are supposed to have either their own health inspector, or the provincial government inspectors must go there. But then we do them. We must tell Pikitup that there’s dumping somewhere, and that’s the only time they go and pick it up. We must tell City Parks that there’s overgrown grass. Then that’s when they go and cut it... when I see a leaking water pipe I call Joburg Water...” (D1B interview pp46-7).

“...it’s not part of our job to be involved in immunisation. Our job is to make sure that there are measures to control communicable disease, or investigate communicable disease, but not actually involve in the immunisation. But people think that communicable disease is one of our field so we have to be involved in immunisation...” (F1B interview p49).

Some EHPs felt demoralised by this monitoring work, particularly when it wasn’t included in their performance targets and reduced their time for core environmental health work, a situation one EHP likened to being robbed. Some EHPs also questioned why other organisations were not doing their own monitoring and feared things could get worse:

“I think the problem is WE as the Health Department, people come, people expect US to do the work for all of the other Departments, I think that’s the main thing. We must report on about everything that goes wrong, if the storm water drains are not working, if the lights are not working, if there’s problems with overcrowding, town planning, I mean if you think it’s pushed up to us, we must send the things through to them.” (F2B interview p28)

[Imitating another Department speaking to an EHP] “Ok, you’re already there, tell us where they are dumping, you’re already there, you can tell us if it’s overgrown, you’re already there, you can tell us if there’s an invasion of land, you can tell us of the leaking pipe, you can tell us where there’s building rubble...” (D1B interview p49).

“We are the only street-level people there are in the Council... Pikitup don’t have law enforcement people, Environmental Management don’t have law enforcement, Building Control they do have. We are the only ones that can go out and do real inspections in the streets. We are the only ones in the streets.... and then JMPD, but the other

Departments don't have and then they piggy back on us to do their things. And they will take all the credit for it! (F2 Regional EH Manager interview p11).

EHPs were also concerned that their monitoring reports were sometimes acted upon slowly, if at all. Knowing who to speak to was critical, but EHPs provided many examples of CoJ organisations taking a long time to respond to their reports of serious and persistent problems. When there was no response EHPs felt frustrated and powerless, particularly when they revisited these areas and were then blamed by the public and media for its continuing problems.

The failure of some CoJ organisations to maintain their own standards of environmental health could further complicate matters. For example Region F2 was receiving complaints from residents about water entering their newly built homes. These had inadequate drainage, but the Region F2 EH Manager commented that they shouldn't have been built by the CoJ Department of Housing in flood prone areas (authorised by CoJ Department of Planning) and she feared these homes would soon be demolished (F2 Regional EH Manager interview p21). In Region B Operations Manager B3 thought the failure of CoJ organisations to maintain their own vacant stands was making private owners reluctant to act; her requests were regularly countered with the argument that:

“...you say I must clean my own house, you clean there first” (Operations Manager B3 interview pp5-6).

But EHPs also observed that other CoJ organisations were taking responsibility for environmental health matters. For example EHPs were increasingly referring environmental pollution control related cases (e.g. noise, air and water quality) to the new CoJ Department of the Environment whose growing workforce of Environmental Management Inspectors included some EHPs. Waste management cases that EHPs had traditionally handled were increasingly referred to Pikitup and others, but instead of freeing them up to concentrate on their core activities some EHPs considered this a threat to their own roles and professional status as EHPs. In response the Region B EH Manager questioned whether it mattered who EHPs worked for provided they could carry out their core functions (Region B EH Manager interview pp21-2).

Joint working on permits/licenses with other CoJ organisations could also be problematic. The case-EHPs stated categorically that no person could trade without a permit/license and ignorance of the law was no defence, but in Johannesburg people continue trading and opening new businesses without them and this put EHPs in a difficult position:

“If we find somebody trading we cannot close those people down. Instead we have to say ‘please come and apply for a license’. They will take their time, two or three months down the line you have to send out a notice, even summons them, but then speak to them first. Finally they come to apply for a license, you have to still wait for these other Departments to give their ok before you give the license. These are the ones that takes their time. And they’re spending their time, there’s nothing you can do. You cannot close the school down because you are still waiting for the Fire Department... You have to chase after them just to get a report back... a license application may take up to four or five years... You end up chasing and fighting with your own colleagues here, all for a report, it’s just ridiculous.” (Operations Manager B3 interview pp19-21)

During an on-going bat infestation in a block of CoJ flats this Operations Manager also commented that the CoJ Departments of Health and Housing were both refusing to carry out the expensive and specialist works required (quoted at more than R100 000) but the public continued to complain and months later bat faeces continued to cover the property (Operations Manager B3 interview pp10-2). It could take the CoJ 3 years or more to get a Demolition Order for a bad building and, in the meantime, people had moved back in (F2 Regional EH Manager reflections p2). Whilst converting his home to a guest house for the 2010 World Cup the owner had started construction works before contacting any CoJ Departments and F2B feared that costly and preventable alterations might be needed (0005/F2 Observation pp7-8).

CoJ organisations were also prepared to challenge EHPs making these complaints. Case-EHP B4 recalled being contacted by a CoJ Department of Housing official after he wrote a report about an informal settlement (0010/B Observation p17). The official asked B4 who he was to say such things, but he replied by stating that he was telling the truth and the official put the phone down on him. B4 reported the incident to his managers whose actions led to a meeting the following week at the informal settlement with B4, community leaders and all the relevant Departments who validated B4’s report. Attempts to recover the costs of interventions by EHPs in other CoJ organisations were often challenged, particularly for pest control work when replies of “no, we don’t have money for that, we are the Council, you work for the Council...” were not uncommon (Operations Manager B3 interview p6).

Monitoring work for other CoJ organisations could also harm relations between EHPs and the public. Case-EHP D1B commented that “...it always looks like we are spying on communities, and then giving other Departments information for forceful action like removals, taking of their possessions and evictions” (D1B email in 0009/PhD Results). Similarly, inner city EHPs were uncomfortable about attending building evictions informed, in part, by their monitoring reports that the CoJ used to condemn buildings:

“...here in the City centre, there’s bad buildings, there’s evictions and they want EHPs to be there, to be present when actual evictions are taking place, of which we have done our part, we have inspected and said the building it’s unsafe, or unhealthy for people to stay there, we’ve done the report. They have the powers to take action, but they want us to be there on the day of the eviction, of which it is not our role to be evicting the people, or to make sure that the people are eventually evicted.” (F1B interview p49)

EHPs also commented on how the on-going reorganisation of the CoJ was contributing to these problems, F1B commenting that “shifts in power” between the CoJ organisations made the avoidance of responsibility easier (F1B interview p47). But EHPs were also hopeful that this situation would improve. For example Operations Manager B3 was hoping new licensing policies would soon ensure planning issues (e.g. zoning and acoustics) were adequate before nightclubs were allowed to open (Operations Manager B3 interview pp22-3). The Department of Health were also exploring whether they could take the Department of Housing to court for its continued failure to take action to improve serious and persistent sanitation problems in one Region B informal settlement (0009/B Observation p13).

Fieldwork did not include any monitoring for provincial government but EHPs were clearly not happy with this extra workload, not least because Gauteng Province had its own EHPs. The DD-EH explained that relations between the different spheres of government are governed by legislation that can assist with potential conflicts. Less than one year into this monitoring arrangement the CoJ were still exploring how to take law enforcement action against provincial government premises, but the DD-EH emphasised that when dealing with another state body all possible options had to be considered before going to court (DD-EH 10 Apr interview p4).

When asked why these monitoring problems persisted, EHPs typically identified shortages of staff and other resources and accused some CoJ organisations of silo working and these concerns were verified by senior managers and politicians. For example Region F’s Manager described the culture of silo working in the CoJ, where the failure of one CoJ organisation could overshadow the good work of others and this culture needed to change with more collective work across all CoJ organisations (Mtetwa in CoJ, 2007). The DD-EH also admitted other CoJ organisations were routinely avoiding responsibility for their own environmental health and therefore EHPs were trying to persuade them otherwise (DD-EH 10 Apr interview p4).

Therefore whilst beneficial, the monitoring work of EHPs for other CoJ organisations and provincial government came at some cost and sometimes undermined the legitimacy of EHPs. Chapter 5 now considers how the CoJ exerts control on its EHPs starting with relations between

EHPs themselves and their managers before exploring the influence of performance management systems and politicians before ending with resources.

5.3.3 CoJ controls: Relations between EHPs themselves and their managers

To explore how the CoJ was shaping the expectations of EHPs their initial inductions into the CoJ were discussed followed by their relations with colleagues and managers. In all four regional offices the case-EHPs described a general conformity in regulatory approaches between their colleagues that met with the expectations of their managers, the biggest reason for non-conformity being inexperience.

B4 and F2B's work as EHPs long pre-dates the CoJ's creation but the other case-EHPs recalled important but informal induction process. Induction usually began with an orientation meeting about the CoJ by human resources before new EHPs met their new colleagues and Operations Manager. Each Operations Manager then introduced the EHP to their areas using a map and/or driving around the areas and identifying potential priorities and concerns. F1C likened his first tour with his Operations Manager to "another page" opening up for him and being shocked at "the REAL picture" he was seeing (F1C interview pp3-4). Indeed, the Region B EH Manager described his new EHPs to be in need of continual support:

"...who need to be built up, who need to be trained, who need to be literally taken by the hand and shown 'this is the boundary of your Region, of your District'... 'this is what a food shop looks like, this is what you should be looking for in a food shop, where you find a problem, this is how you talk to a person, this is what you're entitled to ask for, if they don't do it, this is the process you follow..." (Region B EH Manager interview pp15-6).

Managers then worked closely with new EHPs until they became familiar with their areas and the job itself, a process that took three months or more. Colleagues also provided vital support during this period, particularly in providing advice on cases and paperwork and this was observed during fieldwork, though the lack of experienced EHPs to mentor new recruits was an on-going concern.

The case-EHPs all described good relations with their colleagues and this was observed during fieldwork. B4 believed everyone in his office respects each other and this made him very happy (B4 interview p23) whilst D1B commented that these relationships were "what's keeping it together" (D1B interview pp18-9). EHPs would often ask each other for advice and share ideas and information, a process helped by the open plan layout of most regional offices. Sometimes EHPs worked together in the field, particularly when they had safety concerns (see section 6.4

below) or needed help with translation or more unpleasant tasks (e.g. inspecting mortuaries). It was not uncommon for EHPs to eat lunch together and they often socialised outside work, some Region F1 EHPs even sharing a house.

The case-EHPs described good working relations with their Operations Managers as observed during fieldwork. Their Operations Managers were generally supportive and the EHPs thought they were treated as professionals. Their Managers were also good sources of information and advice, particularly about complex cases. During fieldwork the new EHPs, including B1, were being closely supervised by their Operations Managers and were clearly benefitting from this. All paperwork was scrutinised regularly, sometimes daily, by their Operations Managers, but provided this was in order EHPs were usually left alone to get on with their work. The location of their Operations Managers in the same office helped and EHPs valued their open doors, F1C recalling feeling very isolated under the previous structure when EHPs were based in clinics away from other EHPs and their managers (F1C interview p30). Some EHPs were also friends with their managers and socialised with them outside work.

EHPs also described tensions with their managers. These were usually because of what one Region B EHP called differences between the discretion of EHPs and the priorities of managers (0008/B Observation p4). EHPs often complained about management pressures to meet performance targets, as explored in the next section, but they sometimes believed their Managers were ‘out of touch’ with events in the field, particularly regarding personal safety matters (see section 6.4 below). EHPs also did not like managers imposing projects on them, especially at short notice:

“I have a campaign and I was just told about it this week: ‘next week it’s gonna be a campaign, and it’s gonna go like this.’ We are not involved in the planning. Things are just done, they come from on top, because in EH we know exactly what is going on, we know if we come with this approach it’s not gonna work because we know those people, we work with those people... So maybe it’s one of the reasons why campaigns or projects don’t succeed, because the people on top... come and impose things.” (F1B interview pp19-22)

The case-EHPs knew their managers were in charge and were themselves under pressure from more senior managers but EHPs also did not think they should be blamed when ‘top-down’ projects fail, two (anonymous) EHPs citing the Executive Mayor’s inner city Clean and Green campaign to illustrate this (see section 5.3.5 below). Instead EHPs wanted to be more involved in future projects from the earliest planning stages and the AD-Res agreed and called for front

line EHPs to be involved in the development of all CoJ environmental health related law and wider policy in the future (AD-Res 12 July interview pp3-4).

Two vignettes based on fieldwork cases were included in the questionnaire (see Appendix I *Parts 1 and 2* p246) to explore departmental conformity and expectations. The ten case-EHPs were asked for their perceptions of how their EHP colleagues would proceed when confronted by the same scenario and whether their own actions conformed to their manager’s expectations. These results are summarised in Table 5.4 below and suggest that most EHPs were certain that their actions were similar to their colleagues’ and their manager’s expectations.

In both scenarios most case-EHPs thought their colleagues would do the same and their approaches were very similar and generally favored persuasive approaches. However Table 5.4 below also identifies some EHPs who either did not know what their colleagues would do or feared they might act differently. These EHPs (from all four regional offices) were concerned that their colleagues lacked experience and might therefore issue a CoA in the informal tuck shop vignette or, at the other end of the regulatory pyramid, serve a fine/summons or try to close it down. For the crèche scenario the case-EHPs were concerned that their inexperienced colleagues might allow the crèche to continue operating in its overcrowded state. Indeed, B2 admitted that when he was inexperienced he had incorrectly issued a CoA to a tuck shop like this (B2 questionnaire pp2-3).

Table 5.4 The extent to which case-EHPs’ actions were perceived to accord with their colleagues and the expectations of Managers

	Tuck shop scenario	Crèche scenario
EHP colleague actions (n=10)		
Alike	6	7
Different	1	2
Don’t know	3	1
Managers’ expectations (n=10)		
Alike	9	10
Different	1	-
Don’t know	-	-

Fieldwork also revealed inexperienced EHPs undermining the past interventions of more experienced colleagues during revisits. These included a sauce manufacturer that had closed temporarily following an inspection by F2B and her Operations Manager, but a revisit by two inexperienced EHPs shortly afterwards gave the manufacturer the impression that he could start

again provided some repairs were completed (Region F2 EH Manager interview pp24-5). This error was promptly detected by supervision and corrected immediately and examples like this were used by Managers to justify their close supervision of all EHPs, particularly those new to the CoJ.

In both questionnaire vignettes almost all the case-EHPs thought their managers would expect them to follow their chosen courses of action. Only F2A thought his manager would expect a more punitive approach he characterized as “no negotiations, zero tolerance” (F2A questionnaire p3) but F2A respected his manager’s right to see things differently. Similarly, most other EHPs thought cases like these were not straightforward and required considerable discretion because:

“...sometimes you can’t stick to the law 100%, we need to be practical” (B1 questionnaire p4).

Therefore five case-EHPs would also brief their manager and seek their advice and endorsement before taking further action.

In summary, the relations between EHPs themselves and their Managers were an important influence on the regulatory process. This started from induction, but across the four regional offices the case-EHPs described a general conformity in approaches between their colleagues that met with managers’ expectations. Differences of opinion were acknowledged between EHPs and their managers, but inexperience was the most common reason for non-conformity and helped managers to justify their close supervision of all EHPs but this chapter now considers the influence of performance management on their work.

5.3.4 CoJ controls: The influence of performance management

The working day itself provided a basic control on the activities of CoJ EHPs, particularly the expectation that they would work in the field from 10:00AM until around 15:00PM unless they had good reason and management permission. Their workloads were also influenced by the nature of the job, particularly the number of complaints received, and the previous section reviewed the considerable influence of their colleagues and managers. But the CoJ’s performance management systems were an important influence on its EHPs and effectively reinforced the regulatory pyramid as this section now reviews.

The *Local Government Municipal Systems Act, 2000* requires local government to operate performance management systems in accordance with its IDPs and the wider policy objectives (Section 38) as covered for environmental health in Section 5.3.1 above. Performance

management within the CoJ Department of Health began around 2000 as part of the neoliberal *iGoli 2002* strategy and in consultation with Dr Erik Bock, a management consultant and former local government Medical Officer of Health (AD-Res 17 Apr interview p3). Dr Bock drafted the initial key performance indicators for the Department of Health and after a period of consultation and redrafting a system was implemented based on Kaplan & Norton's (1996) balanced scorecard approach. Here 'balance' refers to the use of other (non-financial) indicators to measure organisational performance like those related to employees, organisational activities and customer satisfaction (Kaplan & Norton 1996).

During fieldwork the monitoring tools for environmental health for 2005-6 and 2006-7 were based on the CoJ's IDP and comprised 65 key performance indicators with monthly and yearly targets for the CoJ and its Regions that covered four main areas:

- Type and numbers of premises inspected (including vacant premises and those of provincial government)
- Type and numbers of law enforcement related actions (including referrals, awareness raising programmes)
- Numbers of samples/tests conducted
- Numbers of requests for service attended to, resolved or referred

(CoJ DoH 2005, 2006a)

Performance data were also collected relating to permits and licenses, for example the numbers of CoA permits issued for formal and informal food premises. A few targets were also designed to monitor persistent offending, for example the number of fines/summons issued to the owners/occupiers of buildings that have failed to comply with notices.

Document analysis of the annual targets for regulatory actions for the whole Environmental Health sub-directorate for 2005-6 and 2006-7 and individual EHPs also conformed to the shape of the regulatory pyramid as summarised in Table 5.5 below. Yearly overall targets were broken down by the regions into monthly and weekly targets and allocated to their EHPs through yearly performance agreements based on their responsibilities and areas. Each EHP then maintained a daily scorecard of their activities that was compiled into a weekly scorecard for their Operations Manager at the end of each week. The scorecards of the case-EHPs differed, but the CoJ's expectations for regulatory actions were similar for most district case-EHPs and also conformed to the regulatory pyramid. When asked during interview, Managers reported that the activities required of their EHPs could increase by up to 10% year on year but in the 2005-6 and 2006-7 performance monitoring documents there was no increase.

Table 5.5 Annual activity targets for the Environmental Health sub-directorate and a typical district EHP (sources: EHP scorecard data; CoJ DoH 2005, 2006b&c)

Activity target	EH Sub-directorate targets for 2005-6 and 2006-7	Typical EHP targets – per year
Number of fines/summons issued	2495	36
Number of statutory notices	29 781	264
Number of premises visited and evaluated/re-evaluated	No target data, but 122262 evaluations over 2005-6	1800

The figure of 1800 premises visited by an EHP in Table 5.5 above was calculated by the author based on the typical performance agreements between case-EHPs and their managers to complete up to 8 inspections/complaints per day (see section 4.4.4 above). At the peak of the regulatory pyramid the author was unsuccessful in his requests to the CoJ for law enforcement data including the numbers of prohibitions (e.g. premises closures) or prosecutions (see section 3.3.4). By their nature the fine/summons becomes a prosecution in the courts if unpaid and contested by the offender, but this was coordinated by the criminal justice system and EHPs did not know what happened next after they issued their fine/summons and the author’s requests for data on this were unsuccessful (see section 6.9 below).

All the case-EHPs agreed that their work should be monitored but F2A summarised their general ambivalence about targets; on the one hand they were something you cannot go away from, but on the other they could usually be met without problems (F2A interview pp25-6). The case-EHPs agreed that targets were important, particularly for inexperienced EHPs, and gave them the opportunity to constantly review cases with their managers. F2A likened this to a process of self-regulation, a safeguard to ensure EHPs have “good facts” and “can produce results” (F2A interview pp26-7). Similarly, other EHPs commented that monitoring provided an important verification of their work that also helped protect and motivate them.

Most case-EHPs believed their work was monitored too much. Some complained about the time taken completing scorecards that, in their view, could be better spent in their areas. EHPs undoubtedly felt pressured at times, particularly when reactive or long term cases intervened that were not reflected by the scorecard. If they failed to meet their monthly targets EHPs had to provide reasons in writing to their Operations Manager and missed targets could be carried over to the following month. Continued failure to meet targets could prompt disciplinary action,

including training, but this did not seem to happen very often. Indeed, certain activities (e.g. blitz work) meant that EHPs could sometimes meet their monthly target of three fines/summons in one day or evening.

Some EHPs had also made agreements with their managers in response to local circumstances and sometimes far in excess of their targets. For example B2 had agreed to inspect all the day care centres and pre-schools in his areas once a month to maintain standards there and not quarterly as his targets required (B2 interview pp22-3 and 0006/B Observations p6). The case-EHPs usually exceeded their targets but there was little incentive to do so:

“...even if you exceeded FAR beyond what they actually put they don't even look, there's not even say 'ok, fine, well done, so and so has done EXTRA work or double work per month.' No, there's nothing, you did what you're supposed to” (F1C interview p35)

EHPs had two main concerns about the influence of targets on their daily work. Some were uncomfortable with targets for regulatory actions, particularly the fine/summons, as summarised well by one manager:

“Maybe the person deserved the fine... maybe they were breaking the law and get a fine, but was the fine the right thing to do on that occasion? It's been determined by the target, not by what's required” (Region B EH Manager interview pp5-6)”

“We've always done prosecutions, we've always done summonses, I'm the kind of person that says you can't get away from it, [but] it needs to be the end of the process, towards the end of the process. Targets unfortunately makes it sometimes the beginning” (Region B EH Manager interview pp11-2).

The case-EHPs considered this pressure unfair and contrary to their preventative ethos, particularly when a premises was trying to improve:

“...you can't teach a person today, and then tomorrow you fine him. And then tomorrow you want to teach him again something... by then... there's that wall, people no longer listen to you open mindedly. They are like 'Ok, my sister... maybe they're going to fine me...” (D1B interview pp42-3).

“...maybe Rob you told that person, maybe once, that they must provide a hand wash basin. You get there the next time, maybe they provided something to that effect, but

not fully to your satisfaction. Under normal circumstances you will tell that person ‘No, ok, fine you have put a hand wash basin but it’s only cold water and I said I wanted hot and cold water’...and under normal circumstances maybe you would write another notice or you would be able to say ‘no, put hot and cold water.’ But then because a fine is wanted, you fine that person for not providing hot water ...it causes tension because that person is TRYING to comply with your requirements but you are also trying to reach your targets. So sometimes it puts undue pressure on us and then we put undue pressure on the clients” (D1B interview pp42-3).

To examine this further with case-EHPs this tension was built into the *Situation 1* vignette (see Appendix I p246) about an informal settlement tuck shop. The final question asked if the EHPs would act differently if it was the last day of the month and they had only served two fines instead of their target of three. Six case-EHPs would not act differently, particularly on their first visit, F2A commenting:

“I’m not writing tickets because 3 per month is required... There must be justification, not just a chase for the scorecard” (F2A questionnaire p3).

For the other four case-EHPs the target was important but the fine/summons was a last resort. Further, all case-EHPs thought the fine/summons could be counterproductive for informal sector cases like this, unless there was a serious public health problem. B2 feared that the owner “...may think I’m looking for something with which to nail somebody” (B2 questionnaire p3) and others feared the damage to their relations with the public if EHPs were perceived to be raising revenues in this way. There were no revenue related targets in the scorecards, but this was clearly being considered because the Region F1 weekly scorecard included an ‘income generated’ box though it was incomplete in the examples seen.

The second concern of EHPs was that targets do not reflect the value of their work, could distort it and damage longer term environmental health gains. For EHPs the omission of details like the types of premises from the scorecard suggested activities there were not important. Despite meeting her targets D1B concluded that she was not “implementing environmental health as a whole” because many core issues were not being addressed (D1B questionnaire p15). F1B commented that instead of being measured by the changes you’ve achieved a culture of “pleasing your boss” by meeting your targets now existed (F1B interview pp19-22) and these concerns were echoed in the warnings of one manager:

“If you keep on telling them [EHPs] to do just this and this and this, unfortunately the score card creates gaps, because people end up just focusing on the score card. People

forget about all the other 80% of environmental health functions, but if they're not worried about that part we're only going to focus on the score card issues, because these are the things they are pushing. So the score card has created a monster, which is causing these EHOs to lose the skills that they've developed on other things because in the end, in five years time, they will only focus on those things, they will lose the sight of the other things, that's what I'm afraid of" (Region F2 EH Manager interview p12).

"...[T]hey tell you this is what you must do, this is your [scorecard] for the year, do it. So you act like a robot.... they [EHPs] lose their - 'I want to do something more, I want to do this and I want to look into this, because I don't have time to look into this because I must write so many stat. notices and so many fines' - their creativity, I'm worried about it" (Region F2 EH Manager interview p16).

One former Regional EH Manager had noticed in his last post that some EHPs were becoming "negative" by focusing solely on targets (AD-Res 2 February interview p2). Other issues were creating further complications. For meeting their targets EHPs on permanent contracts typically got up to 3 days extra holiday per year (e.g. from 24 days to 27 days) or permission to attend a conference or equipment to this equivalent value. EHPs on temporary contracts could be eligible for financial rewards of up to 10% of their salary (AD Res 17 April interview p4), but senior managers got financial bonuses and one [anonymous] manager thought this was creating a corrosive situation:

"[As an EHP] you work for somebody's bonus, you don't work for improving the quality of the environment. And then you'll get the Mayor in an email telling you: 'All managers please resign because their areas are not what they're supposed to be!' But in July, all the executives got their bonuses, so how can you tell us the areas are clean, they got their bonuses?" (Anonymous manager)

In response to all these concerns the case-EHPs and their managers generally agreed about the need to review the balanced scorecard system with senior managers and politicians, including the Executive Mayor, and for the development of targets based on outcomes, not activities. For example one manager suggested targets based on compliance:

"I would like to have a target to say 'How many of your crèches have permits?' SIMPLE! Not how many visits are you doing per year, but how many of them comply with the By-Laws... To say at the end of the year we have 50% comply, by now we have 70% complying, then you can say we've moved 20% or something like that..." (Region F2 EH Manager interview pp7-8).

Similarly, for vehicle testing this manager suggested targets based not on the numbers of vehicles tested but on the numbers that pass/fail that could provide further details to enable better targeting of vehicles. A few compliance related targets (e.g. the numbers of CoA permits issued to formal/informal food premises) already existed and EHPs hoped more changes like this could help them better demonstrate the impacts of their work. However, past lobbying for these changes with senior managers had been unsuccessful and EHPs were not optimistic that this would change.

In summary, performance targets effectively maintained the regulatory pyramid distribution of activities as what the CoJ wanted. EHPs generally accepted them and had few problems meeting them but they voiced important concerns about their use for the more punitive fine/summons and how targets were distorting their work towards what's counted instead of what is important for environmental health. EHPs suggested alternative targets more aligned to the outcomes of their work but past experience suggested there was little will amongst more senior managers for such changes. This chapter now considers how politicians can influence the work of EHPs.

5.3.5 CoJ controls: relations between EHPs and politicians

This section explored how CoJ politicians, particularly local Ward Councillors, largely supported their EHPs and sometimes gained much from them. But they also sometimes directly influenced the work of EHPs and did not hesitate to blame them for local environmental health problems, therefore EHPs treated them with great caution.

The CoJ's most senior politician regularly stated his support for environmental health. Section 5.3.1 above identified its embedding within the Executive Mayor's six priorities for Johannesburg and during fieldwork his State of the City address included commitments to provide access to clean water and sanitation for all communities by 2010, to expand air quality monitoring and rehabilitate illegal dumping hotspots (Masondo, 2007). Further commitments included the employment of more EHPs, continued public awareness campaigns on food handling and chemical storage, a focus on law enforcement for pest control hotspots and the encouragement of communities to report offenders who fail to maintain buildings. But relations between the Executive Mayor and EHPs were not always so positive as explored further below.

The MMC-Health. Clr Mfikoe, was head of the CoJ Department of Health and also expressed her support for environmental health. In her foreword to the Department's 2005/06 annual report she endorsed approaches across the regulatory pyramid, but also reinforced the perception that persuasive approaches are more developmental:

“Environmental Health also remains high on the district’s agenda in ensuring not only a punitive role (in conjunction with JMPD) of adherence to By-laws is enforced but also a developmental one in ensuring empowerment, skills development, raising awareness, effective outbreak response and health promotion. Its main focus being ensuring that the district is regarded as safe, clean and green and focused on the well-being of the communities we serve” (Mfikoe in CoJ DoH 2006b pp2-3).

At the Alfred Nzo⁸ conference for CoJ EHPs the MMC-Health admitted that she did not know much about them because environmental health was not recognised when she grew up though this changed when she was appointed ‘leader of rat chasers’ as she described herself (0005Obs/Central p4). The MMC-Health then asked her EHP audience whether they knew their roles and was met with a tired ‘yes’ before she then listed the nine activities that define municipal health services (Mfikoe in 0005Obs/Central p4). Clr Mfikoe recalled accompanying President Mbeki to Soweto where they found significant rat infestations in one township that prompted her to direct funds towards a vector control project there, though senior EHPs present whispered to the author that they did not think this would happen (0005Obs/Central p5). The MMC-Health also promised a budget increase of R5 Million for 2007-08 before repeating her commitment to environmental health and EHPs (0005Obs/Central p5) and the Region F2 EH Manager commented that Clr Mfikoe had been very supportive of their work to date and had not sought to interfere (F2 Regional EH Manager interview pp1-2).

Most case-EHPs were engaged with the Ward Councillors for their areas, though F1D admitted having no contact with any politicians even though they were based in the same building. For most EHPs, Ward Councillors were a constant source of information and complaints and therefore an important means of detecting local issues and potential offences, though some EHPs were concerned that such communications could be very one sided:

“...we hear from [Ward Councillors] once only if they need the help from us, whenever we need the help from them they are not there to phone” (F1C interview p31).

EHPs sometimes worked closely with Ward Councillors to secure access to local communities via meetings and workshops for example or on related projects. EHPs and their managers were also observed briefing Ward Councillors on CoJ services and procedures during fieldwork, frequently on services beyond environmental health. The Region B EH Manager thought this

⁸ In 1994 Nzo became Minister for Foreign Affairs but in 1950 he began his career as an EHP in Alexandra township, Johannesburg, whose poor environmental health conditions prompted his engagement with politics that later led to him to lose his EHP job (ANC, 2000).

reflected the breadth of their work and the reputation of EHPs in the CoJ for ‘delivering’ that is sometimes abused by Ward Councillors (Region B EH Manager interview pp8-10). Some EHPs thought this was taking up too much time but a new reporting protocol for all Ward Councillors via the MMC-Health was being implemented during fieldwork to try to prevent this. There was also general agreement that Ward Councillors needed more training about how the CoJ works.

The case-EHPs rarely felt pressured by politicians in their day jobs, but they all acknowledged that politicians were powerful in many different ways. During their regular work Ward Councillors sometimes reminded EHPs of their own accountabilities. B2 described his local politician as “...somebody who gives credit where it’s due and then if you are not pulling your socks [up] he will tell you” (B2 interview p18). B1 commented that Ward Councillors can adopt a “political approach” where instead of talking nicely they sometimes just tell EHPs to “do 1, 2, 3” (B1 interview pp21-2). This was observed during one noise complaint investigation, when B1 was instructed by a Ward Councillor not to contact the complainant directly and this made the investigation much more difficult (0004/B Observations p7). EHPs often commented that local politicians lacked environmental health knowledge and therefore did not value their work or blamed EHPs themselves for poor conditions:

“If we haven’t done our work, wrap me over the knuckles and say ‘you haven’t done it, I’m not happy, WHEN can I expect you to do it?’ But don’t tell me how to do it AND, don’t hold ME responsible for the whole of council’s work” (Region B EH Manager interview pp7-8).

This was further illustrated during the tours of the CoJ regions by senior CoJ politicians during fieldwork. One anonymous manager described a tour of his region as a “wake up call” for the Executive Mayor. It retraced a previous tour five years before and found no improvements in some areas which led the Mayor to conclude that his ‘managers are dead’ before he questioned whether his front line officials were also dead. One anonymous EHP accompanied the Mayor on another tour and, in response to similar findings and comments, fumed with rage and accused the Mayor of knowing nothing about environmental health! The anonymous manager was also angry but acknowledged that things were much more complex given the scale of problems in Johannesburg and the need for politicians to think beyond their five year terms and engage with the people. This manager also thought more punitive approaches were needed:

“People see illegal connections, but nothing is done about them. People are invading factories, but what are officials doing? The community think it’s a lawless society!”
(Anonymous manager)

To further illustrate this disconnection between politicians and their EHP administrators, in 2006 EHPs were involved in the Executive Mayor's Clean and Green Campaign to regenerate parts of the inner city. This R8 Million campaign initially focused on waste management but later targeted problem areas and premises using increasingly punitive 'zero tolerance' approaches. For example the chances of targeted visits resulting in a fine/summons were 1:7 compared to 1:53 during routine work (see Table 4.1 above). Two anonymous EHPs recalled significant short term improvements but two months after the campaign ended conditions had deteriorated to pre-campaign levels and these EHPs remained concerned that politicians could influence their work in such a top-down, costly and unsustainable way.

EHPs could also find themselves caught up in local party politics. D1B recalled how Ward Councillors make unrealistic environmental health promises to people during elections that cannot be delivered (D1B interview p31). B2 described how non-ANC Ward Councillors try to show EHPs are doing nothing to send a message to the people that if you "put us in power next time, we will do x, y and z" (B2 interview pp47-8). Whilst working with local businesses and the community on an environmental health project, F1B found himself at the centre of a political dispute between the Ward Councillor and project leader who was accused of using the project to canvass for opposition votes. In response F1B managed to get the two sides to "work for the better view, because that's the only way we can succeed in this area, making our area clean and uplifting" but he remained wary of politicians (F1B interview pp24-5).

In summary, politicians were generally very supportive of their EHPs and the two benefited from working together in many ways, not least in making EHPs aware of local problems. But EHPs treated politicians with understandable caution and were careful to pass any correspondence from them immediately to their managers for further action. This tactic was reinforced by veteran Johannesburg EHP Joshua Mahlangu during the Alfred Nzo conference who, when asked by EHPs for one piece of advice, simply recommended that you always "cover your backside" when working, particularly when a Councillor wants a report (Mahlangu in 0005Obs/Central p6). The final section of Chapter 5 now focuses on resources.

5.3.6 CoJ controls: resources for the EH Sub-directorate

The reality of resource shortages identified in section 2.5.5 above is actually enshrined across the legal framework for South African local government. For example the *Constitution* requires municipalities to strive to deliver their objectives, including the promotion of a safe and healthy environment, "...within their financial and administrative capacity" (Section 152. (2)) and is incorporated into legislation including the CoJ's *Public Health By-laws*:

“Every person has a constitutional right to an environment that is not harmful to his or her health or well-being... and the Council has a constitutional duty to strive, within its financial and administrative capacity, to promote a safe and healthy environment” (Chapter 2 Section 3 (1)).

In 2003 Haynes (2004) found that over 2002-3 the average spend on core local government environmental health services in South Africa was nearly R9 per capita though the CoJ was spending nearly R14, just exceeding the National Department of Health’s suggested per capita spend of R13. Three years later the DD-EH confirmed that central government, via the National Department of Provincial and Local Government, continued to fund municipal health services at the CoJ based on R14 per capita which accounted for around 20% of the total Environmental Health Sub-directorate’s budget, the remaining 80% coming from the CoJ itself and mostly covering salaries. This central budget also provided the Regions with the same basic resources, though each Regional EH Manager also submitted yearly budget requests to cover these core functions and other activities like project working (DD-EH 10 April interview p5).

Environmental Health at the CoJ was therefore relatively well funded compared to other municipalities. But Agenbag (2006) argues that when compared to the national budget for primary health care services of R150-260 per capita (depending on the region), preventative environmental health services remained the poorer relative to curative services. Further, the challenges of UK local authorities are relatively minor compared to South Africa but during 2002-3 the estimated average spend by English and Welsh local authorities on environmental health services was around R150 per capita (CIPFA, 2004) but UK EHPs (Burke et al. 2002) and others (Hill, 2005) were concerned about their under resourcing.

The DD-EH also stressed that national Government could intervene if a municipality is in financial trouble (DD-EH 10 April interview p5). This is particularly important because South African local government has historically been largely self-sufficient and raises around 90% of its own revenues (Beall et al., 2002). The work of CoJ EHPs raised some revenues via the charges for some permits/licenses for example (e.g. R450 for a business license for formal premises in 2007) but these wouldn’t cover the costs of the time of the EHPs involved let alone any other CoJ organisations. Further, the administration of the fine/summons by the JMPD and criminal justice system meant any revenues by-passed EHPs altogether. The existence of an ‘income generated’ section on the weekly scorecards of some EHPs (see section 5.3.4 above) suggests their revenue generating potential was being considered. There was no evidence of such pressures being put on EHPs but they knew the public sometimes perceived them - particularly when serving a fine/summons - as revenue collectors for the CoJ. Ironically

therefore generating revenues could strengthen EHPs within the CoJ whilst undermining their legitimacy to the public!

EHP to population ratios provide another crude way of exploring resources. Haynes (2004) also found a national average of nearly 24000 people per EHP in 2003, only the Western Cape province meeting the NDoH recommended standard of 15000 people per EHP. A more recent survey provides a better indicator of front line resourcing by calculating the number of functional-EHPs which excludes managers and graduates completing their compulsory one year community service training (Agenbag and Lues 2009). Using this indicator they calculated a new national average of nearly 46000 people per EHP, the Western Cape still the only province achieving the NDoH standard.

In February 2007 the CoJ employed 119 functional EHPs⁹ to regulate the environmental health of around 4 Million people, a ratio of approximately 34000 people per EHP and more than double the national recommended standard. In 2013 Mudaly's survey of EHPs in municipalities across South Africa found that the CoJ employed 221 EHPs in total (functional EHPs not known), nearly twice that of six years earlier, but 75 more were needed to meet the 1:15000 ratio recommended by the NDoH given the increase in Johannesburg's population by 500000 (around 4.5 million total) during this period. In this survey the Western Cape municipalities remained the only ones meeting the NDoH recommended staffing levels.

When asked to rate the resources they have the case-EHPs were divided. In Regions B and F2 the case-EHPs considered their resources adequate, but those in Regions D1 and F1 considered them inadequate but when questioned further all the case-EHPs shared many concerns. For example they often worried that there were too few EHPs to cover such large areas, particularly in Regions B and D1. It could take weeks, even months to cover them all, whilst focusing on one area meant conditions in others deteriorated. This was compounded by the changing nature of Johannesburg, especially its growing population and the transient nature of many businesses, particularly in inner city Region F1. B4 and D1B likened their roles to 'putting out fires' but they also used their discretion to organise their proactive work geographically when possible:

⁹ The CoJ Department of Environmental Health employed a total of 134 EHPs in February 2007, but the four senior managers in the Central EH Unit and the 11 Regional EH Managers were subtracted from this total. In contrast to Agenbag and Lues (2009), Operations Managers and EHPs completing their community service training were included because most had their own caseloads in the field though admittedly they were not as active as the case-EHPs.

“...due to staff shortages you would wait a bit longer [to revisit a premises], so that the premises with 7, 14 or 30 days’ notices expires and then you can visit all of them” (D1B – email in 0009/PhD Results).

In all four regional offices staff turnover created further pressures and all lost experienced EHPs during fieldwork, whilst new and inexperienced EHPs were constantly arriving and required much supervision and support. Following a recent reduction of EHPs in the Region D1 office from 23 to 13, D1A questioned (cynically) whether EHP:population ratios were still being used to determine staffing levels (D1A interview p55) whilst D1B concluded that “someone out there thinks there’s not much work for EHPs” (D1B questionnaire p17). EHPs were also concerned about the loss of experienced Managers, including older White EHPs who had reached a glass ceiling and were retiring early without passing on their experience.

In future the DD-EH aspired to employ 300 EHPs to exceed the NDoH recommended standard but he was also concerned that EHP:population ratios distorted the picture in apartheid cities like Johannesburg where around half the population live in Soweto but work in the northern regions. Therefore the Central EH Unit was exploring other variables including the numbers and types of premises and the time EHPs spend on different tasks. In the meantime managers and the MMC-Health acknowledged the shortages of EHPs and were concerned about its impact on morale. For example the Region B EH Manager was operating with half the EHPs he required and had recently written directly to the Executive Director-Health to voice his concerns and his support for his struggling EHPs (0001/B Observation p2).

A lack of resources was also influencing EHP functions. EHPs were concerned that the funding for some projects had ended long before their improvements became sustainable. During fieldwork the sampling of foods and drinking water across the regions had ceased and remained a great concern to EHPs and senior managers (CoJ DoH 2006b). Pest control services only now offered advice to the public, with interventions restricted to CoJ premises and those owned by provincial government. EHPs and managers were also concerned about the lack of resources for staff training, particularly in areas like law enforcement. This was compounded by the 2010 World Cup and pressures to train more Peace Officers with the JMPD taking priority such that case-EHP B1 was still unauthorized to enforce the law despite working for 3 months. EHPs also expressed concerns about technology available. All had desks and telephones, but some shared computers connected only to the CoJ intranet and email. Sharing encouraged the exchange of knowledge, but two EHPs expressed a desire for external internet access to help keep them up to date with environmental health developments.

During fieldwork two regional offices were broken into with computers, printers and photocopiers stolen that were unlikely to be replaced for weeks. Some EHPs had access to work mobile phones, but most used their own mobile phones (and credit) whilst in the field, particularly when trying to access high security gated homes to investigate complaints. In Region D1 EHPs also regularly apologised to the author for the state of their temporary, mobile office that was in a poor state of repair and frequently undermined their own work:

“We say to the public they should do this and this and this and only when they come to your office they see the opposite of what you are preaching. So if the Council, because Health it’s a core Department and it deals with the public and the clients visit them, they should set the trend... they should put their health staff in office which are lookable and which are kept clean all the times....” (D1A interview p20).

Lastly, during fieldwork there was encouraging evidence of increasing EH resources. During 2005-6 an additional 22 EHPs were appointed (CoJ 2006a p26), whilst 2006-7 highlights from the MMC-Health included a budget increase of R2 Million that enabled the recruitment of two new Managers, six EHPs and two administrators (0005Obs/Central p5). Further, the MMC-Health reported that the 2007-8 budget included an additional R5 Million for environmental health and these increases were welcomed (0005Obs/Central p5). Mudaly’s (2013) survey reports of 221 CoJ EHPs were also encouraging, but whether the next six years will bring the total nearer the DD-EH’s aspiration for 300 EHPs (or more given Johannesburg’s growing population) remains to be seen.

5.4 Conclusions

Chapter 5 found that both legal and organisational factors exert considerable influence on how CoJ EHPs regulate environmental health that often favour persuasive approaches towards the base of the regulatory pyramid. The legal framework for environmental health and the statutory position of local government EHPs is characterised by uncertainties that together makes their mandate for regulating environmental health far from secure. The CoJ provided clear strategic and political support for environmental health regulation and its EHPs but this was sometimes undermined at the local level, particularly through performance targets, resource shortages and the regulatory interventions of CoJ politicians. For EHPs, relations with their colleagues and managers were vital for navigating the many uncertainties of the regulatory process and the next chapter now considers the influence of EHPs themselves on this process.

Chapter 6 Individual factors: The backgrounds and views of EHPs

6.1 Introduction

This chapter focuses towards the centre of Figure 4.1 and begins by reviewing the backgrounds and general views of EHPs about their work before exploring their personal safety concerns. The chapter then focuses on their views of the criminality of EH offending, sanctions and the criminal courts. Chapter 6 argues that individual factors can influence the decisions of EHPs across the regulatory pyramid but frequently favour persuasive approaches towards its base.

6.2 The backgrounds of EHPs

Table 4.1 above summarises the backgrounds of the ten case-EHPs studied. Seven years after Mathee et al.'s (1999) study male EHPs no longer dominated Johannesburg's local government offices. In the four regional offices around half of EHPs were female but the author did not identify any differences between the regulatory approaches EHPs that could be attributed to gender. For example unlike Crook and Aye (2006), females did not appear to be better negotiators than their male counterparts whilst females were also as willing as their male counterparts to use more punitive approaches as required. Nine case-EHPs were Black-African and this conferred some advantages in building relations with Black-African businesses and the public, particularly when languages, cultures and histories were shared. But disadvantages included the willingness of 'fellow Africans' to offer bribes (see section 7.8 below) or accuse EHPs of having a 'bad attitude' (see section 7.5 below). One white female case-EHP (F2B) thought her race and gender together put her at greater safety risk (see section 6.4 below).

Following the earlier Cape Town studies (Lewin et al. 1998; McDonald, 1997) some victim blaming in poorer areas was identified amongst case-EHPs but this was usually attributed to *organizational incompetence*, not race or criminality, and reflected a need for the education, advice and support that EHPs could provide (see section 7.2). In contrast to the Cape Town studies, all the EHPs encountered were clear about their roles in poorer areas though they remained challenging as explored across Chapter 7, particularly section 7.7 on regulating the informal sector. Black-African EHPs sometimes had an obvious advantage over other races when working in poorer areas, though in Coloured townships for example this was not always the case.

Half the case-EHPs had lived and/or worked in rural areas before joining the CoJ. They sometimes described a greater emphasis towards community development in rural areas where persuasive approaches like education and advice dominated. In contrast, at the CoJ all EHPs acknowledged that punishment AND persuasion, in the form of 'law enforcement', were required. The Region F2 EH Manager commented that some ex-rural EHPs initially found it

hard to adapt to the CoJ (interview pp5-6), but unlike Hutter (1988) this research did not identify any former rural EHPs who were reluctant to use more punitive approaches.

Most case-EHPs were in their 20s-30s, as were their colleagues in the four regional offices, and all had National Diplomas in EH though six had also completed EH degrees and were studying for other qualifications. None were newly qualified, even CoJ new starter B1 possessing two and a half years of regulatory experience elsewhere. There were no noticeable differences between the views and practices of younger and older EHPs observed during fieldwork that could be attributed to age or education, though there was some evidence that experience influenced regulation beyond the case-EHPs. For example inexperienced EHPs were sometimes accused by colleagues and managers of being ignorant of the law (see section 6.6 below) and this was often used to justify the need for close supervision.

6.3 EHPs' views of their roles and motivations

All the case-EHPs acknowledged their work as law enforcers but considered their primary role to be remedial rather than punitive, with the law acting as one means towards greater environmental health ends. EHPs typically described themselves as educators and advisors, persuading and awareness raising, protecting people and improving their lives. For some helping people was what they liked most about their jobs:

“You have to help them because they need information ... Some of them steal, some of them they went to school, so they need us, that's why we are always having this awareness of them. You know we actually convey the message, we are educating the client. It's good to see people improving in their lifestyle because you contribute...”
(F1C interview pp25-6).

The EHPs also saw themselves promoting health and more sustainable lifestyles and preventing ill health by solving problems and responding to community needs, particularly from those in low income areas. All recognised the inequalities in their areas, but B2 saw his role as trying to “bridge the gap” between ‘developed’ and ‘developing’ communities (B2 interview p11). B1 saw his role as “addressing the health needs of all the nation” but he admitted there was still some way to go (B1 interview p38). Three case-EHPs described themselves as ‘saviours of the community’, F2B commenting that without EHPs she did not know where Johannesburg would go (F2B interview p13). The DD-EH summarised many of these views by defining the role of EHPs as the “management of environmental health risks in the public interest” (DD-EH 10 April interview p5). These views reflected the Constitutional objectives towards developmental local government (see section 5.2.1 above) and sometimes EHPs commented how their work

was delivering the *Constitution*, particularly Section 24 (the right to a safe and healthy environment), but none mentioned developmental local government during fieldwork.

Despite their preference for persuasive approaches, EHPs also recognised the need for more punitive approaches towards the top of the regulatory pyramid:

“... when I arrived here I’ve realise that sometimes... I have to be an educator, but not all the cases will need... the education approach, some of the things they need you to be serious, they need you to be firm and say ‘this is the law’” (F1A interview pp47-8).

“...you teach one day but tomorrow go three steps back... as I’m teaching I think all the inspectors that worked here before they have done that, I won’t make any difference of doing that. For me it’s law enforcement, it’s prosecution and then that’s all that will make people change their mind. We are having people who are unemployed and they are here to make money, but they don’t care about the legislation, they don’t care about the law... and they will NEVER even find out what the law says about those things” (F1D interview pp24-5).

EHPs associated increasingly punitive approaches with serious offences, uncooperative people and persistent offenders (see Chapter 7) but they were also nervous that such approaches could put them in a difficult position:

“...when people see you as somebody who is there to help they are open, then we can help them, then it’s better” (B2 interview p34)

We must think about the poor and help them, but at the same time we “don’t want to be seen as the people sitting on top of other people” (F1C interview p23)

Therefore EHPs generally preferred to use more punitive approaches as the last resort when all other options had been considered. They often went to great lengths to persuade people that their interventions could benefit them and their customers and this ability to navigate the whole regulatory pyramid was evident when EHPs were asked what makes a ‘good EHP’? Here the most common attributes described by EHPs included a flexible but firm approach, the ability to make decisions and work independently, good communication skills and the ability to work with people from all backgrounds. EHPs commonly identified the ‘good EHP’ as a people person, the Region B EH Manager summarising this well as someone with the ability to:

“...build a rapport with the public, to be able to converse with EVERY person from someone who might be a cleaner, right through to a Director of a company, all walks of life” (Region B EH Manager interview p4).

Such skills could pay dividends, EHPs acknowledging that by respecting people they were more likely to respect you and be cooperative. Other important values included professionalism (e.g. current knowledge, accountability), honesty, dedication and a passion for environmental health.

One AD-EH inserted a presentation on the ‘Characteristics of a Good EHP’ into the delegate packs for EHPs attending the Alfred Nzo conference (van Deventer, 2007). This was almost identical to those identified by EHPs themselves above, though predictable additions included meeting the CoJ’s expectations. The AD-EH also called on EHPs to demonstrate high levels of emotional competence, a concept he borrowed from Daniel Goleman’s book *Working with emotional intelligence* which he recommended for all EHPs though it reinforced what EHPs themselves had identified above. In return the AD-EH promised EHPs job satisfaction, skills development and rewards but his presentation ended with a warning that these expectations cannot be met if managers don’t take a keen interest in their EHPs (van Deventer, 2007).

The author assumed that the nine Black African case-EHPs had experienced poor environmental health under apartheid. Some confirmed this and the author thought it might have informed their career choice but only F1C suggested an early vocational ethos when recalling an encounter with his school careers advisor:

“I grew up in a rural area and I’ve seen a lot of things that are being not addressed, and then coming to choosing a career... this career it was actually addressing all those problems and I thought about that, the generation that is coming after me... now we need to do something and I said... give them education and save the community, that’s my job...” (F1C interview pp6-7).

Careers advisors also steered D1B and F1D towards environmental health, but for the other seven case-EHPs chance meetings with EHPs in previous jobs or at school or via family, friends and neighbours led them to choose environmental health.

The nine district case-EHPs all acknowledged the broad and largely generalist nature of their roles and responsibilities. B1 was the only auxiliary EHP specialising in environmental pollution control but he acknowledged this still required a broad EH knowledge given the complexity of cases encountered. When asked to describe their roles and responsibilities, the nine district EHPs typically provided long lists of the areas and types of premises they regulated

and complaints they investigated before listing the nine functional areas that define municipal health services in the *National Health Act, 2003* (see section 5.2.2 above). They then added a 'catch all' caveat like "anything pertaining to public health within a district area" (B4 interview p2) or "as long as it's having a negative effect on the health of the community you are responsible for it, WHATEVER" (F1C interview p2).

A few EHPs likened themselves as 'jacks of all trades' but all combined their generalist work with more specialist responsibilities. For example D1A and F1C had responsibility for communicable diseases surveillance across their regions, whilst B1, F1D and F2A had regional health education responsibilities. B4 was engaged with many long term housing cases and during fieldwork Region D1 EHPs were focusing on the health surveillance of day care centres driven in part by a growing back log for permits. Colleagues F1B and F1C had also noticed that other Metropolitan Municipalities were moving towards more specialist roles for EHPs, but in their view the CoJ continued with the generalist model without exploring these alternatives.

Most case-EHPs were satisfied with their jobs and when asked what they most liked about being an EHP they spoke of helping people, solving problems and promoting health, and characteristics of the job itself like working with different people, the variety of the work and not being office bound. They also really valued their discretion and felt motivated by their work, particularly when it was acknowledged by the public. F1D loved being a health inspector, whilst D1B did not "have a problem waking up in the morning and coming to work" (D1B interview p19) and B4 stated that he was not working "because somebody's pushing you" but because he likes his job, it makes him happy (B4 interview p31) and he can "make a difference" (0010/B Observation p11). Only F1B and F2B were unsatisfied with their jobs. F1B was concerned about the lack of training opportunities at the CoJ and F2B gave no specific reason, but EHPs expressed other sources of dissatisfaction. A few were upset to still be working the same areas for many years but this was changing as the regions were beginning to rotate their EHPs more regularly. EHPs were also frustrated when they failed to improve their areas or when their efforts were not appreciated by managers and the public, but pay and benefits were the most common cause of dissatisfaction.

The case-EHPs did not consider themselves fairly paid for their work but there were many aspects to this. For some things were much better compared to their previous jobs as contract EHPs or in provincial government, though all remained concerned that their fixed car allowances were not covering these costs, particularly following recent increases in petrol prices. F1D was the only EHP to link her pay concerns to her official job title:

“...what happens is we are still regarded as Environmental Health Officers, so the permit that we get it’s for Officers, and an OFFICER is someone who’s got matric¹⁰ and... a qualification to work as let’s say a Metro. Police Officer they just want a matric and a driver’s licence, and an administrative officer, they want your matric... So we are more qualified, we’ve got degrees, we’ve got Diplomas... So that’s why the Officer part of it has an impact on our salary, because we get paid as Officers, we don’t get paid as qualified practitioners...” (F1D interview pp18-9)

To establish this F1D and colleagues collected job advertisements for ‘Officer’ posts from across South Africa and found these lesser qualified posts had the same salary range as CoJ EHPs. Further, F1D explained that the law usually referred to inspectors, not practitioners, but during fieldwork momentum was building towards legal recognition of the title ‘Environmental Health Practitioner’ and this was finally achieved in 2013 as acknowledged by the President of the SAIEH:

“Environmental Health Officer, to us, meant a professional who would just be looking at enforcement. An Environmental Health Practitioner is a person who should scientifically make a proper assessment of environmental health conditions and institute appropriate mitigating measures that would sustainably address environmental conditions. This is a true description of what we are trained to do, as professionals practising within the field of environmental health” (Chaka, 2013b)

Another concern about pay was the difference between the CoJ and other Metropolitan Municipalities which did not seem fair because the CoJ was the biggest municipality in South Africa. Managers acknowledged this and it was common knowledge that EHPs could earn around R2500 more, with higher car allowances and merit increases in salary, in neighbouring Ekurhuleni Metropolitan Municipality. Two EHPs readily admitted they would move to Ekurhuleni if a suitable post came up. Others likened the CoJ to a “training ground for EHPs” (D1A interview p56) or the “University of Gauteng for Environmental Health Practitioners” (Region B EH Manager interview p16) before they moved to better paid jobs elsewhere. All four regional offices were experiencing high levels of staff turnover during fieldwork. For example Regions B and D1 had lost five and three EHPs respectively during the last financial year, and there was widespread concern about its implications as summarised by F1D:

¹⁰ Matriculation, often shortened to matric, refers to the qualification received on graduating from high school at around 18 years old. It is now called the National Senior Certificate and is the minimum requirement for admission to a University Bachelor’s degree course.

“... we are having these inspectors who are coming in and out because of the salary issue and the more better they get paid they will leave the city and with the changing of inspectors it actually takes us back because we need somebody who will become the expert in an area... if the person stays there for a year and leaves then the new person doesn't know what is happening there, so it actually doesn't take us any further with... bringing out the changes” (F1D interview pp44-5).

But EHPs also expressed concern that some of their colleagues, particularly younger EHPs, were preoccupied with money and considered this unprofessional and lacking a commitment and passion for environmental health as summarised by B4:

“You are not just here to earn a salary, you are here to make a difference” (0010/B Observation p11)

B4 also expressed concern that some EHPs still come to work “just to simply work for the council” and this attitude created problems when they lack practical experience (B4 interview p32). Similarly, F2A thought the greatest challenge facing EHPs in his region was delivering good results before raising questions about money (F2A interview p33). In contrast F1C did not think EHPs were in it for the money, but they would be happier and get the job done better if the CoJ looked after them and valued them more (F1C interview pp27-8).

Opinions varied about the differences in pay between EHPs themselves. Most case-EHPs did not think their managers were paid fairly, D1A commenting that if they were they wouldn't keep resigning as her own Operations Manager had just done so (D1A questionnaire p13). Ongoing reforms to pay scales also meant that newly appointed EHPs could be earning more than experienced EHPs and even Operations Managers, therefore D1A felt less motivated to assist her new colleagues (D1A interview p57).

All the case-EHPs were members of either the South African Municipal Workers Union (SAMWU) or the Independent Municipal and Allied Trade Union (IMATU) and many explained that union membership was their Constitutional right (Section 23). Fieldwork coincided with public sector strikes across South Africa. The CoJ was unaffected during fieldwork but the strikes were very visible and often mentioned by EHPs. EHPs were also working with the unions and the CoJ via a bargaining council to address their pay concerns and there was some optimism of a resolution. F1D also thought the HPCSA should be lobbying for EHPs salaries commensurate with their ‘practitioner’ status (F1D interview pp18-9).

Lastly, most case-EHPs would also recommend a career as an EHP to a suitably qualified friend, though D1A and D1B would add a 'friendly warning' about the realities of working at the CoJ, particularly the pressure on EHPs to meet targets. This chapter now explores how the professional identities of EHPs could influence their work.

6.4 The views of EHPs as professionals

All the case-EHPs considered themselves professionals. This was partly due to their mandatory yearly registration with the HPCSA to practice environmental health but professionalism encompassed many other aspects. For some being a professional meant working hard, being up to date, committed and accountable and making a difference but EHPs were also united by their concern that their profession was under threat.

The case-EHPs were divided in their views of the HPCSA. They recognised its role in setting standards and regulating their practice, but some complained that they got nothing from HPCSA membership - which they paid themselves - and only heard from them when fees are due or someone is nominated onto the HPCSA Boards. Some EHPs suspected this was because the HPCSA concentrated mostly on nurses and doctors and, after acknowledging this too, D1B wanted them to produce more guidelines for regulating EHPs (D1B interview pp13-5). EHPs also believed the HPCSA should be doing more for their professional development. F1B knew an engineer whose professional organisation regularly updates them on new developments unlike the HPCSA (F1B interview p16) but there were signs that this was changing.

On the 1 January 2007 the HPCSA's Professional Board for EHPs introduced a Continuous Professional Development (CPD) requirement for EHPs (excluding those doing community in-service training) to complete 30 Continuous Education Units (or 30 learning hours) over a 12 month period, supported by documentary evidence maintained within a CPD portfolio. In coming years EHPs would be randomly audited by an Education Committee, with non-compliant EHPs facing sanctions including de-registration and criminal sanctions. One senior EHP on the Board for EHPs welcomed this as "...a challenge to those who don't want to be developed..." (Van Niekerk, 2007 p10) but the Region B EH Manager was more cautious. He had recently completed his Master's degree thesis on CPD and had been helping the HPCSA develop this system but he warned of new problems like the lack of CPD courses available and whether de-registration was wise at such an early stage and amidst a national shortage of EHPs (Region B EH Manager interview pp19-21).

Before democracy there were separate Black and White professional associations for South African EHPs but they combined to create the SAIEH in 1995. The hosting of the 8th World Congress of the International Federation of Environmental Health (IFEH) in Durban in

February 2004 by the SAIEH helped build momentum when the IFEH President, Jerry Chaka, was also President of the SAIEH. The SAIEH has the following vision and mission:

Vision: to be the nationally and internationally recognized leading professional organisation in the field of environmental health

Mission: to promote the science and practice of environmental health thus capacitating members to render a professional service and ensure optimum participation of all stakeholders in environmental health matters (SAIEH 2004)

In February 2006 the author attended the bi-annual SAIEH conference in Durban. The first two days featured EHPs and other speakers from local government and NGOs across South Africa covering many EH subjects. The third day focused on delivering municipal health services with a panel from local government, the NDoH, the SAIEH and the Universities and many contributions from the floor. The conference was aimed more at managers than front line EHPs, but by bringing more than 100 South African EHPs together to share their knowledge, experiences and concerns the SAIEH was playing an important role in organising EHPs and influencing policy. Back at the CoJ however the SAIEH was largely unknown to front line EHPs, but this section now explores their concerns about the decline of the profession.

Within the CoJ case-EHPs described generally poor levels of environmental health awareness amongst senior managers and politicians. During his opening address to the Alfred Nzo conference for EHPs the Executive Director - Health admitted that in the past health services were only seen as doctors, nurses and clinics but EH services were no longer a Cinderella and should assert themselves and claim their rightful role (Nzo 0005Obs/Central p1). But EHPs and managers believed people did not know who they were and that the Executive Director - Health did not know much about environmental health. They welcomed the four new Central Unit Director posts, but some preferred the structure of Ekurhuleni Metropolitan Municipality whose Director of Municipal Health Services (EHP Jerry Chaka, also SAIEH & IFEH President) was in their view better positioned to support and promote EHPs (0003/B Observations p6).

The case-EHPs were also concerned that some core environmental health functions (e.g. noise, air pollution, waste management) were being lost to other CoJ Departments and the Environmental Management Inspectors mentioned in section 5.2.8 above. F1C was concerned that EHPs would be reduced to doing “pretty small things” that “hide the weight” of EHPs (F1C interview pp53-5). These concerns were enhanced by the emergence of Environmental Health Assistants, typically educated to matric and responsible for assisting EHPs and their managers with technical tasks like sampling and administration. In 2005 the HPCSA formally recognised

their role - though it dates back to the colonial era (Anning, 1937) - but F1D considered this the greatest challenge facing South African EHPs:

“...it looks like our qualifications are going to fade because they are going to look at any person who only have Matric to do environmental health. So the qualifications and our environmental health... looks like it's going to fade away - because they are bringing in the assistant which will be 2 years and... now they wanted to come up with the Metro. Police in our job, with only Matric... they will have trainings even though you don't have a diploma or a degree or whatever in environmental health that will actually be the health inspector” (F1D interview pp45-6).

The Region F2 EH Manager thought these developments were related and becoming a reality:

“...already JMPD [the CoJ's police] wants to [test] diesels, [Department of] Environmental Management wants to take over air pollution and water pollution.... originally your Act states that these are the functions of the Health Department within local government, but now if we don't take it seriously and we don't do it, it will go. If environmental health opened their eyes what will be left, just vacant stands and barking dogs and things like that, which you can give to an assistant to do. So if they don't take their work seriously, this is the way they will go. I think it's just they must take their work seriously. And our management as well, they must, I think they just need proper guidance on what is environmental health” (F2 EH Manager interview p26).

Further, despite the Executive Director - Health's reassurances there was still concern amongst EHPs that environmental health remained a Cinderella:

“The profession is not marketed. We are not known and we are just being taken as the people who just pass Matric and then are given a job to go and CHECK waste water in the street, go and CHECK building rubble on the sidewalk. They don't know what it involves, how important it is” (B4 interview pp32-3).

“ ‘Dr Bismilla [Executive Director – Health], you know what you are doing with us, if you take a doctor and you ask him to make beds in the hospital, that's what you are doing with the EHO'. We concentrate 50% on vacant stands, on grass cutting, on things like that you can give to somebody who's just come out of school to do it. So I compare it to a doctor who's making beds in hospital. You don't use the EHO for what he was trained, you demote him” (Region F2 EH Manager interview pp10-1).

“We could rather spend our time and make sure that food premises complies, that we take food samples which we don’t do, we don’t do food samples. Look at the air emissions, what’s happening in the factories, those kind of things. We have studied for that. But I mean grass cutting, if the grass is higher than this I’ll still debate it, is it really a health nuisance? Grass is higher than me... is somebody going to die of long grass? But they can die because of a food factory. I’ve got a food factory here, I can show you, it’s horrifying. They are manufacturing sauces in a panel beating shop, that’s our work, to go and sniff out those places. Grass cutting, I mean, really, give it to City Parks” (Region F2 EH Manager interview pp10-1).

In response EHPs thought the HPCSA and the SAIEH should be doing more to protect and promote EHPs. They also thought the National Director of Environmental Health should be doing more, but this post had been vacant for long periods and senior EHPs remained concerned about the lack of national direction and the risk that the post could disappear altogether. A new National Director was appointed during fieldwork and her representative acknowledged the past problems with capacity and assured EHPs they were now ready to assist them to “...ensure this noble profession is taken to higher heights” (Murdoch in Nzo 0005Obs/Central p9). Given past events CoJ EHPs remained hopeful but sceptical.

Given this context it’s not surprising that only two case-EHPs (B1 and D1B) considered themselves as part of a national public health workforce. The others identified themselves more as local guardians of environmental health. Operations Manager B3 linked both by stating that EHPs have to protect and serve the community to make Johannesburg a world class African city (Operations Manager B3 interview pp35-6), but the local identity of most EHPs was also not surprising given their local government work and the relatively undeveloped state of the HPCSA and SAIEH in 2007. Six years later progress was being made with an EHP (Aneliswa Cele, former SAIEH secretary) appointed National Director of EH and the SAIEH and NDoH contributing to South Africa’s first National Environmental Health Policy (NDoH, 2013) and establishing a National Environmental Health Forum (Chaka, 2013b). In 2012 the Professional Board for EHPs of the HPCSA also started publishing a bi-annual newsletter, *Environmental Health News*, featuring useful articles for EHPs alongside reminders to pay membership fees.

6.5 The personal safety of EHPs

Personal safety was a recurring theme for EHPs and there were many aspects to this. The nature of their work, particularly working alone, visiting places and people they may not know and the confrontational nature of regulation exposes EHPs to more risk than many other occupations. The EHPs recognised Johannesburg’s reputation for violence which you had to accept to work

there, inner city EHP F1A commenting that “anything can happen when you are working there” (F1A interview pp17-8) but EHPs also thought their safety could be managed much better.

EHPs all recalled being threatened in their work, particularly being obstructed, warned to ‘go away’ or having their paperwork ripped up for example. Some had been locked in rooms, threatened at gun point and one EHP suspected her car had been vandalised by business owners who had threatened to get her. Two EHPs recalled stories of colleagues being killed. D1B described a warehouse inspection when an EHP asked about unlabelled packages and was killed because the operators thought the EHP knew they contained drugs (D1B email of 24 March 2010). D1B also recalled the CoJ removing telephone containers from street corners used by hawkers and others for trading. In response the local people were unhappy and accused the local EHP of their removal and he was killed (D1B email of 24 March 2010). F1B recalled a Township EHP who fined somebody and was later killed for doing so (F1B interview p37). The author was unable to verify these accounts but the Executive Mayor dedicated one publication to the 12 CoJ employees killed at work during his first five years in office (CoJ, 2005b).

F2B thought her gender and race were also a factor, with female EHPs at greater risk in the field and she also thought this might explain why so few white women (like her) were becoming EHPs. Amongst the male EHPs observed the author rarely detected any macho safety culture, indeed all the EHPs were open about Johannesburg’s dangers and even experienced male EHPs, including former soldier F1A, admitted they were sometimes frightened at work.

The results found that safety concerns usually related to specific areas, certain tasks or premises, specific cases or some combination of these factors, as summarised in Table 6.1 below. Certain areas had reputations for danger, particularly in the townships and the inner city, and EHPs were reluctant to work there for fear of being targeted. Some areas and premises were considered ‘no go’ zones by EHPs for routine work and could only be visited with police backup. Work in remote and inaccessible areas during activities like water sampling was potentially hazardous but EHPs were always on the lookout for people, snakes or unstable river banks for example. EHPs also notified office colleagues of their whereabouts and sometimes worked in pairs. They took great care working in informal settlements, conscious that well founded tensions (e.g. fear of forced removal) could get them into trouble unless they worked with settlement leaders from the outset. In one informal settlement with serious and on-going sanitation problems there was obvious hostility towards the EHP who cut the visit short as a result (0009/B Observation p14).

Table 6.1 Factors EHPs associated with increased personal safety risks

Areas and premises
Areas with reputations for violence Remote and inaccessible areas Informal settlements Bad buildings, night clubs, prisons 'Illegal' premises (e.g. shebeens, hijacked buildings, informal car workshops)
Characteristics of people
Uncooperative people
Tasks
Working alone Entering buildings Working higher up the regulatory pyramid (e.g. fines/summons) Blitz work

EHPs also associated certain premises with a greater likelihood of safety problems. These included bad buildings that might shelter other activities (e.g. drug dealing, prostitution) and night clubs whose owners were frequently uncooperative and whose patrons could be antagonised by the presence of CoJ officials. EHPs also associated the inspection of provincial government prisons as potentially more hazardous even when planned in advance and escorted by prison officers at all times. Premises associated with illegal activities put EHPs at greater risk, particularly because they might not realise until entering the premises. For example D1A recalled an encounter with an armed caretaker when she visited an accommodation establishment for a routine inspection:

“Leave, if you don’t leave, you see this street? I’m going to blow your head and your brain will be scattered there” (Caretaker in D1A interview p44).

EHPs were wary of encounters with potentially violent people and would usually leave the area/premises and call for backup if they thought their safety was at risk. Encounters with uncooperative people were common but sometimes this went further and EHPs recalled encounters where they had been locked in rooms, thrown out of premises or threatened with violence if they did not leave. Indeed F1C thought the greatest challenge facing EHPs were public resistance and intimidation and he found it “psychologically disturbing” to have been thrown out of a building and understood the reluctance of EHPs to return to areas they have been told to stay away from (F1C interview pp50-1).

Returning to Table 6.1 above EHPs acknowledged that working alone increased their vulnerability. Great care was taken when entering buildings, particularly those in the inner city and away from busy areas. The use of increasingly punitive approaches also increased the risk

because, as one Region D1 with more than 20 years of experience put it, you never know how people will react when served with a fine/summons (0004/D1Observation p17). Blitz work targeting EH hotspots exposed EHPs to greater danger and sometimes required them to wear bullet-proof vests but they were also better prepared and accompanied by (armed) Police and other CoJ organisations.

Some personal safety controls were in place. On a daily basis EHPs sometimes did not notify colleagues, managers or administrators of their whereabouts but after a few months they developed a good working knowledge of their areas. Areas, premises and/or buildings known to be more dangerous were designated no-go zones and only visited in numbers and/or with the Police. When encountering unforeseen dangers EHPs emphasised the importance of leaving immediately and returning when appropriate with colleagues, managers and/or the Police. Further, EHPs considering more punitive approaches would routinely request similar backup if they suspected a person could get violent, though this was hard to predict.

EHPs generally felt supported by managers (see section 5.3.3 above) but some believed their support for managing safety was lacking. For example some described a perception amongst managers that EHPs brought trouble upon themselves and they must deal with it. EHPs were offered counseling after incidents and could request Police support anytime but in reality this could take hours because the Police themselves were so short staffed. Knowing the local police helped, but D1B recalled calling 10111 [the national emergency services number] in desperation once when her colleague was being threatened (D1B interview pp32-3).

A new task team was being established by senior managers to investigate these problems, with one EHP delegate per region. F1C hoped they could be “the voice of all the EHPs” and produce recommendations to ensure managers treat these cases seriously in the future (F1C interview pp50-1). Initial suggestions from EHPs included dedicated Police support for the CoJ and the prosecution of all who obstruct EHPs but past experience made EHPs sceptical of improvements and some were considering getting their Unions involved because, as F1C put it, “...at the end of the day it’s our life involved” (F1C interview pp50-1). This chapter now explores the views of EHPs about regulation, starting with their role as Peace Officers.

6.6 The EHP as Peace Officer

All the case-EHPs apart from B1 were Peace Officers authorized by the CoJ to enforce the law following the completion of a law enforcement training course. New starter B1 had not yet attended this course but had regulatory experience from his previous jobs and in the meantime relied on his Peace Officer colleagues and managers when taking more punitive approaches. Most case-EHPs had studied environmental health law enforcement at University, but F1C

admitted he had not and Region F2's EH Manager was notably vociferous about the need to address this gap in the Universities:

“...I think we must get into the Universities, I think they must really look at their curriculums, make it more what the EHOs are doing on the job. Because I think sometimes they create a picture for them that is not a reality, and they get the shock of their life when they start and see they must prosecute this person [laughs] and all those things, like that nuisance building here, I mean these things, and you throw a junior EHO in there and he won't know where to start, what must he do, and the notices that they must write. I think that the lecturers are a bit out of touch with reality, especially in Jo'burg, with the conditions that we have here... Sometimes I think they must get real environmental health, people that's working, to come and input into the lectures and say 'this is the kinds of things that you get, this is how you must solve it'...” (Region F2 EH Manager interview pp20-2).

EHPs had fond recollections of the week long law enforcement course and cited benefits including an awareness of regulatory procedures and the courts, the legal rights of offenders and their own responsibilities and accountabilities as Peace Officers and local government officials. Course ring binders full of legislation and standards sat beside the desks of most EHPs for easy reference. They also valued the yearly refresher training for EHPs, past topics including updates on new legislation, legal loopholes, writing fines correctly, building a case and how to manage with people. Some EHPs and managers also called for more frequent law enforcement training, particularly for inexperienced EHPs.

Experience was vital and the Region B EH Manager expressed concerned that it could take six months to get new EHPs trained as Peace Officers but:

“...if I can get them trained tomorrow they STILL have got a piece of paper but they haven't got the experience and the knowhow and the confidence to go out and do it” (Region B EH Manager interview pp15-6).

The Region F2 EH Manager illustrated this problem when recalling a scrap metal factory making food sauces:

“Next week two young ones [EHPs] go and tell the guy to put in the roofing and protective clothing, but you can't do that after you've issued the guy with a cease trading notice. You are contradicting your own field. But you see they don't think of this [laughs].... A week ago you've given them a cease trading [notice], because I went

with them on a blitz... But then just after that [the inexperienced EHP] takes his colleague and says 'Now you must put in ceiling and' but the building I mean, totally, totally, there's no way that you can approve that as a food premises. So you can't after you've issued a cease trading, I mean, go and tell the guy that now, all these things, because first his building I think must comply, so I said 'No way, [inexperienced EHP]'" (Region F2 EH Manager interview pp24-5).

For managers experiences like this reinforced the need for the on-going training and close supervision of all their EHPs, particularly those with limited CoJ experience. Further, those moving to the CoJ from rural areas also required more training and supervision:

"One thing that we've realized is that EHOs that works in the rural areas and EHOs that have been here, their work is TOTALLY different. So it's a huge adjustment for them, to come out from an area that's more rural then to come and work. Here we are more law enforcement orientated, in your rural areas you are more education oriented" (Region F2 EH Manager interview p6).

The Professional Board for EHPs of the HPCSA also recognised problems with the law enforcement knowledge of EHPs and in response produced a newsletter article reinforcing the need for persuasion AND punishment (as below) before describing the basic steps in preparing a prosecution when all else fails:

"There is always an expectation that all Environmental Health Practitioners constantly engage in the health education of the consumers of our services, particularly the general public. Our task is to educate, educate, and educate.... It does not, however, work single handedly. It is accompanied by awareness campaigns involving health promotion, roadshows, street drama, etc. The question still remains as to what needs to happen when all of these fail to achieve the desired results?"

...It is expected that when all else has failed, people who violate the right of the public to a safe and clean environment should be brought to book" (Ngqulunga, 2013 p8).

Most case-EHPs had also attended regulatory training courses organised by the CoJ and covering technical subjects (e.g. food risk management, food fortification and fats and oils sampling) and service delivery subjects (e.g. customer services, *Batho Pele* and conflict management). Some EHPs joked about how many times they had attended customer services courses (almost yearly), D1B suggesting this could be due to complaints that officials are rude and disrespectful but she believed this had no basis in fact:

“You don’t come and sit there [office reception] and people don’t attend you. You will be sitting there and about five people would ask you ‘Have you been served?’ ...even in the area we treat our clients very well. So maybe because we are doing the right thing it’s quite annoying to have to go to so many customer care training” (D1B interview pp12-3).

6.7 The general views of EHPs about regulatory law enforcement

EHPs were largely complementary about the law. Those with apartheid era experience reflected how the ethos of the law had shifted from being strict and highly prescriptive to becoming more accommodating and flexible. The Region B EH Manager reflected that EHPs now needed a far broader knowledge than before to “...know WHY are you asking for something, not just ‘the law says’” (interview pp21-2) and achieving this was among the greatest challenges for South African EHPs.

The case-EHPs were almost equally divided between those who prefer precise definitions of EH standards (B2, B4, D1A, F1B and F1C) and those who preferred standards subject to individual interpretation (B1, D1B, F1D, F2B), with F2A undecided. In the field EHPs valued the greater discretion and flexibility of the new legal framework, particularly when applied to complex cases like the informal sector. But some were concerned about what their colleagues, particularly those with limited experience, were doing because for “...one inspector something can be bad, and the other one think ‘ag, he can still get away with that’” (F2B interview pp6-7).

The case-EHPs did not recognise most of legal uncertainties described in section 5.2 above. Instead, as Hutter (1988) found, these uncertainties were considered problems to be solved and EHPs were more concerned about the daily practicalities of regulation, particularly the application of so much law. The DD-EH thought the legal knowledge of EHPs was of “Biblical proportions” and bringing it together to “function in harmony” was core to their work (DD-EH 10 April interview p5). EHPs frequently referred to the law and there was general agreement amongst them that some laws, particularly the *CoJ Public Health By-laws, 2004* were easier to understand than others. After five years at the CoJ B2 did not refer to the law every day but he still encountered cases where the law and possible regulatory approaches actions were not clear (B2 interview pp15-6) and it was common for EHPs to call on their colleagues and managers for assistance. EHPs were concerned about the lack of guidance in certain areas, particularly for closing premises, but the Central EH Unit was responding to these concerns.

One of the greatest challenges for EHPs was regulating the informal sector as explored in section 7.7 below. Another challenge involved long term cases, particularly in housing where tracing building owners could take years whilst the tenants - often living in very poor conditions

- remain silent for fear of eviction. One EHP had observed how buildings had deteriorated in the years following his intervention such that he questioned whether this work was a good use of his time. EHPs were also concerned that their effectiveness was limited because they do not routinely work evenings or weekends. Complaints could be followed up the next working day but this might only result in a warning because the evidence had disappeared.

The requirements for permits/licenses also presented many challenges for EHPs. There was a significant backlog in applications across the four regions whilst EHPs constantly discovered new premises. Further, the payment of fees for some permits/licenses created an 'unwritten promise' in the applicant's mind that they would automatically get their permit. Standards could also drop soon after businesses receive their permit/license because some considered it their right, not something that was earned and could be lost. Relations between EHPs and applicants could also be strained by the multiple licenses required by some premises. For example one Operations Manager recalled that some night club owners assume that once they have their liquor license they can operate; she then spends years chasing the owners and using increasingly punitive approaches to secure the other permits (B Operations Manager interview p45).

The law enforcement training for EHPs included the identification of legal loopholes, but only F1B flagged his on-going problems with them during fieldwork. He thought the *CoJ Public Health By-laws, 2004* required urgent review because the (Section 63) requirements for accommodation establishments place the duty to apply for a permit on the 'person' who conducts the establishment, not the owner, and was being exploited by building hijackers:

“Let's say I hijacked your house and chased you away. I go and apply for a permit. I've cleaned my house, everything is nice and clean, the health inspector comes and says 'oh, this is fantastic, let me process your permit because everything is in order'. He gives me a permit. They [EHPs] don't enquire whether I'm the owner, the fact that you applied HERE it's like you have a right to occupy the house... I get a permit... I rent it to different people and they will have the confidence that this person is the owner of the house because he has given him or her documentation” (F1B interview pp31-3).

F1B feared this loophole was legitimising criminal activity and therefore he and his colleagues were spending more time checking property ownership. Further, one former Regional EH Manager thought EHPs should be working much more closely with the CoJ Legal Department to address problems like this (AD-Res 12 July interview p2).

Another challenge was the use of English as the official language of regulation. All paperwork was in English, but most visits were conducted in other South African languages. EHPs were

potentially disadvantaged if they did not speak isiZulu for example and some commented after encounters that many South Africans do not speak English. No translation services were available but EHPs supported each other with translation or enlisted the help of the regulated and others (e.g. friends, relatives) during visits. In areas like the inner city where non-South African languages were common this happened regularly, but EHPs were comfortable that provided their visits were cooperative they could work around these problems.

The Region B EH Manager was also concerned that many inexperienced EHPs spoke good English but it was not their “mother language” and completing legal paperwork in English was a different thing altogether (Region B EH Manager interview pp15-6). F2A commented that ideally all legal paperwork should be written in the language of the regulated as well as English (0007/F2 Observation pp11-2), but this assumed people were literate which was sometimes not the case. Therefore at the end of each visit EHPs spent time explaining (in the appropriate language) all English paperwork they were about to hand over and what would happen next. During fieldwork the CoJ was publishing advisory EH information in all eleven South African languages and others (e.g. Mandarin) and EHPs were busy distributing this during fieldwork. There was some grateful acknowledgement from the Chinese community in one shopping mall, though some managers feared there could be translation errors because they had been unable to check final draft with the original translator (0009/B Observation p9).

In summary EHPs held pragmatic views about the laws they used to regulate environmental health each day. Bringing these laws to life was challenging but EHPs had developed a wide range of strategies to work around them whilst awaiting further guidance. This chapter now considers the views of EHPs about the criminality of environmental health offending.

6.8 The uncertain criminality of EH offending

Crime has long been a sensitive subject in South Africa and fieldwork coincided with a broadcast by BBC World Affairs editor John Simpson on this subject from inner city Johannesburg. Broadcast the day before President Thabo Mbeki’s State of the Nation address, Simpson (2007) described a city at war with itself where inner city buildings were empty because of crime and the number of deaths on some days were comparable to those in Iraq and he also emphasised President Mbeki’s recent denial that there were any problems with crime in South Africa. One of South Africa’s leading criminologists also describes a country at war with itself where crime is common, particularly for the poorest in society, but the government sometimes denies its existence (Altbeker, 2007).

Crime was mentioned constantly by EHPs during fieldwork. All described its problems in their areas and its wider impacts on environmental health and their own personal safety (see section

6.5 above). Two of the four regional offices were burgled during fieldwork with valuable photocopiers, computers and printers taken despite 24 hour security protection. F1B summarised the concerns of EHPs well by commenting that sometimes his cases were not being addressed because “South Africa has got too many crimes” and environmental health is not a priority (F1B interview pp27-8). Similarly, Operations Manager B3 recalled inspecting a nightclub when an owner responded:

““ok, what is wrong? Did you see, there was this woman who was killed the other day, and you are telling me I’m making noise!”” (Operations Manager B3 interview pp51-2).

Reflecting on the lawlessness he had witnessed Region B EH Manager described people who dump rubbish on the pavement because “for the last 5 years nothing has happened to me” (interview p13). The start of fieldwork also coincided with the Executive Mayor’s State of the City Address that drew attention to these attitudes, including for EH offences:

“It is unfortunate that people who complain about so-called ‘big crimes’ such as robbery or murder often have no compunction to commit ‘small crimes’ such as traffic offences, illegal dumping, engaging with acts that lead to pollution and some even fail to pay rates or taxes. I urge you to observe the speed limit, pay your traffic fines, do not dump your rubbish on open sites, and pay for the consumption of services such as water and electricity. Repent and serve the community” (Masondo, 2007 p21).

Perhaps unsurprisingly EHPs varied in their opinions of the criminality of EH offences. B1 thought all offences were criminal because, regardless of the offence, contraventions of the law were an offence for which you could be prosecuted. Other EHPs thought only some offences were criminal because most of their work was about promoting health, not punishing people. One EHP summarised this well, stressing that EHPs use criminal procedures when people behave in criminal ways, but he was hesitant to criminalise people because environmental health was a function of the Department of Health (F1A interview pp40-1).

EHPs were also reluctant to describe EH offenders as criminals. They did not think there were any typical offenders because each case was different, but EHPs aligned most people with Kagan and Scholz’s (1984) *organisationally incompetent*: people who broke the law because they lacked knowledge and who therefore required education and persuasion that ‘this is wrong’ and ‘this is what you need to do’ as EHPs often described it. More punitive approaches were sometimes necessary, but generally as a last resort when other options have not worked.

So-called technical offences were less likely to be considered criminal by EHPs compared to those where motive or intent were involved. For example more criminal offences included intentional acts (e.g. obstructing EHPs, using adulterated cooking oils, timing offending outside working hours) or omissions (e.g. failure to provide ID, trading without a permit), persistent offending and people motivated by profit at the cost of safety. Other offences more likely to be considered criminal included serious offences (e.g. illegal dumping, building hijacking, food adulteration) and offences affecting the public, particularly children and the poor.

Occupation was also a factor, with uncooperative and/or dishonest behaviours most often associated with nightclub and bad building owners. Business size was sometimes a factor, with EHPs aware that compliance was easier for large businesses but they also should know better. At the other extreme, EHPs were very familiar with the dilemmas facing SMMEs, particularly in the informal sector. They responded in very pragmatic ways to try improve conditions there (see section 7.7 below) but EHPs also knew informal traders could be deliberately evasive and dishonest. EHPs also associated nationality with criminal activities and they sometimes blamed gangs from Nigeria, Somalia and the Democratic Republic of the Congo for building hijackings for example.

6.9 EHPs' views of criminal sanctions and the criminal courts

The spot fine/summons was the most common punitive sanction used by EHPs. They generally considered it in response to intentional and/or persistent acts of non-compliance and when other approaches had not worked. Serious offences and those affecting members of the public were also more likely to result in a fine/summons on a case by case basis, particularly during blitz work targeting offending hot spots. When asked about the fine/summons, EHPs thought they were needed to punish offenders, to deter future offending and to encourage compliance by making people aware that EHPs have legal powers and should take their interventions seriously.

EHPs also valued the threat of criminal sanctions when using more persuasive approaches like education, persuasion and negotiation. For example EHPs warned people that an offence could a R500 fine or that their fines are like JMPD [CoJ Police] fines, where non-payment leads to a Court summons and possible prison sentence. EHPs also sought to persuade by warning people of the futility of the fine/summons:

“So you show them that the R1000 that I’m going to fine you, you would have repainted the wall as I requested, you would have bought paints and painted the walls. So now you’re going to give me that R1000 because you don’t want to paint the wall and I’ve got to come back AGAIN next month to give you another R1000 because you won’t have money to buy the paints again” (F1D interview pp39-41).

But EHPs also had many concerns about the fine/summons as a sanction. All recognised they were sometimes necessary, but they questioned their effectiveness unless combined with education and awareness raising activities. Administering the fine/summons someone could also put the personal safety of EHPs at risk (see section 6.5 above), but all the EHPs provided examples of persistent offenders who simply paid their fines and then carried on as usual. They also knew that some persistent offenders were prepared to call their bluff because the chances of offending being detected were so remote, particularly during evenings and weekends. The J175 procedure existed to prevent this problem, in theory, by enabling EHPs to force persistent offenders to court without the option of paying fines but the next section raises important questions about the effectiveness of the courts in such cases.

The maximum sanctions for environmental health offending were another concern of EHPs, relating back to the discussion in section 5.2.6 above. Sometimes EHPs defended them on the basis that, like traffic fines, sanctions were standard for all offenders regardless of socioeconomic status. But EHPs also knew the consequences of this:

“... in the day care centre a fine is R1000, and then in the informal day care to them R1000 is almost the whole profit which they are generating a month” (D1A interview p53).

EHPs acknowledged that those on low incomes frequently complained about this and some were unable to pay. They were also concerned that for others their fines were too low to be effective, particularly as a punishment for serious offences. Some EHPs had also seen nightclub owners temporarily increase admission fees to cover the costs of a fine/summons, but perhaps the greatest concern of EHPs was that they did not know what happened after their fine/summons had been served and this could undermine their authority:

“...last year I remember I gave this guy a fine and when six months later I saw him... and he had a fine and obviously he didn't pay the fine, he just took it. Ok, and I gave him another fine because it was keeping on again, giving notices and he just took the fine and put it away in a draw. And I wondered who follows up these fines if they are not paid? ... he doesn't respect me when I go, because he knows that whatever I say he's not going to do it, because there is no mechanism to force him to do it” (F1B interview pp40-1).

“...immediately I've issued a ticket I will take it to the Metro offices. From there where is it taken? Either it's paid, I don't know who is controlling that? I think that is one of the areas that needs a research for our Environmental Health Practitioners... can I do a

mini research as to check how many fines have been issued at the City of Johannesburg and how many have been paid, how many are not paid, what is happening with those that were not paid, were there anyone arrested?” (F2A interview pp31-2)

“We can work so hard, 100% for everything, but did we really do, make an impact?... We’ve written how many, 200 and something fines, so what? We don’t get the money back... does it really make an impact? How many of the fines were paid, we don’t know... we’re not even in control, it goes to JMPD’s hands” (Region F2 EH Manager interview p14).

Such problems led F1C to liken the fine/summons to a “dead snake” (F1C interview p42) that had prompted him and another EHP to carry out further investigations. F1C had discovered that some of his fines had been dismissed in court because of errors, but he maintained there were no errors and suspected something else was happening (F1C interview p42). In one month Operations Manager B3 had served 20 fines/summons but on visiting court only one had been paid, some were not recorded and vital control documents had gone missing. She met with the Public Prosecutors to investigate further and they complained that there were many mistakes in the paperwork (e.g. no time recorded, lost carbon copies) and she illustrated this with an example on her desk from one of her EHPs:

“Ok I’ve just got one here you see, but I’m still trying to work with them, we are meeting next week just to see where our problems lie, exactly. You find that I’ve seen one where because it’s in triplicate, but because you give someone a summons you think ‘oh, I didn’t write in the time’ but on a control document then you can see it’s in clear pen. Ok, this person has just thrown them away... Even if you put initials there, you don’t put their ID, you know, even if there’s scratches there they will not issue it...” (Operations Manager B3 interview pp23-4)

Senior managers recognised the high numbers of cases thrown out of court and the need to follow the correct procedures for the completion and submission of paperwork and this topic had been included in recent law enforcement refresher training for EHPs. The correct completion of paperwork was even more difficult when sanctioning the informal sector which F2B likened to an ‘on-going circle’ that might never change other than with education and time:

“...we’ve got a lot of people that have got premises... in buildings that’s permanently. THOSE people pay their fines, because they know tomorrow we’ll get them there again... They’ve got nowhere to go. Now you’ve got... the people that’s like the hawkers, the informal traders, the people who are like selling food on the corner like the

informal traders, you prosecute them, they give you the wrong names, the wrong addresses, they haven't got ID books. Now you prosecute them, tomorrow they're back on the same piece [of land] because they've given you the wrong information and they don't pay it. So prosecutions there don't help, they don't help" (F2B interview p24).

There was some evidence that things were improving in the inner city because EHPs had recently been working with colleagues and the JMPD following up cases involving unpaid fines and persistent offending with warrants of arrest. But EHPs also did not trust the local criminal justice system because it was already overloaded and could get worse with the coming 2010 World Cup. Using the JMPD traffic system had advantages in theory, particularly the storage of criminal records and any outstanding fines and warrants of arrest on the ID card database which most police officers had access to in the field. EHPs suspected this was why some people, particularly informal traders, did not carry their ID books but they also acknowledged that the chances of being stopped by the police were small if you did not drive and avoided public transport. Operations Manager B3 suspected that the JMPD did not get paid for processing the fines/summons of EHPs, but she thought other reasons might explain her recent experiences:

"So they [JMPD] concentrate on their own responsibilities for traffic. What is that noise, or food premises which are dirty or whatever gotta do with the traffic? ...I used to be very vacant and tried to ignore this. You go over there and say 'ok, here are the summonses' and there's a huge pile like this... summonses that you've issued six months ago, they are not even on the system! Nowhere on the system! Then you have to... go to this Station Commander or whoever is in charge, the Superintendent, and you complain and he says 'no, no, no, we can resolve it.' And it means that he must go there and resolve it, but why? They have their own [issues], like we have our own issues, yeah? They are short staffed themselves, now they are overloaded with environmental health problems..." (Operations Manager B3 interview pp38-9).

Another problem with the fine/summons concerned allegations of corruption amongst the public prosecutors. One (anonymous) EHP recalled a case involving a persistent offender who'd been subpoenaed to the Court but the case was delayed. The EHP went to the public prosecutor to find out why and discovered that the case had been withdrawn. The EHP suspected corruption, with the business owner probably approaching the prosecutor directly to avoid a court appearance. In another case of persistent offending the same EHP recalled how a Ward Councillor intervened at the request of a business owner by contacting the prosecutor who withdrew the case because, in his opinion, the owner now complied. The EHP was furious having spent weeks on the case only to be told by the prosecutor (who had not worked on this

case before) that it had been withdrawn. The (anonymous) EHP commented that: “you prosecute because you’re serious... [but] no one will back you”.

The incorporation of fines within EHPs’ monthly performance targets was another common concern of EHPs that illustrates how neo-liberal influences on workplace quality could be counterproductive. In section 5.3.4 above case-EHPs admitted it was usually not difficult to meet or exceed their monthly targets for the fine/summons, but they were more concerned about being pressured in this way, particularly given their preventive ethos and the potential for the fine/summons to harm their relations with the public. EHPs also voiced concern that the laws were too new for such emphasis on sanctions.

In response to these issues some EHPs wanted more emphasis on the alternative punitive approaches. Three advocated a return to what F1B described as the “more serious sanctions of the old days” when premises were closed and re-opened only when EHPs judged they were in compliance, particularly for affluent and persistent offenders. There was some evidence that this was happening because the Region F2 EH Manager had recently closing a sauce manufacturer operating out of a scrap dealers and EHPs were requesting more guidance from the Central EH Unit on how to close premises. These problems were acknowledged by senior managers and two further initiatives were also being developed. In October 2007 all CoJ regulators were invited to a workshop organized by the public prosecutor to review the current law enforcement situation in Johannesburg and make it more integrated (Mtetwa in CoJ 2007). During fieldwork new Regional Law Enforcement Manager posts were being advertised with responsibility for coordinating law enforcement across the CoJ and Operations Manager B3 successfully secured the Region F post shortly after fieldwork ended. This section now explores EHPs’ views of the criminal courts.

Most case-EHPs had little or no recent court experience because prosecutions were usually managed by Operations Managers and the Regional EH Manager working with the public prosecutors. But thanks in part to their law enforcement training EHPs were aware of the role of the courts and their own accountabilities to the law. B4 and F2B gained considerable courts experience during the apartheid era, but in the last five years F2B had not yet returned to court (F2B interview p25). B4’s on-going housing caseload included referrals to magistrates to determine the course of action and he sometimes appeared in court to give his opinion (0010/B Observation p8). B2 had only attended court once in nearly five years during a persistent noise nuisance case, but on the day vital evidence was never obtained and the case was struck off the roll by the magistrate (B2 interview p38). Unsurprisingly therefore EHPs were unsure about how their cases were treated in the courts but they were concerned that the courts did not take

them seriously and considered them “minor prosecutions” (F1C interview p42). D1A imagined a magistrate saying:

“I was supposed to be dealing with criminals, now I’m busy with a person who is DUMPING! What is dumping after all” (D1A interview pp54-5).

EHPs suspected the courts prioritised more serious crimes, but they knew EH offenders did not like going to court, particularly when their fines were increased. However, EHPs also feared that the courts would be lenient on offenders because they lacked environmental health knowledge. Operations Manager B3 provided evidence that these fears were being realised in a case that was common knowledge amongst Region B EHPs. She had forced a persistent noise case to court using the J175 procedure and after many delays the trial eventually began but the visiting magistrate opened proceedings with the following words:

“ ‘What is this?’ [B3 imitates the magistrate tapping his desk], ‘what is this? Lady [to B3], who brought you? What’s your name? You are just wasting my time in court!’...

[the magistrate then addresses the defendant]: ‘If this woman [i.e. B3] calls, I will just throw this out, because you [B3] are wasting the Court’s time’ (Operations Manager B3 interview p47).

Operations Manager B3 reported the case to managers but was not surprised by the outcome:

“...we have the crime problem in the media, it is a priority, you know, a shortage of police... you hear all the time on the radio and there is an outcry, you know, people of South Africa, Johannesburg, crime and all that. And when you go to these courts the Magistrates know nothing about all these environmental laws. They know nothing. And it is sad that you have to take in the same court where a person who is being tried for rape, murder, burglary, car jacking. You have to take the same court as somebody who is playing a radio, who is making people not sleep...” (Operations Manager B3 interview p47).

“...the reality is that if I was a magistrate this same place where you see the same people in chains where they are being brought up from the cells in the same court! With it, the scale really, you can’t even comprehend” (B Operations Manager B3 interview p47)

B2 had reviewed the previous year's (2005-6) law enforcement statistics and was concerned about their deterrent effect because so few went to court:

“Last year it was said that more than 1200 cases relevant to environmental health were recorded, ONLY 12 of them in the City of Johannesburg I think were taken to court and were successfully prosecuted. The rest, NO! So that's what, 1200 versus 12, you can see that something needs to be done, because we are telling them to comply but nothing happens” (B2 interview pp39-40)

One senior manager also expressed concern that magistrates considered the CoJ *Public Health By-Laws* to be unimportant when compared to national legislation (0006Observations/Central p2). In response EHPs agreed that the judiciary needed training in environmental health law or should employ an EHP or someone similar to ensure such offending is taken seriously.

Some EHPs also wanted dedicated EH courts that, in B2's words, could develop a reputation that they “mean business” (B2 interview pp39-40). Region F1 already had a dedicated EH court but following his rejected fines/summons F1C was not convinced it was working properly (F1C interview pp43-4). Operations Manager B3 confirmed that dedicated EH courts had been trialed in other regions but had fallen flat because of insufficient cases to sustain them (Operations Manager B3 interview p45). The EH Sub-directorate also had their own public prosecutor, but after one case when he kept missing vital meetings Operations Manager B3 did not have much confidence in him (interview p42). She also identified the need for better collaborative working between CoJ organisations and politicians (interview p45). For example joint action between CoJ organisations could close premises immediately or confiscate offending equipment (e.g. amplifiers, polluting vehicles) and in Region F1 EHPs were already working with the CoJ's Inner City Task Force which had more experience of doing this.

6.10 Conclusions

This chapter argues that the backgrounds and motivations of the EHPs themselves shape and reinforce the regulatory pyramid. The case-EHPs had many different backgrounds, but work experience was the most important factor and used to justify the close supervision of less experienced EHPs. All acknowledged their role as law enforcers but considered their primary role to be remedial rather than punitive and typically aligned themselves with persuasive activities. This was also reflected in their professional identities and was reinforced by professional organisations. EHPs' views about law enforcement, sanctions and the courts were largely shaped by the everyday practicalities and problems they encountered that often favoured more persuasive approaches and identified some serious obstacles for sanctioning offenders. The final results chapter now considers relations between EHPs and the regulated.

Chapter 7 External factors: Relations with the regulated

7.1 Introduction

Chapter 7 completes the governance model in Figure 4.1 by returning to external factors to review how relations between EHPs and the regulated influence regulation. The chapter begins with EHPs' typologies of the regulated and complainants and how these can reinforce the regulatory pyramid. Factors surrounding the severity and persistence of offending are then examined before considering the influence of different characterisations of the regulated. Moral factors are then explored followed by sections on how EHPs regulate the informal sector and the problems of corruption before conclusions are made.

7.2 Typologies of the regulated and complainants

All EHPs covered areas they described as combinations of 'undeveloped/developing' alongside 'developed' areas. The ability to work with people from so many different backgrounds was central to their work and EHPs admitted there was no typical person they encountered. In accordance with Lipsky (1980) and Maynard Moody and Musheno (2000, 2003) EHPs' descriptions of the regulated were frequently shaped by moral considerations and generally conformed to those in section 2.5.6 above. Sometimes EHPs, as Lipsky's (1980) street-level bureaucrats, stereotyped people in an attempt to conclude cases as quickly as possible, but the results below describe a complex world where such 'people processing' was often not possible.

EHPs described the regulated as mostly *organizationally incompetent* or *victims* because they were well intentioned and inclined towards legal compliance, but their offending was due to their poor knowledge of environmental health and the law and their socio-economic circumstances. D1A articulated this using Maslow's hierarchy of needs:

“If you haven't met the first level, how can you go to the third level and complain about the services? You cannot take money which you want to buy bread or buy clothes... and have to make a telephone call to lodge a complaint” (D1A interview p19).

During such encounters EHPs typically responded with persuasive regulatory approaches including education, advice, information (e.g. copies of the law itself) and support to the regulated. Such responses also accorded with their individual motivations towards helping people (see section 6.2 above) and sometimes, they admitted, their own failures to inform the public about environmental health.

EHPs also identified small numbers of *amoral calculators* or *villains* motivated by profit seeking and whose offending results from economic calculation. Typical examples included

illegal dumpers, building hijackers, the owners of bad buildings and some nightclubs. In response EHPs were likely to use more punitive approaches, particularly the fine/summons. EHPs also identified a few *political citizens*, those inclined to comply with the law but whose non-compliance resulted from principled disagreement with laws they consider authoritarian or unreasonable. For example the owner of an overcrowded township crèche accused the CoJ of delays with her permit before describing far worse conditions in neighbouring crèches and accusing EHPs of targeting her crèche. The owner then stated her disappointment with the unfairness of the CoJ and her concern about what the parents of the children about to be excluded would think of them. In response D1A acted like Kagan and Scholz's (1984) politician, recognising the high standards of the crèche but remaining firm in her demand that the crèche must reduce its maximum number of children by 10.

EHPs also described Beall et al.'s (2000b) *fixers*, those contributing towards the improvement of municipal services and/or making community based environmental health a reality. Returning to Figure 4.4 above, EHPs identified those working with them on projects or promotional activities as *fixers* and they included schools, businesses, community groups and NGOs (see section 4.4.6 above). In their day to day work EHPs sometimes considered those willing to make improvements as *fixers*, particularly the urban poor.

After Ayres and Braithwaite (1992) EHPs also described regulatory actors as 'multiple selves' that occupy more than one typology at the same time and/or moving between typologies. B4 identified the residents of a new RDP housing area that replaced an informal settlement as both *victims* and *villains*. He hoped the shacks and abandoned cars there would soon be removed following his report to the CoJ Department of Housing, but he also believed that people must learn to live in formal conditions and these standards must be enforced (0010/B Observation p14). EHPs sometimes cast street hawkers as *victims* and *villains*:

“[P]eople just SIT wherever they want to sit, SELL wherever they want to sell because they want to make money. Whether that place is prohibited for selling or not it's none of their business. People prefer to sit on the road and do it because they want to make money... And at the end of the day we understand they are trying to make money, but make money in a way that you will never be against the law, but they don't understand that. It's so, so difficult because today we get a van of Metro. Police taking their goods, removing them, tomorrow you have extra people sitting there. So it's actually not taking us anywhere” (F1D interview pp25-6).

D1A recalled a complaint investigation in which the owner of a township cottage factory was initially very aggressive towards her, assisted by his large dog (*villain*). She recalled his

reluctance to move to the nearby factory area for fear of losing his livelihood and house (*victim*). D1A applied increasingly punitive approaches during her first revisit, including the threat of a fine/summons, but after this the owner moved. He then became a *fixer* because his first two weeks had been tough but his business had already grown in the new industrial area and he apologised for his early behaviour and considered D1A a “blessing in disguise” (D1A interview p24). This section now explores EHPs’ typologies of complainants.

EHPs’ perceptions of a complainant’s motivations were an important factor in determining the actions taken. The complainants observed and described in the results corresponded to four of Hutter’s (1988) five main categories as summarised in Table 7.1 below. These are not set in stone and the ‘multiple selves’ argument also applies here. For example when investigating residential noise complaints EHPs initially suspected the complaint could be genuine or a mix of intolerance, psychological factors or a possible dispute until further investigation. One Region B EHP described a complaint of illegal dumping by a neighbour from a complainant he had previously fined for this very offence. Ordinarily the EHP admitted this complaint would not be a priority because he suspected a dispute was behind it, but further reports of a dead dog led him to visit and make immediate arrangements for its removal (0008/B Observation p4).

Table 7.1 Four main categories of CoJ complainant

Complainant type (From Hutter 1988)	Fieldwork examples and potential responses of EHPs
Genuine	For EHPs these included serious cases with immediate potential health risks (e.g. allegations of food poisoning, pest infestations, sanitation problems) and resulted in rapid and often more punitive responses.
Intolerant	These included some noise complaints, particularly from retired people in suburban areas. EHPs investigated them and treated these complaints seriously but used mainly persuasive approaches to try to resolve them.
Psychological	These included complaints from people who EHPs suspected maybe lonely, unhappy and/or had nothing better to do. In response EHPs usually visited the alleged offender and used persuasive approaches whilst reassuring the complainant that the issues were being resolved.
Neighbourhood disputes	Where possible EHPs tried to avoid getting involved in these cases, though such disputes sometimes weren’t obvious at the early stages of investigation and often related to alleged nuisances (e.g. noise, litter). Where possible EHPs tried to smooth over the situation using informal approaches and tried to avoid further involvement.

During fieldwork the author did not encounter any financially motivated complainants (e.g. compensation seekers) but there is no reason why Hutter’s (1988) fifth categorisation shouldn’t apply in Johannesburg too, particularly given the potential for financial interests to influence

regulation (see section 7.8 below). Other characteristics of complainants were important to EHPs, particularly socio-economic factors. EHPs typically differentiated between more affluent and 'vocal' complainers and those from poorer backgrounds who complain rarely, if at all. In response EHPs were careful when handling of the former, particularly if lawyers were involved, and to explain their approaches and why investigations can take time. EHPs knew that on-going complaints made people angry, but they also felt that sometimes these people did not appreciate their complexity. EHPs were also trying to improve the access of the poor to the complaints process, for example by attending community meetings in person.

The involvement of local politicians increased the speed of complaints investigations. EHPs were very careful to constantly update their managers and were wary of the motives of politicians, particularly around election times, and their sometimes unrealistic expectations. The preferences of complainants also influenced the actions taken, but sometimes the judgement of the EHP could overrule these. For example during one smoke complaint the complainant was adamant that B1 should contact the property owner directly and not the builders next door because, she feared, they would just laugh and know she complained. But B1 disagreed and visited the builders straight afterwards; they were very apologetic and agreed to start using smokeless stoves by the end of the week (0004/B Observation pp16-7).

In summary, these characterizations of the regulated and complainants were complex and subject to constant change but inherently moral and largely conformed to more persuasive activities towards the base of the regulatory pyramid. This chapter now continues the moral theme by exploring two ways in which moral culpability can influence the decisions of EHPs.

7.3 The severity and persistence of offending

The severity of actual offences or the potential for serious offences was an important influence on how EHPs regulate. The seriousness of offences was a product of their potential to cause harm, the likelihood of harm occurring and the persons likely to be harmed. For EHPs they included offences related to illegal dumping, bad buildings, food adulteration and poisoning and offences affecting the public, particularly children and the poor. In response EHPs were more likely to use more immediate and more punitive approaches. During fieldwork the only fine/summons observed occurred during the proactive inspection of a township crèche when D1B fined them R1000 due to a failure to supervise children who had direct access to a busy road via an open child gate (0004/D1Observation pp7-8).

Cases of persistent offending were more also more likely to result in more punitive approaches, sometimes regardless of whether the actual offence was serious. The association of persistent offending with intentional acts/omissions was important and associated with criminality. For

example F1C recalled a shop keeper who continued to sell “rotten foods” to the poor at a discounted price (F1C interview pp39-40). After inspecting the shop F1C served a notice and observed the shopkeeper removing the foods from sale, but when he returned the following day the foods were back on the shelves. He immediately served a fine/summons and continued to monitor the business closely. Similarly B4 thought the only way to handle persistent offending was regulatory law enforcement:

“If you don’t want to comply in terms of listening what I’m saying, what I’m saying is the By-laws, not me, this is what the Council wants you to do. So if you don’t want to do that then I will have just to take action in terms of these By-laws, I will give you this Court Summons” (B4 interview pp29-30).

When faced with such cases EHPs consider all available options including prosecution, prohibitions and closure and other measures (e.g. confiscation of equipment) and requested the assistance of others (e.g. colleagues, managers, police) to make this happen.

7.4 The character of the regulated

This was important to EHPs and the product of many factors including the behaviour of the regulated, the physical conditions of the premises and the history of compliance. In common with Hutter (1988) EHPs described behaviours ranging from the cooperative and friendly to those who could be uncooperative, aggressive and threatening. Most fieldwork visits were cooperative, but EHPs were more likely to use punitive approaches in response to uncooperative behaviours. This was also in accordance with their training in law enforcement and conflict resolution where EHPs were taught that people could be uncooperative for many reasons, sometimes as a deliberate tactic. EHPs were aware of this and, in the words of D1A, listened first but adopt a firm stance about their role as EHPs (D1A interview p27).

The initial reception during visits provided important behavioural cues and all EHPs knew their own approaches could elicit more cooperative behaviours. They often spoke of the importance of “getting to know people” (B1 interview p22), being “in touch with the people” (F1A interview p53) and “being human” (B4 interview p30). Further, EHPs were aware of historical public attitudes towards them characterised by distrust, fear and sometimes hostility and that building relationships took time. B4 summarised his own approach as one of empathising with people, sitting down next to them and discussing their problems; only then could you start talking to them (0010/B Observation p9).

EHPs also recognised the importance of respecting people and giving them a chance and hoped that when people knew more about their roles, beyond the ‘inspector’ stereotypes, they would

become more cooperative and this would, in turn, make it easier for EHPs to do their jobs. For example F1D commented that “people are more afraid of what is it that you are going to do and your attitude towards them” (F1D interview p37) and therefore clear introductions, particularly when meeting people for the first time, made cooperation more likely. At the start of every visit all EHPs took time to explain who they were and what they would be doing. Titles were also important at this stage and despite their many good reasons to be known as EHPs (see section 6.3) they usually referred to themselves as ‘health inspectors’ to avoid confusing people.

EHPs themselves could also prompt more uncooperative encounters. B4 thought some EHPs pushed and provoked people during inspections which could make them defensive. He illustrated this by dropping a pen on the floor and kicked it around whilst repeating ‘what is this, what is this’ in an aggressive manner (0010/B Observations p10). He associated this with inexperience but B4 was also concerned that some EHPs did not appreciate the danger they could be putting themselves in. F1C was unsure why nearly half the people he encounters do not respect him; he thought his age might be a factor because the “old guys” he used to work with were well respected by the public (F1C interview pp36-7). B1 was the only relatively inexperienced case-EHP but whilst some EHPs were more formal than others during visits, none were observed being aggressive as B4 suggests above.

The inner city Region F1 case-EHPs were not observed in the field but other data suggested a more formal tone compared to the other EHPs. For example all three Region F1 case-EHPs commented that ‘the only language uncooperative people understand is to prosecute’, whilst F1D added that “...if it’s a fight they want, it’s a fight they get” but if people listen she was prepared to negotiate (F1D interview pp28-9). Considering these EHPs work in some of the most challenging areas this more combative tone was predicted, but the overall regulatory approaches they described were no different to the other regional offices.

Two observed encounters were quite hostile - with EHPs being shouted at - and echoed F1B’s comment that for “...some people, even if you approach them in a good manner they always have a bad attitude towards you” (F1B interview p38). In response during both visits the EHPs remained calm but were noticeably less flexible and went by the book, conscious that their decisions could be under close scrutiny. But EHPs also gave people the opportunity to complain directly to their managers and provided their contact details, an exchange which also helped calm things down. The most hostile included the ‘rich’, D1A commenting:

“...when you come they don’t look at you as a professional, they just measure you concerning their wealth. It seems like you are too poor to come talk to them, ‘send someone else’ they said to me [laughing]” (D1A interview pp14-5).

Friendly and cooperative behaviours could result in persuasive approaches even in potentially serious cases. For example during a food premises revisit a cooperative manager explained to F2B that the problems identified in her last visit had not yet been fixed because the restaurant was closing soon and relocating but the staff had not yet been told. F2B also found evidence of smoking in the kitchen, but she accepted the manager's reassurances that all problems would be rectified immediately or by her next revisit (0005/F2 Observation p15).

The physical conditions of premises also provided EHPs with indicators of the character of the regulated. Those running premises that appeared clean and well maintained suggested a conscientious character that advantaged large, formal businesses:

“Your formal food premises, your [National petrol company], when we went there, those are the ones that can comply because they are huge... When I say to [name], I tell them without blinking: ‘I want a double wash hand basin, I want your wash up facilities’ because the structure is built exactly for that” (D1B interview pp28-9).

At the other extreme small, informal businesses were inherently disadvantaged but EHPs knew this and used their discretion to develop pragmatic ways towards compliance. EHPs expected a more hostile reception when visiting informal sector premises, but were often impressed at how hygienic standards were maintained there. For example a clean and well maintained shack could also indicate a conscientious character, but the complexities of regulating the informal sector are explored in section 7.7 below. Two visits to formal small businesses revealed the need for potentially costly and avoidable alterations to fulfill the requirements of permits/licenses. Both EHPs understood why people did not approach them earlier and admitted that they should also be better at communicating standards, therefore both were willing therefore to work with businesses using persuasive approaches towards compliance.

The history of compliance also provided clues about the character of the regulated. People concerned about offending or acting on the advice of EHPs were usually subject to less punitive approaches and given more time for compliance than ‘stubborn’ people, as EHPs called them. Before revisiting a township fish and chip shop for example D1B explained that they were still operating without a business license and Certificate of Approval and did not attend the free food hygiene training she offered them. Therefore D1B started the inspection expecting to serve a fine/summons but by the end, having observed their satisfactory standards and improvements, she instead wrote a statutory notice stipulating that their license application be started in 7 days, the Certificate of Approval application received within 14 days and all other problems rectified in 60 days (0005/D1Observation p12).

A poor history of compliance inevitably resulted in more attention from EHPs and their discretion usually resulted in more frequent surveillance of problem areas and premises. History also influenced some aspects of their work, for example EHPs now monitored festivals following a food poisoning outbreak in 2000 that affected around 400 children who attended an unregulated festival (0006/F2 Observation p4). Occupation was also a factor, with uncooperative and/or dishonest behaviours most often associated with nightclub and bad building owners, though informal traders also had a reputation for being deliberately evasive.

7.5 The ethnicity, nationality and culture of the regulated

EHPs thought working with people from ‘different’ backgrounds to their own was something they really enjoyed about their work. B2 recalled how tough it was as a Black-African to regulate a Coloured township, but he now enjoyed working there though you still had to be careful. F2B had recently worked alongside other White EHPs in the inner city and relished this experience though it was sometimes difficult and dangerous. The Black-African case-EHPs all grew up during apartheid and were arguably therefore better equipped for working in poorer areas than their White colleagues, but all EHPs observed covered very diverse areas.

EHPs sometimes attributed standards and behaviours to ethnicity and nationality. Amongst South Africans themselves, Whites had a reputation amongst EHPs for high standards and expectations and a willingness to complain. In contrast Black-Africans, particularly those from poorer areas, appeared to complain much less but had some of the worst standards because, EHPs commented, of the legacy of apartheid and wider socioeconomic issues. B2 worked in an area with large South African Indian and Coloured populations and whilst the former seemed to complain more, he thought both were trying to resolve their own problems and only contacted him when deadlocked (B2 interview pp31-2). EHPs also associated ethnicity and nationality with the potential for bribery (see section 7.8 below).

In the two Region F inner city offices EHPs often referred to ‘foreigners’ or ‘immigrants’ and associated some with poor environmental health and uncooperative behaviours as per the *amoral calculator/villain* typology. Those from the Democratic Republic of the Congo, Mozambique, Nigeria and Zimbabwe particularly were singled out. F1B believed foreigners thought he was going to ‘impose on them’ or is ‘against them’ during his work, even when providing health education, and this could make things worse:

“So, you find that you give them [foreigners] notices, verbal warnings and in a way that we have no choice but to give them tickets. When you give them tickets, or fines, then they tend to have an attitude like you are a bad person” (F1B interview p37).

F2B questioned whether ‘immigrants’ did not know about the law because they had no health inspectors in their countries (F2B interview – p29). F1B thought most of his informal food businesses were foreign owned and considered some *organisationally incompetent* because they wanted to improve but lacked the money and knowledge. But others were *amoral calculators* who “...want to make money out of it, they are not interested in putting back... making sure that their premises is in good condition...” (F1B interview p38). The Region F2 EH Manager thought things were more complex and was prepared to challenge other nations whilst speculating why they were uncooperative:

“What is ok for people from the Congo, is not ok here. What is right for you is not right for me. They don’t see why we are making a fuss? It’s normal for them. Where do we draw the line? Eight people in a room is ok for them, but for us it’s overcrowding! We can’t be enemies with the people, they are staying here (Region F2 EH Manager reflections p2).

A visit with Region B EHPs to a large shopping mall occupied by mostly Chinese businesses highlighted tensions between them and EHPs. The visit was a proactive one and EHPs were tasked with distributing Mandarin information leaflets to raise awareness of the law and their services. During most encounters the leaflet was welcomed, particularly when the businesses discovered they did not have to do anything, but the responses of the Chinese workers were mixed. Each encounter began with the usual introductions by EHPs and some staff were quite welcoming, but others were suspicious and reluctant to engage with the EHPs who themselves did not know how to respond (0009/B Observation p8). B2’s attempts to learn to say ‘good morning’ and ‘thank you’ sometimes lessened the tensions, but they might not be entirely the fault of EHPs because the visit coincided with a raid by police and port officials looking for counterfeit goods. However EHPs clearly found it hard to regulate this ethnic group.

EHPs also associated cultural differences with offending, particularly when investigating complaints. B2 provided two examples of clashes between African cultures and suburban lifestyles. In the townships powerful stereotypes are status symbols but in the suburbs many people do not like loud music, do not know their neighbours and are more likely to complain. EHPs still considered it necessary to investigate and act on suburban noise complaints but B2 was sometimes accused by Black-Africans of having a “bad attitude” (0006/B Observation p14). Plans for the ritual slaughter of animals in Johannesburg could also result in dilemmas for EHPs. On one hand B2 thought this was common in rural areas and he did not have a problem with it, but in Johannesburg it was an offence unless certain conditions were met and this case is revisited in the next section.

7.6 The influence of morality on relations with the regulated

This section starts by exploring the moral culpability of offenders before considering how moral overtones can shape regulation. As covered in section 5.2.4 above most environmental health laws incorporate strict liability offences where intent should not be a factor, but as Hutter (1988) found questions of moral culpability remained important to EHPs. Cases associated with moral culpability that could result in more punitive regulatory approaches included:

- persistent offending
- offences linked to profiteering (e.g. overcrowded homes and crèches)
- offending outside EHP working hours (e.g. illegal dumping)
- attempts to obstruct and/or deceive EHPs

Businesses knowingly trading without permits/licenses were also implicated by EHPs. In principle they believed the law was the law and businesses, particularly large ones, should know better and the threat of a fine/summons often followed. But EHPs also showed leniency towards businesses (large and small) trading without permits that had improved since their last visit and on condition that businesses agreed to a schedule for completing the permit/licensing process. Further, EHPs were reluctant to punish these offenders because of their own failures in communicating the law on permits/licenses and the backlogs in processing them.

As Lipsky (1980) and Maynard-Moody and Musheno (2000, 2003) found, moral overtones frequently shaped the decisions of EHPs, particularly in their views of the regulated. EHPs were more likely to help those considered worthy, even when some might be offenders:

“Let’s say you’ve given a person a statutory notice and he is not complying and you give him maybe another two days to rectify the problem, but you have to act, unfortunately. But if you have given a person statutory notices... let’s say you’ve given him 10 requirements and he’s done already 7 requirements, I believe that give him another chance. He’s showing that he’s going to complete the statutory notice that you’ve given him” (B2 interview pp48-9).

Worthy traits included anyone cooperative and trying to improve their environmental health despite lacking knowledge and/or experiencing difficult socioeconomic circumstances and included the *organisationally incompetent*, *victim* and *fixer* typologies described in section 7.2 above. Conversely, EHPs were more likely to use punitive approaches towards the less worthy like the uncooperative and those associated with *amoral calculator* or *villain* typologies.

EHPs sometimes framed their arguments in moral terms for many reasons, not least to persuade people that they were not there to just “enforce laws against all odds for the benefit of the Council” (D1B interview p39). For example one statutory notice for improving vacant stands referred to their unsightliness, health risks and fears that they could “...provide shelter to vagrants and criminal elements, a matter which is of great concern to this Local Council and ratepayers” (B2 statutory notice - undated). D1B described how small businesses often accused big businesses of taking their customers, but she asked them to think like a customer:

“Would you rather come to your shop or would you rather go to Shoprite? ..just outside it’s dirty, there’s graffiti. You come inside it is dark, not sufficient light, not sufficient ventilation, the walls are black instead of light coloured, the ceiling is sagging. The people serving you, you can see that they have not washed. There is no protective clothing. You see the area is a mess. So I’m like ‘those basic things, you are not doing that for the State, you are not doing that for Environmental Health Practitioner, you are doing that for your business... maybe you don’t care about the safety of the food, but just attracting your customers?’ ” (D1B interview pp39-40)

This argument that improving environmental health was also good for your business and health and could save money was often used by EHPs:

“Here I’m saying: ‘put sufficient ventilation’. It means that you must put a window, the reason being that it should provide sufficient ventilation and natural lighting. So the window is going to help you, that during the day you should not switch on the light. At least you will have natural light and it will also allow the cross ventilation of the air from the door to the window, clearing the air and then you will never have a lot of headache...” (D1A interview pp39-40)

“Educate them to make their premises look clean, tell them that by giving people fresh food it’s good for their customers as well and it’s good for their businesses. Not like... looking for the cockroaches so you can issue them with a fine. We must move away from such things” (B2 interview p34).

EHPs incorporated similar moral sentiments in statutory notices for illegal dumping that sometimes ended with the following paragraph:

“Your co-operation in keeping the area of jurisdiction of the City of Johannesburg Metropolitan Municipality in a clean, neat, tidy, sanitary and safe condition, which will not only be conducive to the health and well-being of its communities, but will also

prevent urban decay and promote investment, will be highly appreciated” (F1C statutory notice 23 October 2006).

The CoJ also used moral arguments to encourage people to self-regulate. These included statements that regulating offending cost the CoJ a lot of money that could be better spent on urgent projects like housing; that all stakeholders (not just the CoJ) were responsible for environmental health matters; and that by prosecuting offenders the CoJ was protecting the peoples’ Constitutional rights (D1B statutory notice - undated).

Offenders also used moral arguments to try to persuade EHPs of their worth in the hope that negotiations would go in their favour. Sometimes this was successful, for example D1A now measured the floors of all pre-school premises to one decimal place following an inspection where a crèche owner argued that the final sum could equal one more child (Observation 0004/D1 pp3-4). One crèche owner used different moral arguments to try to persuade D1A to accommodate 10 extra children in her overcrowded crèche. These included accusing the CoJ of a one year delay with her crèche permit, asking D1A whether she would tell the 10 children and their parents herself that they could no longer attend and accusing D1A and the CoJ of targeting her unfairly when there are so many worse crèches nearby. D1A acknowledged the delays and the high standards of this crèche but was not prepared to use her discretion to bend the rules. The owner later complained in writing to D1A’s Operations Manager and the Executive Director-Health and D1A was concerned about what would happen next.

Returning to the *amoral calculators/villains* described above, EHPs sometimes blamed individuals and businesses themselves for environmental health problems. They sometimes referred to people who ‘should know better’:

“If there is a bin in front of you and you prefer to throw on the floor, it’s bad behaviour that you have because you know what is the bin for... peoples tend to suffer each other in those wrong doings, we’ve got shops, they know very well that they have to have... a proper waste removal, they are shops. But you find shops dumping at the corner of a street because people are dumping there, they are as well dumping there, they are dumping meat [and] perishable goods... it’s a nuisance...” (F1D interview pp24-5).

Descriptions of *villains* and *victims* were also framed in moral terms. For example B4 hoped action would be taken soon to remove shacks and abandoned cars in a new RDP housing settlement that replaced an informal settlement there, but he also reflected that people must learn to live in formal conditions (0010/B Observation p14). F1D had recently inspected a church sheltering more than 100 migrants recently arrived in Johannesburg from countries like

Zimbabwe. Some children there were barely two weeks old and FID thought conditions there were very bad but she also questioned how ‘these people’ could have children and then raise them in such difficult circumstances. Regulating the informal sector also involved EHPs navigating complex moral terrain and is explored in the next section.

Certain tasks also created moral tensions for EHPs. Their work in some housing cases, particularly in the inner city, involved inspections of environmental health conditions for other CoJ organisations. EHPs were well aware that this work could result in the eviction of people and they felt very uncomfortable when expected to attend these evictions:

“They [the CoJ] have the powers to take action, but they want us to be there on the day of the eviction, of which it is not our role to be evicting the people, or to make sure that the people are eventually evicted.” (F1B interview p49)

The walls of their offices featured newspaper articles covering these evictions, particularly the plight of the evicted and the brutality of evictors including the notorious Red Ants, a private security firm whose employees wear distinctive red overalls and have a violent reputation. The author did not ask why the EHPs posted such uncomfortable articles on their walls, perhaps it was a constant reminder of their failure and guilt about these cases.

Blitz work targeting known environmental health hotspots was potentially more confrontational but justified by senior managers on moral grounds. There were no blitzes during fieldwork but in November 2007 in response to two blitzes in Region G one senior manager stated that the CoJ “...are not trying to harass people” but with the on-going investment of millions of Rands towards improving environmental health related services “we expect you [business owners] to meet us [the CoJ] half way” (Ziaaman in Madumo, 2007a). Similarly, commenting on a Region E blitz around the same time another senior manager commented that we “...are not here to harass people, we want to reinforce the law and make sure that there is compliance” (Cruywagen in Madumo, 2007b). In the same two articles some business owners were hostile but others supported the blitz:

“If I know I follow the law, then why should I be afraid?” (Patel in Madumo, 2007a).

On a case by case basis EHPs were potentially willing to bend the law where there were tensions with the moral aspects of a case, but there was little evidence of this during fieldwork. For example a complaint about plans for a cow to be slaughtered in the suburbs for a funeral had strong moral overtones for B2. In his rural home such practices were commonplace but he acknowledged that in Johannesburg it was an offence unless certain conditions were met and

further complaints could result (B2 stories p13). B2 was a qualified meat inspector and arranged to supervise the slaughter and visited the complainants to reassure them of this. This did not resolve their concerns but, much to B2's relief, the cow was slaughtered elsewhere because, he suspects, of pressure from the complainants and their threats to report the case to his managers and the Society for the Prevention of Cruelty to Animals (B2 stories p14). The willingness of EHPs to bend the law when there were moral tensions was explored further using two vignettes based on fieldwork cases.

Situation 2. A crèche applying for a permit in your area has been given provisional approval by the (CoJ's) EMS (Emergency Management Services), building and licensing inspectors. The person providing the service is friendly and co-operative and is providing facilities and care of a high standard, however your calculations of indoor care area space find that there is only space for 30 children, but the crèche has 35 each day.

When asked how they would proceed all case-EHPs began by explaining the law to the owner/manager and possible ways to accommodate the extra children like removing or re-arranging furniture, conscious that "we don't want to be seen outside as people who are not helpful" (F1C questionnaire p4). There was general agreement that five more children was possible but not many more. They would then issue a statutory notice summarising their decision in writing and all agreed that if extra space could not be found, 30 children was the maximum permissible on the permit and appropriate time would be given for compliance. EHPs were unwilling to bend the rules because they sign the permits and wanted to be fair to other crèches in the knowledge that many owners/managers had been trained by them already. By giving time they also hoped to give parents affected reasonable notice to find another crèche.

The EHPs were also asked if they would act differently if the service provider was aggressive and uncooperative? Most admitted they would act differently in this situation, typically with less flexible and more punitive approaches. For example if non-compliance continued three EHPs considered closing the premises provided the other CoJ Organisations involved agreed. However, B1 and D1B claimed they would not act differently because cases should be driven by the facts and responding in kind with aggression could make matters worse.

Situation 3. Imagine that you find two identical food premises in your area that have both been trading for one month without a CoA (Certificate of Acceptability). One is owned by a national company, the other is owned by a young family that have taken out a huge loan to set up their new business.

All the case-EHPs, except D1A and D1B, would treat both cases the same because the law was the law and applied to all businesses and trading without a CoA was an offence. However, the next step by all was to inspect the premises immediately and start the CoA application process. If the premises complies a CoA would be issued, if not EHPs would issue a statutory notice with appropriate timescales for compliance. All agreed that the national company would comply more easily, but for both premises continued non-compliance would result in more punitive approaches. D1A and D1B admitted that in the townships they would usually treat the two cases differently and were more likely to be lenient towards family shops who do not know the law, partly due to their own failure to communicate the law effectively. In summary, despite the law attempting to remove morality from offending (see section 5.2.4 above) it remains integral to EH regulation for all involved. This chapter now turns to one of the most challenging moral aspects of EHPs' work.

7.7 Regulating the informal sector

All EHPs considered regulation relatively straightforward in developed areas. Beyond just having more resources for compliance, F2B commented that formal premises usually pay their fines because "they've got nowhere to go" (F2B interview pp23-5). Section 5.2.3 described how the informal sector is inherently disadvantaged because of their socioeconomic circumstances and laws based on formal sector standards and for EHPs this work was a constant challenge:

"[Informal local shops] are falling apart and people feel that they can't fix them because they don't get enough income. So you go there, you inspect and you give recommendations and somebody doesn't have money to even paint"

(D1B interview pp17-8)

"I want to do what you say, but I don't have money"

(Imitating an informal business owner in F1B interview p38)

"Like you have maybe a spaza shop, your tuck shops or maybe your informal crèches, they will be in a shack. So before you even come with the By-laws, the By-laws will tell you that maybe that's not wanted, that maybe the premises are supposed to be of a solid structure, and there are supposed to be hand wash basins, and then double bowl sink, the floor to be of a smooth surface, light coloured paint. You can't enforce that in a shack"

(D1B interview pp23-4)

"But why prosecute people [in informal settlements] if they can't comply with By-Laws? If you're gonna look for something you're gonna find it. It's ridiculous! You

can't prosecute them for no water if they have no water! You give them the requirements, but work around them.”

(F2B questionnaire p3)

Discretion was therefore critical but before taking any action EHPs were careful to establish whether the informal business/settlement was considered 'legal' by the CoJ. This involved checks on land ownership and use and liaison with other CoJ organisations, particularly the Departments of Planning and Housing. If the informal business/settlement was illegal the case was referred immediately to the appropriate CoJ organisation and the involvement of EHPs ended there. EHPs knew the implications of this and why informality persisted but they also knew that to provide basic services before carrying out these checks risked legitimising (in the eyes of the informal) what could be an illegal occupation. Such actions also helped distance EHPs from what happened next (i.e. forced removals), though this was not guaranteed and some EHPs expressed guilt for their actions/inactions in this area.

Further action depended on the case. For example EHPs regularly compiled reports monitoring conditions in informal settlements that were then sent to the relevant CoJ organisation in the hope that further action would be taken. Sometimes EHPs were helped by information and complaints from the urban poor, but EHPs also knew they could be very quiet for understandable reasons including a distrust of officials, fears of eviction and satisfaction with their homes/businesses. For example some informal settlement dwellers thought their living conditions in Johannesburg were better than where they had come from. For these reasons EHPs expected a hostile reception until they got to know people better.

Regulatory approaches also depended on the case. EHPs sometimes attempted to formalise informal businesses in different ways. For example D1A recalled eventually persuading - using increasingly punitive approaches - an informal manufacturer of window frames to move to the local industrial zone where his business began to flourish and he eventually thanked D1A for her persistence and apologised for initially being so uncooperative (D1A interview p24). But EHPs mostly used their discretion to accommodate the informal sector within the law. For example EHPs regularly worked with informal food businesses towards compliance with minimum standards that could not be compromised (see Appendix R). This enabled these businesses to comply with the law, including eligibility for the CoA permit for example.

CoJ Department of Health data supported this approach by suggesting that informal food traders were no riskier than their formal counterparts. For example over 2005-6 there were 8073 inspections/revisits to informal food traders, some 23% of these identifying health risks, a figure slightly lower than the 24% of health risks identified during inspections/revisits to food

premises (n = 21149) and factories (n=542) over the same period. During this period some 3604 informal food traders (98% of applicants) were awarded CoAs, the same percentage as for the 10629 formal food premises that successfully applied (CoJ DoH, 2006). But some EHPs remained uncomfortable about issuing CoAs to informal food traders:

“So am I going to overlook the fact that the walls will not be of a smooth surface and a light coloured paint? There will obviously be no ceiling, no double wash hand basin, just the hand wash basin... ok can we ignore that and issue a certificate knowing that you’ve trained this person especially on personal hygiene and how to handle food? ...although she’s cooking in a shack everything is in shelves, they’ve tried to put shelves there, they’ve cleaned this and you feel they are not compromising the consumers, then you issue a certificate” (D1B interview pp27-8).

These ‘rules of hygiene’ were observed being applied during the inspection of a street hawker’s cart with F2A (see Appendix D), but this case also identified other challenges including problems of language and literacy (0007/F2 Observations pp4-6). Some verbal hygiene advice was given early on but F2A focused more on offences relating to the CoJ’s *Street Trading By-laws*. He did not once mention the CoA permit but this was his first visit and F2A would now start monitoring them closely. Other EHPs were also reluctant to attempt more punitive approaches because of the tactics used by street hawkers to evade regulation like not carrying any ID documents. EHPs were also conscious that sanctioning the informal sector could backfire and damage their relations with the public and the media. Further, one manager summarised these that by enforcing the law in this way “...we just move the problem, not solve it” whilst “...everybody flocks to Gauteng!” (Region F2 EH Manager reflections p2).

The CoJ *Street Trading By-laws* created further tensions between EHPs and street hawkers. F1D was visibly uncomfortable during a training course for street hawkers when one recalled how the JMPD (CoJ Police) have moved him four times recently and confiscated his vegetables and similar accounts featured in the newspaper articles (e.g. Donnelly, 2007). The hawker wanted to know more about these By-laws, but F1D evaded this by explaining that she focuses on hygiene whilst street trading is regulated by the JMPD though other EHPs like F2A were observed enforcing street trading laws. After the course F1D explained that inner city hawkers pay R130 for their business license and once awarded their (free) CoA then apply to the CoJ for a stand. Having invested time and money they have high expectations but are often disappointed by the shortage of stands in prime locations and then return to their old ‘illegal’ areas (0007/F1 Observations pp12-3). Around this time the Executive Mayor recognised that informal trading was integral to Johannesburg’s economy but:

“...as is the case in many countries and cities of the world, [it] should be legally controlled and properly managed. Trading should only occur in those areas that are suitably designed for this particular purpose” (Masondo, 2007 p23).

Another problem was that minimum standards for non-food related informal premises had not yet been developed and these businesses remained ineligible for licenses/permits. During fieldwork this was becoming urgent in Region D1 where EHPs were confused about whether to start processing a permit application from an informal settlement crèche:

“...do we actually issue that person with a permit? Maybe yes you could say, because she has to comply with the area, to say how many kids can she put there... she must provide separate basins for washing and... rinsing, your basic things. So to be honest I don't know if they're actually going to give them permits... they will never be fully compliant because of the area, the structure that they find themselves in, so it's that challenge we have that people may never be fully compliant” (D1B interview p27).

After further investigations D1B found that its location was considered 'illegal' by the CoJ and there was little more they could. Further, data on compliance suggested these other areas were a priority for intervention with some 88% of the 14918 evaluations revealed health risks when compared to 36% of the 24450 visits to formal dwellings (CoJ 2006a). EHPs also believed these informal sector challenges would continue whilst Johannesburg's population grew at a rate far exceeding the supply of housing and other infrastructure and services.

7.8 The potential for corruption

Environmental health law and organisations including employers and the HPCSA outline the standards by which EHPs should work and establish systems to hold them to account for their actions. Further, the *Prevention and Combating of Corrupt Activities Act, 2004* was promulgated to strengthen these safeguards in the public and private sectors and this Act defines corruption for public officers like EHPs to include:

- (a) any public officer who, directly or indirectly, accepts or agrees or offers to accept any gratification from any other person whether for the benefit of himself or herself or any other person; or
- (b) gives or agrees or offers to give to a public officer any gratification, whether for the benefit of that person or any other person (Section 4)

Sanctions for these offences include fines and imprisonment but this Act also establishes a register to restrict convicted offenders from opportunities for future offending and places a duty

on certain persons in authority to report corrupt transactions. But EHPs often commented that corruption was part of South African culture and hard to eradicate. Fieldwork coincided with investigations into the then head of the South African Police Service (and Interpol), Jackie Selebi, who was later convicted of corruption related to drug smuggling and sentenced to 15 years imprisonment (Basson, 2010). Some EHPs described the custom of handing the police around R20 when they stop you driving in the hope they will waive a R200 fine. No EHP thought themselves corrupt, but the regulated were willing to offer them bribes across all three of Reisman's categories as is now explained.

Variance bribes to stop EHPs enforcing the law were the most common examples described. F2A recalled inspections where instead of fixing simple problems, long periods of negotiation would end with offers of gifts on the condition that problems are overlooked until the next inspection (F2A interview pp28-9). B2 recalled a shop owner who needed a wash hand basin costing less than R150, but the owner refused and instead offered him a television worth R4000 (B2 stories pp8-9). Whilst working in port health one EHP recalled the manager of a breakfast cereal company visiting his office and making him sign a pile of import forms without inspecting any containers. The EHP reported the incident to his manager and his error later became public when a huge basket full of cereals arrived at the office. The EHP's manager recorded its contents before returning them to the company manager (0005/B Observation pp12-3). In 2011 a newspaper reported the arrest of a Region F EHP suspected of bribery (Tau, 2011). He was suspected of demanding a R2000 variance bribe from the owner of a bad building to stop reporting his unsafe building to the CoJ, but the EHP was caught by a sting operation.

Evidence of a possible transaction bribe (intended to speed up decision making) was observed during a visit to a contract caterer applying for two liquor licensing permits, one covering every day operations and one for a special function involving 1000 VIPs the following week. Whilst travelling to the premises the (anonymous) EHP explained that liquor licensing was not his responsibility but was overseen by his licensing colleagues and subject to further Police approval. The catering managers sought his re-assurance that all would be ok, particularly for the imminent VIP function, and the EHP reassured them of this because he knows the local police Captain. After reviewing the licensing requirements, the catering manager promised to thank the EHP "in the usual way" (implying this had happened before) by organising a barbecue at his house for friends and family which the EHP accepted without hesitation.

Attempts at outright purchase bribes to capture EHPs were recalled by B2. After inspecting a water bottling plant he was asked by its manager how many bottles of water he wants every week, to which B2 replied:

“No, no, no, no, it does not work here, we don’t work like that. As long as I’m not happy with you I’m going to give you requirements, if needs be then I’ll summons you, that’s what I’m going to do. Yes, I’m not going to just take your things as a sign that you look like you are buying me...” (B2 stories p9).

In another case B2 revisited a new business to give its Managing Director (MD) his CoA permit having found no problems during the previous inspection (B2 stories p4). In return, the MD offered B2 a large A4 envelope whilst out of sight of other staff members. B2 refused and explained that there was no fee for a CoA, but the MD persisted and suggested B2 buy presents for his girlfriend. B2 went to his car but the MD threw the envelope inside only for B2 to hand it back stating that his premises comply. The MD tried again and claimed he was not bribing B2 but merely wanted to say thank you for the quiet and speedy way he’d handled the CoA. The MD also suggested that on future visits B2 should feel free to tell him that the envelope is ‘small’. When B2 again refused, the MD instead offered to organise something for B2 anytime he wants it. As B2 drove away the MD again attempted to throw the envelope inside his car and B2 feared someone could be taking pictures to set him up. After the incident the MD called B2 to explain how upset and let down he felt, but B2 reported everything to his manager immediately and remained concerned about it.

Offers of soft drinks or coffee/tea were not uncommon during visits, particularly during post-inspection discussions. Most EHPs observed applied what they called the ‘can of Coke’ or ‘10 Rand rule’ to establish clear limits on what was acceptable and nearly all offered to pay for any drinks immediately, though F2A felt that even a can of Coke could constitute bribery and “an insult to the profession” (F2A interview p28). Further, to maintain their distance most EHPs refused to eat in premises they visited and refused all offers of lunch. The possible transaction bribe case above was the one exception observed to these rules.

For EHPs the factors most associated with bribery were ethnicity and nationality. EHPs singled out some Black-African business owners, particularly Nigerians and Congolese, who constantly tried to do deals with ‘fellow Africans’ because they want their license/permit immediately. Two case EHPs believed it was rare to complete the inspection of Indian owned businesses without being offered something, B2’s three examples above all involving Indian owners. Similarly, F2A commented:

“I’m not trying to be racist but I think the Indian group are the one that are giving me more problems because, instead of fixing things, they will LIKE negotiating, negotiating. Even a SIMPLE thing that they can even fix it, if you ask them or give them a notice or warning, ‘can you clean the area for 1,2,3,’ you give them the reasons

but you find that these guys... they will want to negotiate: 'please, can we do it next time, here is the drink'" (F2A interview pp28-9).

Following his experiences in New York Leff cautioned that EHPs like him were more susceptible to bribery because of poor salaries and warned that a "city that underpays its municipal employees is likely to be a corrupt city" (1988 p45). In section 6.2 above complaints of poor salaries amongst EHPs were widespread and when combined with the apparent willingness of people to offer bribes the conditions for corruption were ever present. In response to the potentially corrupt Region F EHP case, the Region F Manager commented "[I]f you work with slumlords and building hijackers, no matter whether you are a city employee or who you are, you are in the same category" (Mthetwa in Tau, 2011).

More recently warnings from the CoJ, the HPCSA and in Johannesburg newspapers described the rise of 'bogus health inspectors' in Johannesburg and across South Africa that were exploiting the potential for corruption. People typically approached businesses, identified themselves as EHPs using fake ID cards and then conducted inspections. Offences were identified and demands made of between R1000 to R20000 or more, with threats of heavier fines if unpaid (Chaka, 2013a). In Johannesburg one bogus EHP targeting food businesses was drafting statutory notices requiring the CoA permit and business license. He then produced fake application forms and demanded payment for completion and promised to 'speed up' this process, after which he issued fake permits (Boyce, 2015). In response the CoJ were urging the public to check the ID cards of EHPs and stressed that CoA permits were free but payments for other permits were to be made at designated pay points and not EHPs (Nkabinde, 2014).

7.9 Conclusions

Chapter 7 argues that relations with the regulated shape and sometimes reinforced the regulatory pyramid. Most offenders were considered *organisationally incompetent* and in need of education and support but a small minority of *amoral calculators* merited more punitive approaches though, as other chapters found, this was easier said than done. Cases involving severe and persistent offending were more likely to result in punitive approaches and the character of the regulated was also important, with cooperation more likely to result in persuasive approaches and vice-versa. Characteristics including the size of the business, its history of compliance and the ethnicity, nationality and culture of the regulated were also important. Moral considerations shaped relations between EHPs and the regulated, with pragmatic EHPs sometimes willing to bend the law in response to moral tensions. In regulating the informal sector EHPs typically resorted to pragmatic, flexible and persuasive approaches. Lastly, the potential for corruption was always present and being exploited by criminals. The next chapter now brings the four results chapters together in a further discussion.

Chapter 8 Discussion of results

This chapter explores common themes from the results and draws on the literature review in Chapter 2. The discussion starts by revisiting the theoretical framework and how the results support governance and critical approaches to regulation. This chapter then considers why EHPs can be considered responsive regulators and their work on EH project and promotional activities before exploring the limits to these regulatory activities. Chapter 8 then explores the contributions of EHPs to developmental local government and the UN Sustainable Development Goals before considering the difficult balance between environmental health and economic interests and the influence of political factors on regulation.

8.1 Revisiting the theoretical framework for regulation

The key studies in Table 2.1 that underpin this thesis provide thorough descriptions of street-level environmental health regulation but are grounded in theories of the bureaucratic interventionist and surveillance state, specifically the rational-legal authority of professional local government EHPs to intervene in the activities of business and the public and issue environmental health commands to discipline and control populations. Alternatively, and in support of Crook's (2007) historical research, this thesis conceptualises environmental health regulation as governance by describing the continuous circulation of power within and between local government itself, other spheres of government and many civil society actors.

This conceptualisation also supports and extends Tombs and Whyte's (2007) critical approaches to regulation given the many other civil society actors (apart from business and the public) influencing regulation and the struggles of EHPs themselves with local government and other spheres of government. Here power in the governments, streets, businesses and homes of Johannesburg was distributed unequally and sometimes not with CoJ EHPs themselves, but spaces for challenging it were plentiful and rarely captured or closed down. CoJ EHPs were undoubtedly powerful regulators but sometimes businesses, the public and government itself (e.g. via politicians) did not hesitate to hold CoJ EHPs to account for their actions/inactions. The media were sometimes powerful in giving the poorest a voice, particularly when the actions of CoJ EHPs and others were considered unreasonable.

The results also confirmed the dualistic role of CoJ EHPs, representing Hall's (2012) state, as simultaneously repressive and protective given how they construct the offences they then regulate. In accordance with the key studies and the earlier work of Lipsky (1980) and Maynard Moody and Musheno (2000, 2003), morality was central to the regulatory work of EHPs (see section 7.6 particularly) who often went to great lengths to appear reasonable. But like Lipsky's (1980) street level bureaucrats, they faced constant dilemmas that defied easy resolution. These included vast and persistent inequalities, a suspicious and sometimes hostile public and the

knowledge that sometimes their interventions could make matters worse for the public's health such that for EHPs the line between protection and repression could sometimes be very thin.

Revisiting the other theories of regulation, at face value the results support compliance-based theories of regulation that in broadly pluralist societies assume the most effective regulatory strategies are those involving persuasion, bargaining and compromise between the regulator and regulated as exemplified by the key studies of Hawkins (1984), Hutter (1988) and Richardson et al. (1983). The results fit best with Hutter's (1988; 1989) *insistent* regulatory strategies because CoJ EHPs were generally accommodating but less flexible and more likely to take more punitive action when compared to Hutter's *persuasive* regulators. For example at the CoJ the probability of a business being served with a fine/summons during a routine visit was calculated to be around 1:50 (see section 4.4.4 and Table 4.2 above). This more closely reflected the range of probabilities of food premises being prosecuted by *insistent* (1:35 to 1:88) than *persuasive* departments (1:171 to no prosecutions) (Hutter, 1988; 1989). However, Johannesburg could hardly be described as a pluralist society and this interpretation is made with caution.

The association of CoJ EHPs with *insistent* regulatory strategies provided no evidence for Black's relational distance hypothesis that the greater the distance between parties in dispute, the greater the likelihood that the law will be used to settle it (Black in Hutter, 1989). Both Hutter's (1988, 1989) *insistent* departments regulated cities where, unlike their rural more *persuasive* counterparts, EHPs were not closely integrated into the community, were more suspicious of the regulated and believed that more punitive approaches were the best way towards compliance. Some CoJ EHPs described this difference in approaches, managers in particular using it as an argument for more law enforcement training and supervision of former rural EHPs. But whilst the relational distance of EHPs was high in Johannesburg, none expressed a general preference towards more punitive regulatory approaches and other factors were more influential as discussed in the next section below.

Alternatively, revisiting capture theories of regulation the potential for EHPs to be captured by businesses was ever present, but EHPs knew their work was being monitored closely and potentially corrupt EHPs (and their impersonators) were being caught and attracting professional scrutiny and media coverage as explored in section 7.8. Returning to neoliberal theories of regulation, neoliberal policies influenced the regulatory context (see section 4.6.2) and the structure and organisation of the CoJ and its EHPs (see sections 4.2.1 and 5.3.4) but in contrast to other studies (Snider, 2003; Tombs, 2016) there was no evidence that EHPs were being pressured towards using more persuasive regulatory approaches.

8.2 A solid and flexible foundation: EHPs as responsive regulators and promoters

Overall, this thesis argues that CoJ EHPs, managers, politicians and others have created a solid foundation for environmental health regulation in a very short time. In 2007 the role of EHPs remained largely that of the traditional ‘Victorian’ type law enforcer but, after Crook (2007), EHPs were regulating in far more responsive ways than this stereotype suggests. Regulation began long before decisions about when to punish or persuade, but once a case reaches this stage the results confirmed Ayres and Braithwaite’s (1992) pyramidal distribution of regulatory activities. However, in accordance with the critique in 2.4.3 above the results confirmed that the movement of cases up and down the pyramid was in response to far more than the behaviours of the regulated as will now be explored.

Returning to Kaufmann’s (1960/2006) metaphor, regulation as per the governance model in Figure 4.1 above resembles a vast funnel with the CoJ EHP at its throat; all the factors above them pour out materials which, blended and mixed by the EHP, emerged in a stream of regulatory action in the field. Each case EHPs encountered was unique, but Table 8.1 below summarises the most influential factors on their decision making from Chapters 4 to 7 results and why the pyramid shape of responsive regulation - where persuasive approaches predominate - applies in early 21st century Johannesburg.

Beginning towards the top of the regulatory pyramid and Table 8.1, the absence of major influences towards more punitive approaches in the regulatory context (section 4.6) and the law (section 5.2) was no surprise given that the opposite was usually the case. Evidence of the CoJ’s support for punitive approaches was significant (see section 4.4.4), but usually directed towards offending hotspots in the hope of sending a wider message to potential offenders. This support for deterrence was increasingly reflected in the policies of national government (NDoH, 2013) and the South African Institute of Environmental Health (Ngqulunga, 2013). A preference for persuasive approaches still existed in these policies, but more punitive approaches were no longer considered ‘non-developmental’ or linked to ‘apartheid’ as before (e.g. NDoH, 2004).

Remaining with organizational factors, the existence of a performance target for a punitive sanction, here the fine/summons, is not described in the wider literature on EH regulation probably because most key studies pre-date the neoliberal reforms from the early-1990s (e.g. Hood, 1991; Osborne and Gaebler, 1992). In section 5.3.4, EHPs were not unduly concerned about meeting this target but remained worried about its existence and its potential to undermine their authority. The results in section 6.6 suggest that more experienced EHPs were more willing to use punitive approaches, but this was also influenced by a lack of training and guidance (also see section 5.2.6). In Chapter 7 a failure to secure compliance by persuasive approaches and the behaviours of the regulated themselves had considerable influence on EHPs,

as supported by the literature, with offending associated with more traditional criminal behaviours making punitive responses more likely.

Table 8.1 The most influential factors in the regulatory decision making of EHPs

To punish:	
Regulatory context	<ul style="list-style-type: none"> • None identified
Legal	<ul style="list-style-type: none"> • None identified
Organisational	<ul style="list-style-type: none"> • CoJ support for deterrence - e.g. zero tolerance, targeting offending hotspots • Performance targets for fine/summons
Individual	<ul style="list-style-type: none"> • More experienced EHPs
Relations with regulated	<ul style="list-style-type: none"> • Failure of more persuasive approaches • EH offenders considered <i>amoral calculators</i> • Serious offences and those affecting the public • Offending associated with criminality (e.g. persistent offending, obstruction of EHPs) • Uncooperative behaviour of EH offenders
To persuade:	
Regulatory context	<ul style="list-style-type: none"> • EH inequalities and legacy of apartheid • Public distrust and hostility • Media criticism of EHPs using punitive approaches
Legal	<ul style="list-style-type: none"> • Emphasis on persuasive activities as ‘developmental’ • Uncertain criminality of EH offences • ‘Low’ maximum sanctions risked undermining EHP authority • Uncertain legal mandate of EHPs
Organisational	<ul style="list-style-type: none"> • Expectations of colleagues and managers • Performance targets • Lack of CoJ guidance on punitive approaches
Individual	<ul style="list-style-type: none"> • EHPs see themselves as educators, not law enforcers • Personal safety risks of more punitive approaches • Lack of criminal justice system support for prosecuting EH offenders
Relations with regulated	<ul style="list-style-type: none"> • Most EH offenders are <i>organisationally incompetent</i> • Informal sector businesses • EHPs rely on the cooperation of the regulated

Towards the base of the regulatory pyramid and from the centre of Table 8.1 above, the factors influencing EHPs towards more persuasive regulatory approaches were simply more extensive and partly reflected the uncertain mandate for regulation of CoJ EHPs, not least their wish to cooperate with the regulated and public. Further, these factors largely echo those of the key studies from the global North, though the scale of problems encountered by CoJ EHPs was usually more extreme. In section 4.6 above, the regulatory context was characterised by huge and persistent EH inequalities, a public suspicious of being regulated and a media watching the

CoJ closely and willing to publicise perceived injustices. The legal mandate for CoJ EHPs explored in section 5.2 was broad and complex and its uncertainties provided little encouragement for EHPs towards more punitive approaches. Within the CoJ itself, its controls on EHPs via colleagues and managers (section 5.3.3) and performance targets (section 5.3.4) generally favoured more persuasive approaches. Further, EHPs also lacked guidance on how to take more punitive approaches (section 5.2.6).

The views of EHPs themselves were amongst the most influential persuasive factors, particularly their desire to be seen as educators and advisors (section 6.3) and the real dangers of using more punitive approaches in Johannesburg (section 6.5). EHPs were also well aware that they could not rely on the criminal justice system for support in prosecuting EH offenders (section 6.9). EHPs' association of most offending with *organisational incompetence*, not criminality, was also critical to their preference for more persuasive approaches (section 7.2), particularly towards the informal sector (section 7.7) where punishment could be very counterproductive. EHPs were also largely reliant on the cooperation of the regulated for many reasons including the frequently long term nature of compliance (section 5.2) and their desire to build good working relationships (section 6.3).

Lastly, one departure for this thesis from the key studies was the identification of a second regulatory pathway in Figure 4.4 above involving EH project and promotion activities that reflects more the 21st century 'new public health' direction described in section 1.3 above and advocated by McGranahan (2007) and others (Burke et al. 2002; CEH, 1997; Dhesi and Lynch 2016). But this pathway's only appearance in section 4.4.6 reflects the limited data collected and its secondary importance to traditional regulatory work. The routine and planned activities (e.g. schools awareness days, business training courses) observed seemed to be working well but there was considerable scope for improvement as recommended in section 9.3 below.

Returning to the model of governance in Figure 4.1 above, this thesis therefore argues that once cases reach the regulatory pyramid, analysis of the many factors that are then mixed and blended together by EHPs shows a clear emphasis during responsive regulation towards persuasive regulatory strategies. The very existence of more punitive factors towards the top half of the pyramid and Table 8.1 is significant, not least in establishing a legitimate means of deterring environmental health offending in Johannesburg. But across the model of governance there was a clear and continual emphasis towards EHPs using more persuasive regulatory strategies in their daily work. The potential for escalation via more punitive strategies was always there, particularly in response to serious offences and behaviours associated with criminality (see top of Table 8.1), but for CoJ EHPs regulation remained largely a persuasive activity, with punishment a last resort.

8.3 The limits on the regulatory activities of CoJ EHPs

This section returns to Figure 4.4 above to consider how regulation is limited at three different stages. First, before reaching the regulatory pyramid section 5.3.2 above described the monitoring by EHPs for other CoJ organisations and provincial government. EHPs admitted there were advantages to this work, not least in increasing the breadth of their knowledge and abilities to enlist others in regulating environmental health. But monitoring also put considerable additional pressure on their workloads and could undermine their other regulatory activities and relations with businesses and the public, particularly when others failed to act on their reports but EHPs were blamed for this. However, the discovery that EHPs were exploring legal avenues to force other CoJ organisations to take responsibility for their own environmental health matters suggests this role is vital to hold them to account, though the Constitutional vision for ‘co-operative government’ remains some way off.

Second, though CoJ EHPs regulated responsively, limits to this responsiveness were identified in accordance with many factors identified in section 2.4.3 above. Towards the top of the regulatory pyramid, as Crook and Ayee (2006) and Hutter (1988) found, EHPs were sometimes reluctant to use punitive approaches for fear of damaging their relations with the regulated, particularly smaller and informal businesses, and a concern that some sanctions, notably the fine/summons, provided an inadequate deterrent for the poor (who cannot afford to pay) and more affluent alike (see section 6.9). Further, their use could backfire and undermine EHPs’ authority when they were accused of punishing the poorest (see Appendix O) or when offending continued because sanctions weren’t being enforced by the criminal justice system.

Deterrence could be further undermined because the outcome of the few prosecution cases that got to court was far from certain. For example public prosecutors and the judiciary seemed far from convinced of the need to prosecute EH cases, particularly when faced with the most serious criminal cases, whilst allegations of corruption involving public prosecutors and a local politician further complicated matters (section 6.9). Other factors discouraging EHPs from more punitive approaches included understandable concerns about personal safety (section 6.5) and whether their managers would support them (section 5.3.3).

Towards the base of the regulatory pyramid persuasive approaches were also limited by resources, particularly the time EHPs had to provide education, information and advice to civil society (section 5.3.6). EHPs knew this was a problem and were trying to work around it during their traditional regulatory work (e.g. scheduling their visits geographically) and project/promotional activities (e.g. attending schools, community meetings) but the scale of EH challenges made this vital work a constant struggle.

Third, the work of EHPs in project and promotional activities beyond their well-established training and educational roles sometimes seemed to be creating as many problems as they were trying to solve. In section 5.3.3 EHPs complained about top-down projects being imposed on them by managers with little notice and they were concerned about their sustainability and effectiveness. There were a few interesting examples of EHPs developing their own small scale local projects in section 4.4.6, particularly around waste management, but section 9.3 below makes policy recommendations for strengthening all aspects of responsive regulation including a far more prominent role for project and promotional activities.

8.4 CoJ EHPs: bringing developmental local government and the SDGs to life?

Observers of local government EHPs (Eales et al. 2002; McGranahan, 2007), including some senior EHPs (NDoH, 2004) and their political masters (Mfikoe in CoJ DoH 2006b), associate development with more persuasive regulatory approaches (e.g. education, advice, negotiation) and EH project/promotional activities. One important departure for this thesis is that the model of governance summarized in Figure 4.1 demonstrates that by regulating - whether by punishment, persuasion or promotional activities - EHPs are potentially bringing developmental local government to life in Johannesburg.

This is summarised in Table 8.2 below and echoes Chadwick's (1842/1965) original arguments in section 1.3 that improving environmental health was integral to creating better societies. Here examples from the thesis results illustrate how CoJ EHPs are also delivering the aims of the South African Cities Network (SACN, 2004) and the United Nations' Sustainable Development Goals (SDGs in UN, 2015). The question mark in the title of this section is important for two reasons. This thesis does not test the effectiveness of regulation but assumes that CoJ EHPs are generally maintaining and improving environmental health, though their effectiveness is limited by the weaknesses summarised in the previous section and the potential for corruption.

Another challenge was that EHPs at all levels rarely saw their work in this developmental way. Instead, the results overall reflected Hutter and Manning's (1990) comment on regulation as the product of the tensions between senior managers focused on overall performance, middle managers focused on controlling their inspectors and inspectors themselves pre-occupied with their areas (see p44). EHPs at all levels mentioned their role in delivering Constitutional rights to environmental health (see section 6.3), but those at street-level remained focused on fighting fires whilst their managers were busy supporting them and monitoring their performance. Thus section 9.4 below argues that by viewing their work as development, EHPs could create stronger arguments in their favour.

Table 8.2 The contribution of EHPs to development and the SDGs

SACN (2004) framework	Examples of developmental contributions of CoJ EHPs from results	Relevant SDGs (UN, 2015) include:
A more productive and sustainable city	<ul style="list-style-type: none"> • Regulating food, water, sanitation, air, housing, businesses, schools, crèches etc. • Persuasive activities like education, advice and information to support businesses and the public. • Punitive activities to punish criminal activities and deter potential offenders. • EH project and promotional activities in schools, communities, hostels etc. • Regulation that accommodates and supports the informal sector. 	1 - Ending poverty 3 - Good health & wellbeing 4 - Quality education 5 - Gender equality 6 - Clean water & sanitation 7 - Affordable & clean energy 8 - Decent work & economic growth 11 - Sustainable cities & communities
A more inclusive city	<ul style="list-style-type: none"> • Regulation that protects and promotes the Constitutional rights of all. • Regulation that responds to the voices of business and the public, including the poorest. • Regulation that accommodates and supports the informal sector. 	10- Reduced inequalities 11 - Sustainable cities & communities
A well-governed city	<ul style="list-style-type: none"> • Regulation shaped by moralities and flexibility, not just legalities. • EHPs accountable to the public, politicians, CoJ, courts and the media. • EHPs holding others to account (e.g. businesses, public, CoJ & provincial government) for their EH responsibilities. 	11 - Sustainable cities & communities 16 - Peace, justice & strong institutions

8.5 Balancing environmental health and economic interests

Determining how much EH should be compromised in favour of business and other interests was a constant challenge for EHPs. Environmental health law sometimes requested EHPs to consider Constitutional matters (e.g. equality, reasonableness, historic inequalities) in their work but otherwise they provided little guidance on the ‘right’ balance (see section 5.2.1). Instead EHPs used their discretion to determine this and, as Hutter (1988) found, took their cues from factors including the seriousness of the problem, its history and public impacts, the regulated themselves (see Chapter 7) and the wider regulatory context (see section 4.6). In a context characterized by uncertainties and limited resources, the regulated are therefore in a relatively strong position compared to CoJ EHPs.

There was limited evidence that this balance could be further skewed by the capture and corruption of EHPs by the regulated. The risks of corruption from all sizes of business was ever

present (see section 7.8), but there was no evidence that this was widespread and there was little evidence that EHPs were biased in favour of big businesses, though they acknowledged it was usually much easier for them to comply. Indeed, EHPs spent considerable time supporting small businesses, particularly the informal sector (section 7.7). Further, though neoliberal policies shaped the work of EHPs (see sections 4.2.1 and 5.3.4) there was no evidence they were pressurizing them towards more persuasive approaches.

8.6 Political and professional influences on EH regulation

This thesis raises important questions about the relationships between politicians at all levels and regulation. On the one hand EH regulation remains ideally situated in local government for reasons including its local focus and the duties on its officials and democratically elected politicians to be responsive and accountable to the public. But this thesis also describes political interference in regulation and therefore explores two alternatives to local government control.

Sections 5.2.8 and 6.3 above described the fragmentation of EH regulation across different national and provincial departments and the lack of national, provincial and professional leadership in policy and the promotion of EHPs. There was some evidence that this situation was improving, including an EHP in the post of National Director of Environmental Health and the final publication of a National Environmental Health Policy (NDoH, 2013). A few senior EHPs (notably Jerry Chaka (2013b) and Selva Mudaly (2013), both EH Directors in Metropolitan Municipalities and past/current President of the SAIEH respectively) continued to represent EHPs in national matters. However there was little evidence of EHPs becoming more organised via the HPCSA or SAIEH, hence the recommendation in section 9.3 below.

In the CoJ itself increasing budgets (section 5.3.6) and declarations of strategic and personal support for EHPs from the MMC-Health (section 5.3.5) were reassuring but EHPs and managers still felt they remained a ‘Cinderella service’ with little influence in their own Department of Health, let alone the wider CoJ (section 6.4). Local politicians were also interfering in regulation and sometimes undermining EHPs (section 5.3.5). Additional safeguards were being put in place to prevent this by the MMC-Health and senior managers during fieldwork and EHPs also suggested the need for better education of local politicians in environmental health and how the CoJ works, but section 5.3.5 found that EHPs understandably continued to exercise great caution in their relations with politicians.

Section 4.2.1 summarised how the Environmental Health sub-directorate already functions as a contractor to its Department of Health client, therefore alternative neoliberal options include its transformation into another CoJ owned utility/agency or outsourcing its work to a company employing EHPs and others (e.g. licensing officers, pest controllers). In both cases the legal

responsibility for delivering environmental health would remain with local government, but business would presumably argue that their EHPs would be less burdened by bureaucracy. Concerns about the loss of accountability might be countered by arguments that EHPs are employed as highly educated and accountable professionals, though the inclusion of an ‘external auditor’ clause in draft food safety law (see section 5.2.3) suggests such businesses might have no obligation to employ EHPs in the future. Further, in section 4.6.2 Samson (2008) and Bond and Dugard (2008) argued that similar arrangements had already enabled two CoJ utilities to put profits before legal rights. In the UK similar changes led Tombs (2016) to raise concerns about the loss of local democratic accountability and potential conflicts of interest, alongside the lack of evidence that that these models are cheaper or more effective.

Another option would be to re-organise EH services to become a provincial or national government function. This would entail amendments to the Constitution and other legislation, notably the *National Health Act, 2003*, but provincial and national infrastructure and services for EH regulation already exist that could be used by EHPs. Local representation could be maintained via the daily work of EHPs and more formal arrangements with local representatives to replace local government itself. Existing provincial or national government headquarters could be extended to give support and expertise. This option could also enhance the role of the National Director of Environmental Health, which in turn might increase her influence on national government in this fragmented policy space. But given that local government for all South Africans is less than twenty years old and its EH services (as municipal health services) are younger still, it is arguably too early for alternatives like these. This thesis now turns to the final chapter and makes conclusions and recommendations.

Chapter 9 Conclusions and recommendations

The chapter starts by revisiting the aim and first two objectives of this thesis and then drawing conclusions by revisiting the gaps in knowledge and explaining the original contributions to knowledge made by this thesis. The next section completes the third objective by making recommendations for policy. Chapter 9 ends with further reflections on the strengths and weaknesses of this research and makes recommendations for future research.

9.1 Revisiting the research question, aim and objectives

This thesis originated in the question: how do the EHPs of the City of Johannesburg Metropolitan Municipality regulate environmental health? The aim of this thesis was to describe and explain how these EHPs regulate environmental health via three objectives:

- to develop a model that illustrates how CoJ EHPs regulate environmental health
- to explore and analyse the factors that influence how CoJ EHPs regulate
- to make recommendations for policy

How the first two objectives are met is covered in the next section.

9.2 The governance model of regulation: completing the first two objectives

The governance model in Figure 4.1 above successfully describes and analyses how CoJ EHPs regulate environmental health. Beginning at the centre of this model the work of EHPs still largely follows the traditional regulatory pathway summarised by Figure 4.4 above. Each case passes through preliminary stages to determine whether they enter the regulatory pyramid, or are referred elsewhere, or are subject to monitoring.

For cases that reach the regulatory pyramid, the results confirmed that EHPs were responsive regulators and mainly used persuasive regulatory approaches, with more punitive approaches usually reserved for serious cases or when persuasion is unsuccessful. The results across Chapters 4 to 7 explored and analysed many other factors influencing these regulatory decisions in accordance with the governance model in Figure 4.1, with the most influential summarised in Table 8.1 above. But EHPs were also limited in their responsiveness, particularly due to resources and weaknesses in punitive approaches.

The results also described a second regulatory pathway in Figure 4.4 above involving EH project and promotion activities more in tune with 'new public health' policy, though these activities remained secondary to more traditional regulatory work. More routine and planned training and educational activities seemed to be working well, but the results in section 4.4.6

identified wider problems with the planning, effectiveness and sustainability of many projects. Reflecting on these results this chapter now draws conclusions by claiming four contributions to knowledge of this thesis.

9.3 Original contributions to knowledge

This section revisits the gaps in literature before summarising the main contributions to knowledge of this thesis, namely how local government EHPs regulate urban environmental health in South Africa and developing countries. This thesis also makes two secondary contributions to the knowledge of EH regulation as both governance and development.

9.3.1 Revisiting the gaps in literature

Chapter 1 outlined how and why environmental health remains a complex, persistent and wicked problem, particularly for cities like Johannesburg. In response local government EHPs are potentially well placed given their responsibilities for regulating using protective laws that could make cities more productive, inclusive, sustainable and better governed but we know little about how they regulate environmental health. Chapter 2 developed a model of governance to fill this gap with responsive regulation at its core that combines persuasive and punitive approaches to regulation. This was embedded within a wider framework of governance to explore the complex and interacting factors known to influence EH regulation.

In Chapter 2 key studies from the UK and other Northern countries found that the regulatory context, the law itself, local government, the backgrounds and views of EHPs and their relations with the regulated can all influence how EHPs regulate environmental health. Further, these factors identified an overall preference for persuasive approaches to regulation, with punishment generally a last resort. These factors were supported by the limited literature on EHPs from other African countries, including South Africa, and this thesis fills this gap with the following contributions to knowledge.

9.3.2 A contribution to the knowledge of how local government EHPs regulate urban environmental health in South Africa

The few studies of local government EH services in South African cities that exist were conducted a few years after democracy and focused on the scale of problems and the many challenges faced by EHPs and others (Lewin et al. 1998; McDonald, 1997). A decade later, this thesis is the first in-depth socio-legal study of local government EHPs in a South African city. Many similar problems and challenges remain and their work still follows a traditional regulatory pathway, but this is more responsive and developmental than past studies suggest.

At the start of the regulatory pathway this thesis described an important monitoring role by EHPs for other CoJ organisations and provincial government that holds them to account for their environmental health responsibilities whilst demonstrating a commitment, though strained at times, towards more cooperative ‘environmental health’ government. Using a model of governance developed from key studies this thesis found that persuasive regulatory approaches predominate in Johannesburg, with more punitive approaches reserved for serious offences or when other approaches have failed. In support of these key studies the influence of the regulatory context, the backgrounds and views of EHPs themselves, legal and organisational factors and the relations between EHPs and the regulated together explained why persuasive regulatory approaches predominate. Further, this thesis improves our understanding of the strengths and weaknesses of regulation and makes recommendations for its improvement below.

This thesis also identified a second regulatory pathway not described in the literature and associated with EH project and promotional activities. This role is aligned with the ‘new public health’ policy advocated by McGranahan (2007) and others (e.g. Burke et al. 2002; CEH, 1997; Dhesi and Lynch 2016) and has the potential to meet the considerable needs for environmental health education, information and advice of urban populations. These activities were relatively undeveloped and remained secondary to the traditional regulatory pathway but this thesis also makes recommendations for their improvement below.

Together this thesis uses the model of governance to argue that, despite all the problems and uncertainties they face, local government EHPs continue to play a vital role in maintaining and improving the environmental health of South African cities. Therefore this thesis also makes an important contribution to the evidence base for EH regulation and the work of local government EHPs in South Africa.

9.3.3 A contribution to the knowledge of how local government EHPs regulate urban environmental health in developing countries

The urban environmental health challenge persists with more than half the world’s population now urban and predicted to double in size in the cities of Africa and Asia between 2000 and 2030 (UNFPA, 2007). The populations of these mainly developing country cities bear far greater environmental health burdens but are further disadvantaged by far less established and resourced systems of environmental health regulation when compared to their Northern counterparts. This thesis confirms that these challenges persist but environmental health regulation by local government EHPs makes an important contribution to the development of cities, including in the regulation of the informal sector.

9.3.4 A contribution to the knowledge of environmental health regulation as governance

This thesis extends Crook's (2007) historical work on EHPs by demonstrating the utility of governance for describing and explaining contemporary environmental health regulation as the continuous circulation of power within and between local government, other spheres of government, business and civil society. Governance here also recognises Tombs and Whyte's (2007) critical approaches to regulation by recognising the unequal distribution of power between these regulatory actors, whilst opportunities for challenging this power are rarely captured or closed down by powerful interests.

9.3.5 A contribution to the knowledge of environmental health regulation as development

The literature on local government EHPs in South Africa (Eales et al. 2002; NDoH, 2004) and other developing countries (McGranahan, 2007) typically associates development with persuasive regulatory approaches (e.g. education, advice, negotiation) and environmental health project and promotional activities. This thesis contributes to this literature by arguing that ALL the regulatory work of these EHPs - whether by punishment, persuasion or promotional activities - is potentially developmental and contributes towards creating the better societies envisaged by the South African Cities Network and the Sustainable Development Goals. The word 'potential' is used because this thesis did not measure the effectiveness of regulation and in acknowledgement of the problems identified (e.g. corruption) and that EHPs could be working more developmentally as explored in the next section. Therefore this thesis also contributes to Satterthwaite's (2015) gap by describing how local government is delivering the SDGs in cities. By recognising regulation as development this thesis also contributes to the growing literature (e.g. Tombs, 2016) on the benefits of environmental health regulation.

9.4 Policy recommendations

Returning to the final research objective in section 9.1 above, this thesis now makes three broad policy recommendations.

9.4.1 What might 'good enough' regulation look like?

This thesis argues that overall CoJ EHPs, politicians and others have created a solid foundation for environmental health regulation in a very short time. Many shortcomings remain, but the complex and responsive model of governance described here is far removed from the inspector stereotypes of EHPs. Based on these results, the following recommendations could help address many of the shortcomings identified and assist EHPs towards 'good enough' regulation. After Grindle (2004), the term 'good enough' is used here in recognition of the complexities and tensions inherent in the model of governance described here and in acceptance that it is

unrealistic to strive towards some 'ideal' regulation. Far better instead to embrace this complexity, focus on improving what's working and to treat the role of EHPs seriously.

The first policy recommendation involves strengthening the traditional regulatory law enforcement pathway summarised in Figure 4.4 above. The operation of the fine/summons sanction needs to be reviewed. Dilemmas concerning its scale (unaffordable for the poorest, too low to deter others) are difficult to resolve, for example alternatives like fines adjusted to the means of offenders would be very difficult to operate in the field. There is also a need to find out what happens to the fine/summons when it enters the criminal justice system at the police station. This review should include the fine/summons as a performance target. The results suggest that if this target was removed EHPs would still use this sanction, but without feeling additional pressure to do so when the circumstances might not warrant it. Given these problems, the review should also cover the use of alternative sanctions including the withdrawal of permits/licenses and the use of prohibitions. EHPs were keen to use these alternatives and though they have their own problems, their greater use could provide a more effective and immediate sanction with a wider deterrent effect than the fine/summons.

This review should also explore how the criminal justice system handles environmental health cases and the role of other actors including police officers, the judiciary and public prosecutors. This thesis accepts that South Africa is confronted by problems that would challenge the most established criminal justice systems and it's understandable why EH offending is not considered a priority. Potential recommendations include training and guidance for the judiciary and others in environmental health law. For example guidance developed by the UK Magistrates Association (2009) was produced following similar concerns about low levels of prosecutions and fines in the UK and could easily be adapted for South Africa.

The second policy recommendation involves strengthening the second regulatory pathway with more strategic EH project and promotional activities. The EH challenges faced by Johannesburg's growing population and the lack of public trust in EHPs and local government more generally suggest these activities remain essential. EH promotional activities were an integral part of the five year IDP programmes of the CoJ (see Appendix Q) and EHPs expressed considerable interest in them but they remained secondary to their traditional regulatory work. Further, though some EHPs had initiated their own projects others were being imposed by senior managers with little consideration for their sustainability or effectiveness.

To strengthen these activities this thesis recommends revisiting past activities like the Johannesburg Healthy City Project. This was started in 1993 by Johannesburg City Council, based in its Environmental Health Department and initiated programmes towards healthier

environments, housing, schools and foods/markets and engaged with many actors including other City departments, businesses, communities, tenants and local politicians (Mathee et al. 2002). One of its continued successes is the mainstreaming of so many of its activities¹¹ into the city strategy (see Appendix Q) and the work of EHPs but the results suggest this work has also become piecemeal and of secondary importance. Revisiting past strategic projects could help to reinvigorate these activities and would not be very difficult given that some key actors, including Mathee herself, remain very active in Johannesburg's environmental health. Future activities must also engage with the emerging challenges of climate change (Wright et al. 2014) that were rarely mentioned by EHPs during fieldwork though their work remains integral to urban local government responses to this growing threat.

Further, to build on the more bottom-up community based approaches advocated by the SACN (2004, 2006 and 2016) and others (Baumann et al. 2004; McGranahan, 2007; Mitlin and Satterthwaite 2004) how could the CoJ and its EHPs better work with those *fixers* already improving environmental health? Section 4.4.6 of this thesis described a few examples, but one starting point would be a more systematic analysis of how EHPs are already supporting businesses, NGOs and community based organisations in this way and whether there is scope for investing more resources here. EHPs would potentially need further training in areas like project management and such investments of public resources are not without risks, but enough is known about the effectiveness of *fixers* to warrant further investigation. For example the South African alliance of community organizations and support NGOs affiliated to Shack/Slum Dwellers International (SA-SDI, 2016) is well established and past research into its partners has described vital roles for city governments in supporting their work (Baumann et al. 2004).

Returning to the debates about whether EHPs should work in their traditional, generalist roles or more specialized roles, this thesis also recommends maintaining the generalist role given the need for EHPs to continue covering all regulatory pathways as, after Cornell (1986), the general practitioners of public health for the 21st century. Further, the CoJ is unlikely to be able to fund more specialist EHPs in the foreseeable future. The need for more specialist training and support for EHPs is also identified, particularly in areas like project management and regulating the informal sector, but much of this expertise already exists amongst present and former CoJ EHPs (e.g. now retired EHPs like B4) and others (see below) that could be utilised much better.

¹¹ Johannesburg Healthy City activities now integral to the work of CoJ EHPs include the hygiene training of informal food handlers, environmental lead awareness workshops, bad building projects and EH promotion in schools.

The third policy recommendation is to make small adjustments to the performance targets of EHPs to better capture the developmental outcomes of EH regulation. For example a few requirements for data on premises compliance already exist (e.g. numbers of CoA permits issued for formal and informal food premises), but these could be extended across all MHS activities as EHPs suggested alongside more comprehensive data on offending trends (e.g. number of permits withdrawn). These activities also need to be better linked to wider developmental outcomes like those identified in Table 8.2 above. By doing so, this activity data could provide more powerful arguments in the CoJ and beyond for investing in environmental health services.

The fourth policy recommendation is for the CoJ, professional organisations and the National Director of Environmental Health to explore ways of supporting EHPs better. At the CoJ, progress was being made during fieldwork to address the gaps in pay and allowances between the CoJ and other metropolitan municipalities and senior managers were beginning to respond to the safety concerns of their EHPs. The author doesn't know if these initiatives worked but until these fundamentals were addressed it seems likely that the high levels of staff turnover would continue. Resources for training EHPs were limited during fieldwork, but the CoJ is recommended to support training needs in existing areas (e.g. law enforcement) and new areas suggested by this thesis (e.g. project management, regulating the informal sector and research). The emergence of new professional CPD requirements for EHPs to maintain their HPCSA registration to practice further supports this recommendation.

As professional organisations the HPCSA and SAIEH could be doing more to support, organise and promote their EHP members. The literature review (section 2.5.5) warned of the professional prison that values status and specialization to the neglect of complex realities and the poor but these two professional organisations were too new and undeveloped to have fallen into this trap. Opportunities for specialization did exist, but most EHPs continued to work as generalists with the poorest of society whilst those few EHPs in more specialist roles still worked with the poor. During fieldwork there was little evidence that the HPCSA or the SAIEH was doing much for EHPs beyond registering them to practice, though more senior EHPs undoubtedly benefited from the SAIEH's bi-annual conference. More recently, the publication of the National Environmental Health Policy as a result of the SAIEH's work (Chaka, 2013b) and the promotion of the SAIEH's former secretary to National Director of Environmental Health are encouraging developments. However Wright et al. comment that the National Director's work remains "woefully under-capacitated" (2014 p20) and unless more is done at all levels to organise and promote EHPs the author fears their national voice will remain quiet.

In conclusion, a vast literature supported by this thesis suggests that the work of EHPs will always be under-resourced but local government has to make the best use of its available resources and it is argued that these recommendations towards ‘good enough’ regulation could benefit EHPs and therefore the environmental health of all in Johannesburg.

9.4.2 Promoting the contributions of EHPs towards a better South Africa

This thesis argued in section 8.1.5 above that the model of governance demonstrates how CoJ EHPs are bringing developmental local government to life and thereby creating the better societies envisaged by the South African Cities Network and the United Nations’ Sustainable Development Goals. However EHPs rarely saw their work in this way (section 6.3) and this thesis argues that by viewing and promoting their work as (after Cornell, 1986) 21st century ‘general practitioners of public health’, EHPs could create more powerful arguments that engage a much wider audience whilst better demonstrating the value of EHPs compared to less qualified (e.g. EH Assistants) and more specialist (e.g. Environmental Management Inspectors) professionals. Further, beyond local government itself, organisations and individuals including the HPCSA, the SAIEH and the National Director of Environmental Health could and should be more active here. There are obvious risks when things go wrong (e.g. media coverage of corrupt EHPs), but this thesis argues that the benefits of such promotion far outweigh the risks.

9.4.3 Towards a more evidence based environmental health?

This thesis recommends that EHPs need to be making their work more evidence based and this study has a direct contribution to make. Elsewhere the author and others have defined evidence based environmental health as:

“...environmental health policy and practice supported by the best available evidence, taking into account the preferences of citizens and the wider public and our own professional judgment” (Couch et al. 2016 p6)

Implicit in this definition is the ability of EHPs to give a clear and up-to-date rationale for their practice. Policy is also included because as legislation and guidance it remains an important driver of practice, as Chapter 5 of this thesis confirms. This definition also recognises that evidence is often uncertain, changing, vulnerable to politics and can be difficult to access (hence ‘best available’), but EHPs should have the confidence to embrace its uncertainties and use them to improve environmental health. Further, evidence works alongside professional judgement because of the limits of the available evidence and the unique and complex nature of cases, whilst judgements should also consider the preferences of all those affected where possible (Couch et al. 2016).

Once published this thesis will contribute evidence on how EHPs regulate and therefore needs to be communicated to EHPs across South Africa, particularly those in Universities educating future EHPs. South Africa's Environmental Health Research Network provides one means of doing this and was established in 2009 to develop and co-ordinate environmental health research and establish a community of practice for all interested parties, including EHPs (Wright et al. 2014). The author's own experience establishing a similar UK network suggests it could take years to persuade EHPs to engage with research and make their work more evidence based (Couch et al. 2016), but in Canada the National Collaborating Centre for Environmental Health provides an important example of what is possible with national government support. Their work includes systematic literature reviews to support EHPs and policy makers and building networks of practitioners, policy-makers and researchers across Canada (NCCEH, 2016). Towards this end EHPs could be supported to become more research active, not least by realising that as regulators they already share many skills with researchers including the ability to collect and interpret data, to draw conclusions and communicate them (Couch et al. 2016).

9.5 Reflections on the strengths and weaknesses of the research

Building the reflections on the case study design in section 3.5 above, this thesis was based on a small sample size but grounded in a socio-legal framework that created a flexible structure for responding to events that the author could manage alone. As explained in sections 3.5.2 and 3.5.3 above, the grounding of the case study design in a responsive ethical framework was also a great strength of the research. The author did not anticipate that so few EHPs would volunteer, but the holistic multiple case study design and the application of theoretical replication to the ten case-EHPs meant this was not a problem. The sample constituted EHPs with at least 2 years work experience and potentially biased the results towards more experienced EHPs. However, inexperience and its control was a recurring theme and the author suspects a sample of ten newly qualified (closely supervised) case-EHPs would have produced similar results. Another strength was that the holistic case study assisted in the development of the model of governance during the research process as the author's understanding of how EHPs regulate grew.

There were also a number of weaknesses in the research. The author attempted too many methods for the time available and the busy schedules of EHPs. With hindsight he would extend the observation period then conduct one longer interview (including vignettes) only with the case-EHPs. The author did not anticipate that EHPs would know so little about more punitive approaches like prosecutions and prohibitions. This was a finding in itself but the author ran out of time to find out more about these processes, hence their inclusion in the recommendations for future research below. Another potential weakness was that the author analysed all his data alone and without the assistance of a second coder to review emerging themes and interpretations. This might have biased the results, but the theoretical framework provided some

structure to this process and by working alone the author had total control over analysis and avoided the influence of others.

The author did not think it would take nearly nine years to write up this thesis. Much will have changed during this time and more recent data on CoJ and South African EHPs was therefore incorporated into this study including the new National Environmental Health Policy (NDoH, 2013) and a recent survey of municipal health services (Mudaly, 2013). The author's recent attempts to contact the CoJ and update his results have been unsuccessful so far but the author is confident this will change once this thesis is complete and he starts communicating its findings. Further, the author is confident of its continued relevance because of its grounding in key studies from more than 30 years ago and a wider literature dating back to the Victorian era. All this suggests that whilst environmental health conditions may be constantly changing, the way that local government EHPs regulate environmental health has not changed substantially since the Victorian era and this is no bad thing. What has changed are the tools to view and interpret their work, the role of governance being the key tool for this thesis.

9.6 Recommendations for future research

The first recommendations build on those in section 9.4.1 above, specifically the need for research into the weaknesses identified by this thesis towards achieving 'good enough' regulation. For the traditional regulatory pathway further research into the use of sanctions, particularly the fine/summons, by EHPs and the criminal justice system is recommended. For the EH project/promotion pathway, an evaluation of the effectiveness of past and present activities by EHPs is recommended to learn from past experience and identify the considerable work EHPs are already doing in this area which, this thesis suggests, is not widely known. Further, research to identify examples of existing EH related projects run by local groups and others in South African cities could also help to identify suitable projects and the benefits and risks to EHPs of this work.

To build on some themes identified by this thesis, further in-depth research into how EHPs are regulating the informal sector is vital for many reasons, not least predictions of this sector's continued growth in cities (UN, 2015; WHO 2008b) and the need for more guidance for EHPs in this complex area. This thesis was focused on the city, but the model of governance could be used to investigate EHPs based in the rural municipalities that cover most of South Africa. The results of this thesis and key studies like Hutter (1988) suggest that their work is even more characterised by persuasive regulatory approaches when compared to their urban counterparts. This thesis was assisted by the research of historians on the development of local government and its EHPs in Victorian Britain, notably Crook (2007) and Hamlin (1998 & 2013). The results above, particularly section 4.6.1, suggest some similarities in South Africa but further research

is recommended to better understand how local government and EHPs emerged during colonialism and apartheid and its continued influence on EH regulation today.

Section 9.4.3 above recommended a more evidence based environmental health and how this thesis contributes to the 'best available evidence' for how South African EHPs regulate urban environmental health. The Universities and the South African EH Research Network were identified as possible organisations for disseminating this knowledge, but given the organisational weaknesses identified above this thesis recommends future research to better understand the complex relationships between evidence, research, policy and practice. For example the author's own work in the UK has identified barriers for EHPs including poor access to research knowledge, practice based cultures that do not value research and wider political issues including a reluctance to criticize institutions (e.g. government) upon which the status of EHPs depends (Couch et al. 2016).

This research describes how EHPs regulate urban environmental health and the factors that influence their decision making and raised important questions about its effectiveness but more focused research to measure the effectiveness of regulation in improving and maintaining environmental health is needed. The work of EHPs Fairman and Yapp (2005a & b) in the area of food control provides a useful model that could be adapted for a South African setting, but this research is not straightforward and would require investment including an institutional home (e.g. a research active University department) and a strategy for communicating its findings to EHPs.

Finally, this thesis explores regulation from the perspectives of EHPs themselves and the law and wider policy and organisational factors but it also described the significant roles of other actors in regulation including businesses, the public, the media, other government organisations and the criminal justice system. Therefore future research is recommended that explores the influence of other actors in environmental health regulation, particularly how they could complement and further strengthen the role of local government EHPs.

Bibliography

- Agenbag, M. (2006) An analysis of progress made with the devolution of municipal health services in South Africa Unpublished conference paper presented at SAIEH conference, eThekweni, South Africa, February 2006.
- Agenbag, M. and T. Balfour-Kaipa (2008) Chapter 10: Developments in Environmental Health in Barron P and Roma-Reardon J (Eds) *South African Health Review 2008* Health Systems Trust, Durban, South Africa.
- Agenbag, M. and J. Lues (2009) Resource management and environmental health service delivery regarding milk hygiene *British Food Journal* Vol. 111 (6) pp539-53.
- Allison, M. (2002) Balancing responsibility for sanitation *Social Science and Medicine* Vol. 55 (9) pp1539-51.
- Altbeker, A. (2007) *A country at war with itself: South Africa's crisis of crime* Jonathan Ball Publishers, Johannesburg, South Africa.
- ANC African National Congress (2000) *Biography of Comrade Alfred Nzo* Accessed on 1 August 2016 via: <http://www.anc.org.za/content/death-cde-alfred-nzo>.
- ANC African National Congress (1994) *The Reconstruction and Development Programme: A Policy Framework* Accessed on 15th July 2016 from: <http://www.anc.org.za/documents/Policy-Documents/any-author/1994>.
- Andersson, N. and S. Marks (1988) Apartheid and health in the 1980s *Social Science and Medicine* Vol. 27 (7) pp667-81.
- Anning, C. (1937) Non-European Health Assistants in Urban Areas - an address to the Johannesburg Rotary Club on 26 October 1937 by Dr C.C.P Anning, Medical Officer of Health of Benoni in Historical Papers Research Archive of South African Institute of Race Relations Archive, Johannesburg, South Africa.
- Anonymous (2007) New clean-up head questioned *Northcliff & Melville Times* Week ending 18 May 2007 p7.
- Armstrong, D. (1993) Public health spaces and the fabrication of identity *Sociology* Vol. 27 (3) pp393-410.
- Ashton, J. (1991) Sanitarian becomes ecologist: the new environmental health *British Medical Journal* Vol. 302 26th January 1991 pp189-90.
- Ayres, I. and J. Braithwaite, (1992) *Responsive Regulation* Oxford University Press, Oxford, UK.
- Baggott, R. (2000) *Public health: policy and politics* Palgrave Macmillan, London, UK.

- Baldwin, R. and J. Black (2008) Really responsive regulation *The Modern Law Review* Vol. 71(1) pp59-94.
- Baldwin, R. and M. Cave (1999) *Understanding Regulation: Theory, Strategy and Practice* Oxford University Press, UK.
- Baldwin, R., C. Scott and C. Hood (Eds.) (1998) *A Reader on Regulation* Oxford University Press, UK.
- Balfour-Kaipa, T. (2007) Is there enough money for health? *Delivery Magazine* Vol. 9 November/January pp42-3.
- Bangerezako, H. (2007) Neighbourhoods come clean *Mail and Guardian newspaper* February 23 to 1 March 2007 p4.
- Bardach, E. and R. Kagan (2006) *Going by the book: The Problem of Regulatory Unreasonableness* Transaction Publishers, London, UK.
- Barnes, B. (2007) The Politics of Behaviour Change for Environmental Health Promotion in Developing Countries *Journal of Health Psychology* Vol. 12 (3) pp531-38.
- Basson, A. (2010) Selebi sentenced to 15 years *Mail and Guardian newspaper* 3 August 2010 Accessed on 15 August 2016 via: <http://mg.co.za/article/2010-08-03-selebi-sentenced-to-15-years>.
- Bartrip, P.W. and P.T. Fenn (1983) The Evolution of Regulatory Style in the Nineteenth Century British Factory Inspectorate *Journal of Law and Society* Vol. 10 pp201-22.
- Batley, R. and G. Larbi (2004) *The Changing Role of Government: The Reform of Public Services in Developing Countries* Palgrave Macmillan, Basingstoke, UK.
- Baumann, T., J. Bolnick and D. Mitlin (2004) Chapter 8 - The Age of Cities and Organizations of the Urban Poor: The Work of the South African Homeless People's Federation in Mitlin, D. And D. Satterthwaite (Eds.) *Empowering Squatter Citizen: Local Government, Civil Society and Urban Poverty Reduction* Earthscan, London, UK.
- Beall, J., O. Crankshaw and S. Parnell (2000a) Local government, poverty reduction and inequality in Johannesburg *Environment and Urbanisation* Vol. 12 (1) pp107-22.
- Beall, J., O. Crankshaw, and S. Parnell (2000b) Victims, villains and fixers: the urban environment and Johannesburg's poor *Journal of Southern African Studies* Vol. 26 (4) pp833-55.
- Beall, J., Crankshaw, O. and Parnell, S. (2002) *Uniting a divided city: governance and social exclusion in Johannesburg* Earthscan Publications Ltd, London, UK.
- Benjamin, C. (2007) UN observer shocked at state of SA housing *Business Day newspaper*, Thursday 19 April 2007 p4.

- Bernstein, M. (1955) *Regulating business by independent commission* Princeton University Press, USA.
- Bond, P. and J. Dugard (2008) The case of Johannesburg Water: What really happened at the pre-paid 'Parish pump' *Law, Democracy and Development* Vol. 12 (1) pp1-28.
- Boyce, A. (2015) Bogus health inspector nabbed *North Eastern Tribune newspaper* 5 January 2015 accessed on 5 May 2015 via <http://northeasterntribune.co.za/14533/bogus-health-inspector-nabbed/>.
- Braithwaite, V. (2007) Responsive regulation and taxation: introduction *Law and Policy* Vol. 29 (1) January 2007 pp3-10.
- Braithwaite, J. (1982) Enforced Self-Regulation: A New Strategy for Corporate Crime Control *Michigan Law Review* Vol. 80 pp1466-1507.
- Braithwaite, J., J. Walker and P. Grabovsky (1987) An Enforcement Taxonomy of Regulatory Agencies *Law and Policy* Vol. 9 (3) pp323-51.
- Brimblecombe, P. (2003) Historical perspectives on health: The emergence of the Sanitary Inspector in Victorian Britain *Journal of The Royal Society for the Promotion of Health* June 2003 Vol.123 (2) pp124-131.
- Brown, K. (2007) Mbeki urges business leaders to shape up *Business Day newspaper* Monday 16 April 2007 p1.
- Burke, S., I. Gray, K. Paterson and J. Meyrick (2002) *Environmental Health 2012: A Key Partner in Delivering the Public Health Agenda* Health Development Agency, London, UK.
- Cairncross, S., D. O'Neill, A. McCoy and D. Sethi (2003) *Health, environment and the burden of disease: a guidance note* Department for International Development, London, UK.
- Carson, W.G. (1970a) Some Sociological Aspects of Strict Liability and the Enforcement of Factory legislation *Modern Law Review* July 1970 pp396-412.
- Carson, W.G. (1979) The Conventionalization of Early Factory Crime *International Journal of the Sociology of Law* Vol.7 pp37-60.
- Carson, W.G. (1980) Chapter 7 The Institutionalization of Ambiguity: Early British Factory Acts in G. Geis & E. Stotland (Eds.) (1980) *White Collar Crime: Theory and Research* Sage, Beverley Hills, USA pp142-73.
- Carson, W. (1970b) White-collar crime and the enforcement of factory legislation *British Journal of Criminology* Vol.10 pp383-98.
- CDE Centre for Development and Enterprise (2007) Young Soweto Entrepreneurs: Organising for small business advocacy *CDE Focus* No. 11 June 2007, Johannesburg, South Africa.

- CEH Commission on Environmental Health (1997) *Agendas for change* Chadwick House Group Ltd., London, UK.
- Chadwick, E. (1842/1965) *Report on the sanitary condition of the labouring population of Great Britain 1842 – edited by MW Flinn* Edinburgh University Press, Edinburgh, UK.
- Chaka, J. (2013a) Bogus Environmental Health Practitioners Hitting South Africa in Environmental Health News in *2013/14 Newsletter of the Professional Board for Environmental Health Practitioners of the HPCSA*, Pretoria, South Africa.
- Chaka, J. (2013b) SAIIEH President's message *South African Institute of Environmental Health website* Accessed on 1 February 2014 via: www.saieh.co.za.
- Chambers, R. (1997) *Whose Reality Counts? Putting the First Last* Intermediate Technology Development Group Publishing, London, UK.
- Chipkin, I (2002) Chapter 5 A developmental role for local government in S. Parnell, E. Pieterse, M. Swilling and D. Wooldridge (Eds) *Democratising Local Government: the South African Experiment* University of Cape Town Press, South Africa.
- CIEH Chartered Institute of Environmental Health (2007) *A Curriculum for Courses Leading to the Registration of Environmental Health Practitioners* Chartered Institute of Environmental Health, London, UK.
- CIEH Chartered Institute of Environmental Health (2009) *Reforming the regulatory regime* Accessed on 25 February 2009 via: www.cieh.org/policy/regulatory_reform.html.
- CIPFA Chartered Institute of Public Finance and Accountancy (2004) *Environmental Health Statistics 2002-3 Actuals* Institute of Public Finance, Croydon, UK.
- COHRE Centre on Housing Rights and Evictions (2005) *Any Room for the Poor? Forced Evictions in Johannesburg, South Africa* Centre on Housing Rights and Evictions, Geneva, Switzerland
- CoJ City of Johannesburg (2008) *Draft Integrated Development Plan Review* City of Johannesburg Metropolitan Municipality, South Africa.
- CoJ City of Johannesburg Metropolitan Municipality (2006a) *Growth and Development Strategy* City of Johannesburg Metropolitan Municipality, South Africa.
- CoJ City of Johannesburg Metropolitan Municipality (2005a) *Human development strategy: Jo'burg's commitment to the urban poor* City of Johannesburg Metropolitan Municipality, South Africa.
- CoJ City of Johannesburg (2011) *Improved stoves for traders* Article on CoJ website, 4 July 2011 accessed on 15 August 2016 via: http://www.joburg.org.za/index.php?option=com_content&view=article&id=6838&catid=88&Itemid=266

- CoJ City of Johannesburg (2007) *Inner city captain is hands on* Article on CoJ website of 9 October 2007 accessed on 9 February 2009 via: www.joburg.org.za/content/view/1730/168/.
- CoJ City of Johannesburg Metropolitan Municipality (2006b) *Integrated Development Plan 2006-2011* City of Johannesburg Metropolitan Municipality, South Africa.
- CoJ City of Johannesburg Metropolitan Municipality (2005b) *Reflecting on a solid foundation: Building developmental local government 2000-2005* City of Johannesburg Metropolitan Municipality, South Africa.
- CoJ DoH City of Johannesburg Metropolitan Municipality Department of Health (2005) *Annual Environmental Health Sub-directorate targets for 2005-6* City of Johannesburg Department of Health, Braamfontein, Johannesburg, South Africa.
- CoJ DoH City of Johannesburg Metropolitan Municipality Department of Health (2006a) *Annual Environmental Health Sub-directorate targets for 2006-7* City of Johannesburg Department of Health, Braamfontein, Johannesburg, South Africa.
- CoJ DoH City of Johannesburg Metropolitan Municipality Department of Health (2006b) *Annual report 2005/06* City of Johannesburg Department of Health, Braamfontein, Johannesburg, South Africa.
- CoJ DoH City of Johannesburg Metropolitan Municipality Department of Health (2006c) *Inner City: Clean and Green Campaign ImpiloUmnotho* Vol. 1 (08) November 2006, the official newsletter from the CoJ DoH, Braamfontein, Johannesburg, South Africa.
- CoJ DoH City of Johannesburg Metropolitan Municipality Department of Health (2007) *Hostel clean-up campaign ImpiloUmnotho* Vol. 1 (09) June 2007, the official newsletter from the CoJ DoH, Braamfontein, Johannesburg, South Africa.
- Coleman, A. (1997) Chapter 6 Small business management in Bethlehem, L. And M. Goldblatt (Eds.) *The Bottom Line: Industry and the Environment in South Africa* International Development Research Centre (Canada) and University of Cape Town Press, South Africa.
- Couch, R., C. Barratt, S. Dhesi, J. Stewart and A. Page (2016) Chapter 4: Research and evidence based environmental health *Clay's Handbook of Environmental Health* 21st Edition, Routledge, Abingdon, UK.
- Cornell, S. (1996) Do Environmental Health Officers Practice Public Health? *Public Health* Vol.110 pp73-5.
- Coovadia, H., R. Jewkes, P. Barron, D. Sanders, D. McIntyre (2009) The health and health system of South Africa: historical roots of current public health challenges *The Lancet* Vol. 374 No. 9662 pp817-34.
- Cox, G. (1998) *Determination by Graham L. Cox, Q.C., Sheriff Principal of Sheriffdom of South Strathclyde, Dumfries and Galloway into the E. coli 0157 Fatal Accident Enquiry* Sheriffdom of South Strathclyde, Dumfries and Galloway, Scotland, UK.

- Crook, T. (2007) Sanitary inspection and the public sphere in late Victorian and Edwardian Britain: a case study in liberal governance *Social History* Vol.32 (4) pp369-93.
- Crook, R. & J. Ayee (2006) Urban Service Partnerships, 'Street-Level Bureaucrats' and Environmental Sanitation in Kumasi and Accra, Ghana: Coping with Organisational Change in the Public Bureaucracy *Development Policy Review* Vol.24 (1) pp51-73.
- Curtis, V. (1998) *The Dangers of Dirt: Household Hygiene and Health* Grafisch Service Centrum, Wageningen, The Netherlands
- Davies, D, A. Crouch, F. Petersen and D. Williams-Wynn (1997) *Report of the first phase of the Commission of Inquiry into Thor Chemicals' terms of reference* Secretariat of the Commission of Inquiry, Pretoria, South Africa.
- Davis, C. (2004) *Making companies safe: What works?* Centre for Corporate Accountability, UK.
- Dawes, A. (Ed.) (2003) *The State of Children in Gauteng A report for the office of the Premier, Gauteng provincial government, Pretoria* Child, Youth and Family Development, Human Sciences Research Council, Pretoria, South Africa.
- Devas, N. (2005) Metropolitan governance and urban poverty *Public Administration and Development* Special Issue: Metropolitan Governance Reform Vol.25 (4) pp351-61.
- de Visser, J. (2005) *Developmental local government: a case study of South Africa* Intersentia Publications, Antwerp, The Netherlands.
- DFID Department for International Development (2001) *Making government work for poor people: building state capability* Department for International Development, London, UK.
- Dhesi, S. and Z. Lynch (2016) What next for environmental health? *Perspectives in Public Health* July 2016 Vol.136 (4) pp225-30.
- Diver, C. (1980) A theory of regulatory enforcement *Public Policy* Vol.28 (3) pp257-99.
- Dodd, N. And B. Hutter (2000) Geopolitics and the Regulation of Economic Life *Law and Policy* Vol.22 (1) pp1-24.
- Donnelly, L. (2007) A hawkers' hell *Mail and Guardian newspaper* 8-14 June 2007 p34.
- Douglas, M. (2008) *Purity and danger: an analysis of concepts of pollution and taboo* Routledge Classics, Abingdon, UK.
- DTI Department of Trade and Industry (2008) *Annual review of small business in South Africa 2005-2007- Final draft August 2008* Department of Trade and Industry, Republic of South Africa.

- Eales, K., Dau, S. and Phakati, N. (2002) Chapter 6: Environmental Health *South African Health Review 2002* Health Systems Trust, Durban, South Africa.
- EHPC Environmental Health Policy Committee (1998) *An ensemble of definitions of environmental health* Risk Communication and Education Subcommittee, Environmental Health Policy Committee of the United States Department of Health and Human Services, USA.
- Engels, F. (1845/1987) *The Conditions of the Working Class in England* Penguin Books, London, UK.
- Eyles, J. (1997) Environmental health research: setting an agenda by spinning our wheels or climbing a mountain? *Health and Place* Vol.3 (1) pp1-13.
- Fairman, R. (1999) A commentary on the evolution of environmental health risk management: a US perspective *Journal of Risk Research* Vol.2 (2) pp101-13.
- Fairman, R. and Yapp, C. (2005a) Enforced self-regulation, prescription, and conceptions of compliance within small businesses: the impact of enforcement *Law and Policy* Vol.27 (4) pp491-519.
- Fairman, R. and Yapp, C. (2005b) Making an impact on SME compliance behaviour: An evaluation of the effect of interventions upon compliance with health and safety legislation in small and medium sized enterprises *HSE Research Report 366* Her Majesty's Stationery Office, London, UK.
- Ferrinho, P., P. Barron, E. Buch, J. Gear, A. Morris, F. Orkin, S. Bekker, A. Jeffrey (1991) Measuring environmental health status in Oukasie, 1987 *South African Medical Journal* Vol.79 pp29-31.
- Fineman, S. (1998) Street-level bureaucrats and the social construction of environmental control *Organization Studies* Vol.19 (6) pp953-74.
- Foucault, M. (1977) *Discipline and Punish: The Birth of the Prison* Penguin Books, London, UK.
- Fraser, D. (2003) *The Evolution of the British Welfare State-3rd Edition* Palgrave Macmillan, Hampshire, UK.
- Genn, H. (1993) Business Responses to the Regulation of Health and Safety in England *Law and Policy* Vol.15 (3) pp219-33.
- Grabovsky, P. And J. Braithwaite (1986) *Of Manners Gentle: Enforcement Strategies of Australian Business Regulatory Agencies* Open University Press, Melbourne, Australia.
- Green, J. and N. Thorogood (2004) *Qualitative Methods for Health Research* Sage Publications, London, UK.

- Grindle, M. (2004) Good Enough Governance: Poverty Reduction and Reform in Developing Countries *Governance* Vol.17 pp525-48.
- Gunningham, N. (1974) *Pollution, Social Interest and the Law* Martin Robertson, London, UK.
- Gunningham, N. (2002) Regulating small and medium sized enterprises *Journal of Environmental Law* Vol.14 (1) pp3-32.
- Gunningham, N. and P. Grabovsky (1998) *Smart Regulation* Clarendon Press, Oxford, UK.
- Habib, A. and V. Padayachee (2000) Economic policy and power relations in South Africa's transition to democracy *World Development* Vol.28 (2) pp245-63.
- Hall, S. (2012) *Theorising crime and deviance: A new perspective* Sage, London, UK.
- Hamlin, C. (1998) *Public Health and Social Justice in the Age of Chadwick* Cambridge University Press, UK.
- Hamlin, C. (2002) The history and development of public health in developed countries in R. Detels, J. McEwen, R. Beaglehole and H. Tanaka (Eds.) *Oxford Textbook of Public Health 4th Edition* Oxford University Press, UK.
- Hamlin, C. (2013) Nuisances and community in mid-Victorian England: the attractions of inspection *Social History* Vol.38 (3) pp346-79.
- Hamlin, C. and S. Sheard (1998) Revolutions in public health: 1848, and 1998? *British Medical Journal* Vol.317 pp587-91.
- Hampton, P. (2005) *Reducing administrative burdens: effective inspection and enforcement* Her Majesty's Treasury, London, UK.
- Hardin, G. (1968) The tragedy of the commons *Science* Vol.162 pp1243-8.
- Hardoy, J., Mitlin, D. and Satterthwaite, D. (2001) *Environmental problems in an urbanising world: finding solutions for Cities in Africa, Asia and Latin America* Earthscan Publications Ltd, London, UK.
- Harpham, T. and K. Boateng (1997) Urban Governance in Relation to the Operation of Urban Services in Developing Countries *Habitat International* Vol. 21 (1) pp65-77.
- Harpham, T., T. Lusty and P. Vaughan (eds.) (1988) *In the shadow of the city: community health and the urban poor* Oxford University Press, UK.
- Harris, D. (1983) The development of socio-legal studies in the United Kingdom *Legal Studies* Vol.3 (3) pp315-33.
- Hawkins, K. (1991) Enforcing regulation: more of the same from Pearce and Tombs *British Journal of Criminology* Vol.31 (4) pp427-30.

- Hawkins, K. (1984) *Environment and Enforcement: Regulation and the Social Definition of Pollution* Clarendon Press, Oxford, UK.
- Hawkins, K. (2002) *Law as Last Resort: Prosecution Decision-Making in a Regulatory Agency* Oxford University Press, Oxford, UK.
- Hawkins, K. and B. Hutter (1993) The Response of Business to Social Regulation in England and Wales: An Enforcement Perspective *Law and Policy* Vol.15 (3) pp199-217.
- Hawkins, K. and J. Thomas (1984) The Enforcement Process in Regulatory Bureaucracies in K. Hawkins and J. Thomas (Eds.) *Enforcing Regulation* Kluwer-Nijhoff, Boston, USA.
- Hay, C. (2004) The normalizing role of rationalist assumptions in the institutional embedding of neoliberalism *Economy and Society* Vol.33 (4) pp500-27.
- Haynes, R. (2004) *Financing Environmental Health Services in South Africa* Health Systems Trust, Durban, South Africa.
- Haynes, R. (2005) *Monitoring the Impact of Municipal Health Services Policy Implementation in South Africa* Health Systems Trust, Durban, South Africa.
- Hill, M. (2005) *The Public Policy Process 4th Edition* Pearson Education Ltd., Harlow, Essex, UK.
- Hill, M. and P. Hupe (2002) *Implementing public policy: governance in theory and in practice* Sage Publications, London, UK.
- Hood, C. (1991) A public management for all seasons? *Public Administration* Vol.69 pp3-19.
- HPCSA Health Professions Council of South Africa (2006a) *HPCSA EHP competency requirements and scope of profession* HPCSA, Pretoria, South Africa.
- HPCSA Health Professions Council of South Africa (2006b) *Introducing the Professional Board for EHPs* Accessed on 27 October 2006 via: www.hpcsa.co.za.
- Huchzermeyer, M. (2004) From 'contravention of laws' to 'lack of rights': redefining the problem of informal settlements in South Africa *Habitat International* Vol.28 pp333-47.
- Huchzermeyer, M. (2001) Housing for the poor? Negotiated housing policy in South Africa *Habitat International* Vol.25 pp303-31.
- Hunt, C. and S, Lewin (2000) Exploring Decision-Making for Environmental Health Services: Perspectives from Four Cities *Reviews on Environmental Health* Vol.15 (1-2) pp187-206.
- Hutter, B. (1997) *Compliance: Regulation and Environment* Clarendon Press, Oxford, UK.
- Hutter, B. (1999) Socio-Legal Perspectives on Environmental Law: An Overview in Hutter, B, (ed.) *A Reader in Environmental Law* Oxford University Press, UK.

- Hutter, B. (2005) *The attractions of risk based regulation: accounting for the emergence of risk ideas in regulation* ESRC Centre for Analysis of Risk and Regulation Discussion Paper No: 33 London School of Economics, London, UK.
- Hutter, B. (1988) *The reasonable arm of the law? The law enforcement procedures of Environmental Health Officers* Clarendon Press, Oxford, UK.
- Hutter, B. (1989) Variations in Regulatory Enforcement Styles *Law and Policy* Vol.11 (2) pp153-174.
- Hutter, B. and S. Lloyd-Bostock (1990) The power of accidents: the social and psychological impact of accidents and the enforcement of safety regulations *The British Journal of Criminology* Vol. 30 (4) pp409-422.
- Hutter, B. and P. Manning (1990) The Contexts of Regulation: The Impact Upon Health and Safety Inspectorates in Britain *Law & Policy* Vol.12 (2) pp103-136.
- Ismail, S. (2007) Down and out in the city of gold in *Mail and Guardian newspaper* 5-12 April 2007 p32.
- Jones, B. (2004) Chapter 4 Ideology and the liberal tradition in Jones, B., D. Kavanagh, M. Moran, P. Norton *Politics UK* (5th Edition) Longman, UK.
- Jones, S., S. Parry, S. O'Brien and S. Palmer (2008) Are Staff Management Practices and Inspection Risk Ratings Associated with Foodborne Disease Outbreaks in the Catering Industry in England and Wales? *Journal of Food Protection* Vol.71 (3) pp550-57.
- Kagan, R. (1984) On Regulatory Inspectorates and Police in K. Hawkins and J. Thomas (Eds.) *Enforcing Regulation* Kluwer-Nijhoff, Boston, USA.
- Kagan, R. and J. Scholz (1984) The 'Criminology of the Corporation' and Regulatory Enforcement Strategies in K. Hawkins and J. Thomas (Eds.) *Enforcing Regulation* Kluwer-Nijhoff, Boston, USA.
- Kaplan, R. and P. Norton (1996) Using the Balanced Scorecard as a Strategic Management System *Harvard Business Review* Vol.74 (1) pp75-85.
- Kaufman, H. (1960/2006) *The Forest Ranger: a study in administrative behaviour* Resources for the future, Washington, USA.
- Kelman, S. (1981) *Regulating America, Regulating Sweden: A Comparative Study of Occupational Safety and Health Policy* Massachusetts Institute of Technology Press, USA.
- Lalonde, M. (1974) *A new perspective on the health of Canadians – a working document* Minister of Supply and Services, Government of Canada, Ottawa, Canada.
- Landau, L. (2007) Discrimination and development? Immigration, urbanisation and sustainable livelihoods in Johannesburg *Development Southern Africa* March 2007 24 (1) pp61-76.

- Lazarus, P., I. Currie and R. Short (1997) Chapter 1 The Legislative Framework: Environmental law, investment and industrial practice in Bethlehem, L. And M. Goldblatt (Eds.) (1997) *The Bottom Line: Industry and the Environment in South Africa* International Development Research Centre (Canada) and University of Cape Town Press, South Africa.
- Leach, M., G. Bloom, A. Ely, P. Nightingale, I. Scoones, E. Shah and A. Smith (2007) *Understanding Governance: pathways to sustainability STEPS Working Paper 2* STEPS Centre, University of Sussex, Brighton, UK.
- Leff, S. (1988) Corruption in the Kitchen *New York Magazine* Vol.21 (41) pp38-45.
- Leonard, L. and M. Pelling (2010) Mobilisation and protest: environmental justice in Durban, South Africa *Local Environment* Vol.15 (2) pp137-51.
- Leslie, H. and D. Storey (2003) Chapter 5 Practical issues Scheyvens, R. and D. Storey *Development Fieldwork: A Practical Guide* Sage Publications, London, UK
- Lewin, S., Urquhart, P., Strauss, N., Killian, D. and Hunt, C. (1998) *Linking health and environment in Cape Town, South Africa* Report produced by the Health Systems Division of the Medical Research Council of South Africa for the London School of Hygiene and Tropical Medicine.
- Lipsky, M. (1971) Street-Level Bureaucracy and the Analysis of Urban Reform *Urban Affairs Review* June 1971 Vol.6 (4) pp391-409.
- Lipsky, M. (1980) *Street-level Bureaucracy: Dilemmas of the Individual in Public Services* Russell Sage Foundation, New York, USA.
- Mabin, A. (1986) Labour, capital, class struggle and the origins of residential segregation in Kimberley, 1880-1920 *Journal of Historical Geography* Vol.12 (1) pp4-26.
- MacArthur, I. & Bonnefoy, X. (1997) *Environmental health services in Europe 1. An overview of practice in the 1990s* (WHO Regional Publications No. 76) WHO Regional Office for Europe, Copenhagen, Denmark.
- MacArthur, I. & Bonnefoy, X. (1998) *Environmental health services in Europe 2. Policy Options* WHO Regional Publications No. 77, WHO Regional Office for Europe, Copenhagen, Denmark.
- MacDonagh, O. (1958) The Nineteenth Century revolution in government: a reappraisal *The Historical Journal* Vol.1 (1) pp52-67.
- Madumo, L. (2007a) *By-law blitz in Region G* CoJ press release, Friday 09 November 2007.
- Madumo, L. (2007b) *City holds by-law blitz in Region E* CoJ press release Friday 23 November 2007.
- Magistrates Association (2009) *Costing the earth: guidance for sentencers 2009* Magistrates Association, London, UK.

- Mail & Guardian (2005) Typhoid town's residents vent their anger *Mail and Guardian newspaper* Online 21 September 2005 Accessed on 23 April 2007 via: http://www.mg.co.za/articlePage.aspx?articleid=251624&area=/breaking_news/breaking_news_national/.
- Mashaba, R. (2007a) Mayor tours CBD *City Vision newspaper* 7-13 June 2007 Jozi edition p1.
- Mashaba, R. (2007b) Six day old child, mum evicted *City Vision newspaper* 14-20 June 2007 Jozi edition p1.
- Mathee, A., Swanepoel, F. and Swart, A. (1999) Chapter 20: Environmental Health Services in Health Systems Trust in *South African Health Review 1999* Health Systems Trust, Durban, South Africa.
- Mathee A., T. Harpham, B. Barnes, A. Swart, S. Naidoo, T. de Wet, P. Becker (2009) Inequity in Poverty: the Emerging Public Health Challenge in Johannesburg *Development Southern Africa* Vol.26 (5) pp721-32.
- Mathee, A., T. Harpham, N. Naicker, B. Barnes, S. Plagerson, M. Feit, A. Swart, S. Naidoo (2010) Overcoming fieldwork challenges in urban health research in developing countries: a research note *International Journal of Social Research Methodology* Vol.13 (2) pp171-78.
- Mathee, A., von Schirnding, Y. and Pick, W. (2002) *The experiences and lessons learned through the Johannesburg Healthy City Project* Published jointly by Medical Research Council South Africa, World Health Organisation, University of Witswatersrand School of Public Health and GTZ
- Mathee, A. and C. Wright (2014) Chapter 10: Environmental health in South Africa in Padarath A and English R (Eds.) *South African Health Review 2013/14*, Health Systems Trust, Durban, South Africa.
- Maynard-Moody, S. and Musheno, M. (2000) State Agent or Citizen Agent: Two Narratives of Discretion *Journal of Public Administration Research and Theory* Vol.10 (2) pp329-58.
- Maynard-Moody, S. and Musheno, M. (2003) *Cops, teachers, counsellors: stories from the front lines of public services* University of Michigan Press, USA.
- McDonald, D. (1997) Neither from Above nor from Below: Municipal Bureaucrats and Environmental Policy in Cape Town, South Africa *Canadian Journal of African Studies* Vol.31 (2) pp315-40.
- McDonald, D. (1998) Three Steps Forward, Two Steps Back: Ideology & Urban Ecology in South Africa *Review of African Political Economy* Vol.75 pp73-88.
- McGranahan, G. (2007) International interview: Gordon McGranahan *Environmental Health Practitioner magazine* July 2007 Accessed on 10 July 2007 via: www.cieh.org/ehp/ehp3.aspx?id=5190

- McGranahan, G. and D. Satterthwaite (2000) Environmental Health or Ecological Sustainability? Reconciling The Brown and Green Agendas in Urban Development in Pugh, C. (Ed.) *Sustainable Cities in Developing Countries: Theory and Practice at the Millennium* Earthscan Publications Ltd., London, UK.
- McKeown, T. (1976) *The modern rise of population* Edward Arnold, London, UK.
- Meidinger, E. (1987) Regulatory Culture: A Theoretical Outline *Law and Policy* Vol.9 (4) pp355-86.
- Miles, M. and M. Huberman (1994) *Qualitative Data Analysis: an expanded sourcebook* Sage Publications, London, UK.
- Mill, J.S. (1972) *Utilitarianism, On Liberty and Considerations on Representative Government* Everyman's Library, London, UK.
- Mitlin, D. And D. Satterthwaite (2004) Chapter 1: Introduction in Mitlin, D. And D. Satterthwaite (Eds.) *Empowering Squatter Citizen: Local Government, Civil Society and Urban Poverty Reduction* Earthscan, London, UK.
- Moran, T. (1997) *Legal competence in environmental health* E & FN Spon, London, UK.
- Mudaly, S. (2013) *Municipal Health Services Status Quo Report: 2013* South African Local Government Association and South African Institute of Environmental Health.
- Mullen, L., J. Cowden, D. Cowden and R. Wong (2002) An evaluation of the risk assessment method used by Environmental Health Officers when inspecting food businesses *International Journal of Environmental Health Research* Vol.12 pp255-60.
- Naicker, K., E. Cukrowska and T. S. McCarthy (2003) Acid mine drainage arising from gold mining activities in Johannesburg, South Africa and environs *Environmental Pollution* Vol. 122 (1) pp29-40.
- National Treasury (2013) Chapter 6: Social Security and the Social Wage in Republic of South Africa National Treasury *National Budget Review 2013* Communications Directorate, National Treasury, Pretoria, South Africa
- Nations, N. and C. Monte (1996) 'I'm not dog, no!' Cries of resistance against cholera control campaigns *Social Science and Medicine* Vol.43 (6) pp1007-24
- NCCEH National Collaborating Centre for Environmental Health (2016) *About us* Accessed on 26 August 2016 via: <http://www.ncceh.ca/content/about-us>.
- NDoH National Department of Health (2006) *Environmental health* Accessed on 27 October 2006 via: http://www.doh.gov.za/department/dir_environthalth.html.
- NDoH National Department of Health (2013) *National Environmental Health Policy* Government Gazette No. 37112 4 December 2013.

- NDoH National Department of Health (2004) *National Environmental Health Policy – third draft for consultation* Accessed on 2 July 2010 via: [http://www.mpu.agric.za/SOER/Mpumalanga%20Publikit%20Web%20Version%20SoER%20\(2003\)/files/policies_strategies_white_papers/draft_national_environmental_health_policy_\(draft_vers.3_2004\).doc](http://www.mpu.agric.za/SOER/Mpumalanga%20Publikit%20Web%20Version%20SoER%20(2003)/files/policies_strategies_white_papers/draft_national_environmental_health_policy_(draft_vers.3_2004).doc).
- Ngqulunga, G. (2013) When all else fails in *Environmental Health News 2013/14* Newsletter of the Professional Board for Environmental Health Practitioners of the HPCSA, Pretoria, South Africa.
- Nielsen, V. (2006) Are Regulators Responsive? *Law and Policy* Vol.28 (3) pp. 395-416.
- Nielsen, V. and C. Parker (2009) Testing responsive regulation in regulatory enforcement *Regulation and governance* Vol.3 pp376-399.
- Nkabinde, N. (2014) *Bogus Health Inspector* A Fight Against Crime South Africa website post by the Department of Group Communications and Tourism of the CoJ accessed on 4 September 2015 via <http://www.fightagainsterime.co.za/bogus-health-inspector/#more-3312>.
- Norman R., D. Bradshaw, S. Lewin, S. Cairnross, N. Nannan, T.Vos (2010) Estimating the burden of disease attributable to four selected environmental risk factors in South Africa *Reviews on Environmental Health* Vol.25 pp87-119.
- Norrie, A. (2001) *Crime, reason and history: a critical introduction to criminal law* Cambridge University Press, UK.
- OED Oxford English Dictionary (2006) *Compact Oxford English Dictionary for Students* Oxford University Press, UK.
- Ogus, A. (2004) *Regulation: Legal Form and Economic Theory* Hart Publishing, Oxford, UK
- Ogus, A. and C. Abbot (2002) Sanctions for pollution: do we have the right regime? *Journal of Environmental Law* Vol.14 (3) pp283-98.
- Osborne, D. and T. Gaebler (1992) *Reinventing government: how the entrepreneurial spirit is transforming the public sector* Plume Books, Penguin Books, New York, USA.
- Parnell, S. (1993) Creating Racial Privilege: the Origins of South African Public Health and Town Planning Legislation *Journal of Southern African Studies* Vol. 19 (3) pp471-88.
- Parnell, S. (1991) Sanitation, segregation and the Natives (Urban Areas) Act: African exclusion from Johannesburg's Malay Location, 1897-1925 *Journal of Historical Geography* Vol.17 (3) pp271-88.
- Parnell, S. (2002) Winning the battles but losing the war: the racial segregation of Johannesburg under the Natives (Urban Areas) Act of 1923 *Journal of Historical Geography* Vol.28 (2) pp258-81.

- Parnell, S. and J. Robinson (2006) Development and Urban Policy: Johannesburg's City Development Strategy *Urban Studies* Vol.43 (2) pp337-55.
- Parsons, W. (1995) *Public policy: An Introduction to the Theory and Practice of Policy Analysis* Edward Elgar, Cheltenham, UK.
- Paulus, I. (1974) *The Search for Pure Food; A Sociology of Legislation in Britain* Martin Robertson & Company Ltd., London, UK.
- Pennington, H. (2009) *The Public Enquiry into the September 2005 Outbreak of E.coli 0157 in South Wales* Her Majesty's Stationary Office, London, UK.
- Perry, A. (2000) Sustainable Legal Mechanisms For The Protection of the Urban Environment in Pugh, C. (Ed.) *Sustainable Cities in Developing Countries: Theory and Practice at the Millennium* Earthscan Publications Ltd., London, UK.
- Petrie, J., Y. Burns and W. Bray (1992) Chapter 17: Air Pollution in Fuggle, R. And M. Rabie *Environmental management in South Africa* Juta & Co. Ltd, Cape Town, South Africa.
- Proctor, M. (1986) Local and Central State Control of Black Settlement in Munsieville, Krugersdorp *GeoJournal* Vol.12 (2) pp167-72.
- Pruss-Ustun, A. and C. Corvalan (2008) *Preventing Disease through Healthy Environments: Towards an Estimate of the Global Burden of Disease* World Health Organisation, Geneva, Switzerland.
- Rabie, M. and R. Fuggle (1992) Chapter 2: The Rise of Environmental Concern in Fuggle, R. And M. Rabie *Environmental management in South Africa* Juta & Co. Ltd, Cape Town, South Africa.
- Ray, B. (2008) Occupiers of 51 Olivia Road v City of Johannesburg: Enforcing the Right to Adequate Housing through "Engagement" *Human Rights Law Review* Vol.8 (4) pp703-13.
- Rayner, G. and T. Lang (2012) *Ecological Public Health: reshaping the conditions for good health* Earthscan from Routledge, Abingdon, UK.
- Reed, J. and S. Procter (1995) Chapter 1 Practitioner research in context in Reed, J. and S. Procter (Eds.) *Practitioner Research in Health Care: the inside story* Chapman & Hall, UK.
- Reisman, M. (1979) *Folded Lies: Bribery, Crusades and Reforms* The Free Press, London, UK.
- Reiss, A. (1984) Selecting Strategies of Social Control Over Organisational Life in K. Hawkins and J. Thomas (Eds.) *Enforcing Regulation* Kluwer-Nijhoff, Boston, USA.
- Richardson, G., A. Ogus and P. Burrows (1983) *Policing Pollution: A Study of Regulation and Enforcement* Oxford University Press, Oxford, UK.

- Rittel, H. and M. Webber (1973) Dilemmas in a general theory of planning *Policy Sciences* Vol.4 pp155-69
- Robson, C. (2002) *Real world research: a resource for social scientists and practitioner-researchers 2nd Edition* Blackwell Publishing, Oxford, UK.
- Rogerson, C.M. (1986) Feeding the common people of Johannesburg, 1930-1962 *Journal of Historical Geography* Vol.12 (1) pp56-73.
- Rosen, G. (1993) *A History of Public Health* The Johns Hopkins University Press, Baltimore, USA.
- Rothstein, H., P. Irving, T. Walden and R. Yearsley (2006) The risks of risk based regulation: Insights from the environmental policy domain *Environment International* Vol.32 pp1056-65.
- RSA Republic of South Africa (2006) *Accelerated and Shared Growth Initiative for South Africa (Asgi-SA) – A summary* The Presidency of the Republic of South Africa.
- RSA Republic of South Africa (1996) *Growth, employment and redistribution: a macroeconomic strategy* Government Printer, Pretoria, South Africa.
- RSA Republic of South Africa (2007) *National Spatial Development Perspective 2006* The Presidency of the Republic of South Africa.
- RSA Republic of South Africa (1997a) *White Paper for the Transformation of the Health System in South Africa* Department of Health, Pretoria, South Africa.
- RSA Republic of South Africa (1998) *White Paper on Local Government* Department of Constitutional Development, Pretoria, South Africa.
- RSA Republic of South Africa (1994) *White Paper On Reconstruction And Development* Government Printer, Pretoria, South Africa.
- RSA Republic of South Africa (1997b) *White Paper on Transforming Public Service Delivery (Batho Pele White Paper)* Department of Public Service and Administration, Pretoria, South Africa.
- SA-SDI South African Alliance of community organizations and support NGOs affiliated to Shack/Slum Dwellers International (2016) *Brief history of the alliance* accessed on 4 August 2016 via: <http://sasdialliance.org.za/history/>.
- SACN South African Cities Network (2004) *State of the Cities Report 2004* South African Cities Network, Johannesburg, South Africa.
- SACN South African Cities Network (2006) *State of the Cities Report 2006* South African Cities Network, Johannesburg, South Africa.

- SACN South African Cities Network (2016) *State of the Cities Report 2016* South African Cities Network, Johannesburg, South Africa.
- Sanders, D. and Chopra, M. (2006) Key challenges to achieving health for all in an inequitable society: the case of South Africa *American Journal of Public Health* Vol.96 (1) pp73-8.
- Saro-Wiwa, K. (1995) *The Inspector Calls in A Forest of Flowers* Longman Group Limited, Harlow, England.
- Satterthwaite, D. (2015) *The SDGs don't adequately spell out cities' role in implementation* International Institute for Environment and Development blog, accessed on 15 August 2016 via: <http://www.iied.org/sdgs-dont-adequately-spell-out-cities-role-implementation>.
- SBP Small Business Project (2004) *Counting the cost of red tape for small business in South Africa – headline report* Small Business Project, Johannesburg, South Africa.
- Shover, N., D. Clelland and J. Lynxwiler (1986) *Enforcement of Negotiation: Constructing A Regulatory Bureaucracy* State of New York Press, USA.
- Simpson, J. (2007) *Johannesburg violence* BBC Newsnight report on Thursday 8 February 2007 – available to view via: <https://www.youtube.com/watch?v=e6ChtGctkf8>.
- Smith, A. (1776/1904) *An Inquiry into the Nature and Causes of the Wealth of Nations* 5th Edition, edited by Edwin Cannan, Methuen & Co. Ltd, London, UK.
- Smith, V. (2007) *Clean: a history of personal hygiene and purity* Oxford University Press, Oxford, UK.
- Smith, K., C. Corvalan and T. Kjellstrom (1999) How Much Global Ill Health Is Attributable to Environmental Factors? *Epidemiology* September 1999, Vol.10 (5) pp573-84.
- Snider, L. (2004) Resisting neo-liberalism: the poisoned water disaster in Walkerton, Ontario *Social & Legal Studies* Vol.13 pp265-89.
- Snow, J. (1855) *On The Mode Of Communication Of Cholera: Second Edition* John Churchill, London, UK.
- Sosibo, K. (2007) Streets better than bad houses *Mail and Guardian newspaper* 23 February to 1 March 2007 p8.
- Sosibo, K. and L. Donnelly (2007) Caught between eviction and dereliction *Mail and Guardian newspaper* 31 March to 6 April 2006 pp30-1.
- SSA Statistics South Africa (2011a) *Census 2011 in brief* Statistics South Africa, Pretoria, South Africa.
- SSA Statistics South Africa (2011b) *City of Johannesburg Metropolitan Municipality Statistics – Census 2011 summary* Accessed on 20 July 2016 from: http://www.statssa.gov.za/?page_id=1021&id=city-of-johannesburg-municipality.

- SSA Statistics South Africa (2013) *Millennium Development Goals Country Report 2013* Statistics South Africa, Pretoria, South Africa.
- SSA Statistics South Africa (2014) *Poverty trends in South Africa: an examination of absolute poverty between 2006 and 2011* Statistics South Africa, Pretoria, South Africa.
- Steinberg, J. (2008) *Thin blue: the unwritten rules of policing South Africa* Jonathan Ball Publishers, Johannesburg, South Africa.
- Steyn, P. (2008) Industry, pollution and the apartheid state in South Africa *Scottish Association of Teachers of History, History Teaching Review Yearbook* Vol.22 pp67-75.
- Steyn, P. and A. Wessels (2000) The Emergence of New Environmentalism in South Africa 1988-1992 *South African Historical Journal* Vol.42 pp210-31.
- Stoker, G. (1998) Governance as theory: five propositions *International Social Science Journal* Vol.50 (155) pp17-28.
- Stoker, G. (2002) International Trends in Local Government Transformation in S. Parnell, E. Pieterse, M. Swilling and D. Wooldridge (Eds) *Democratising Local Government: the South African Experiment* University of Cape Town Press, South Africa.
- Sumner, A. (2010) Global Poverty and the New Bottom Billion: What if Three-quarters of the World's Poor Live in Middle-income Countries? *Institute of Development Studies Working Paper 349* Institute of Development Studies, Sussex University, UK.
- Sutherland, E. (1949/1983) *White Collar Crime: The Uncut Version* Yale University Press, New Haven, USA.
- Swanson, M.W. (1977) The sanitation syndrome: bubonic plague and urban native policy in the Cape Colony 1900-1909 *Journal of African History* Vol. XVIII (3) pp387-410.
- Szreter, S. (1988) The Importance of Social Intervention in Britain's Mortality Decline c.1850-1914: a Re-interpretation of the Role of Public Health *Social History of Medicine* Vol.1 (1) pp1-38.
- Tau, P. (2011) 'Bribed' Joburg building inspector nabbed after sting operation *The Star newspaper* 5 July 2011 accessed on 4 September 2015 via <http://www.iol.co.za/the-star/bribed-joburg-building-inspector-nabbed-after-sting-operation>.
- Thomas, E., J. Seager and A. Mathee (2002) Environmental health challenges in South Africa: policy lessons from case studies *Health & Place* Vol.8 pp251-61.
- Tombs, S. (2016) *Social protection after the crisis: regulation without enforcement* Policy Press, Bristol, UK.
- Tombs, S. and D. Whyte (2007) *Safety Crimes* Willan Publishing, Devon, UK.

- Tomlinson, R., R. Beuregard, L. Bremner and X. Mangcu (2003) *The Postapartheid Struggle for an Integrated Johannesburg* in Tomlinson, R., R. Beuregard, L. Bremner and X. Mangcu (Eds) *Emerging Johannesburg: Perspectives on the Postapartheid City* Routledge, London, UK.
- Tsouros, A. (2015) Twenty-seven years of the WHO European Healthy Cities movement *Health Promotion International* Vol. 30 (S1) ppi4 – i7.
- UN United Nations (1976) *The Vancouver Declaration on Human Settlements* HABITAT United Nations Conference on Human Settlements, Vancouver, Canada, 31 May to 11 June 1976.
- UN United Nations (2015) *Transforming our world: the 2030 Agenda for Sustainable Development* Accessed on 15 August 2016 via: <https://sustainabledevelopment.un.org/post2015/transformingourworld>.
- UNCHE United Nations Conference on the Human Environment (1972) *Declaration of the United Nations Conference on the Human Environment* United Nations Conference on the Human Environment, 5-16 June 1972, Stockholm, Sweden.
- UNCED United Nations Conference on Environment and Development (1992) *Report Of The United Nations Conference On Environment And Development Annex I The Rio Declaration On Environment And Development* United Nations Conference on Environment and Development, 3-14 June 1992, Rio de Janeiro, Brazil.
- UNDP United Nations Development Programme (2007) *Human Development Report 2007/8: Fighting climate change: human solidarity in a divided world* United Nations Development Programme, New York, USA.
- UNDP United Nations Development Programme (2003) *South Africa Human Development Report 2003, The Challenge of Sustainable development in South Africa: Unlocking People's Creativity* Published for the United Nations Development Programme by Oxford University Press, Oxford, UK.
- UNDP United Nations Development Programme (2015a) *Human Development Report 2015: work for human development* UNDP, New York, USA.
- UNDP United Nations Development Programme (2015b) *Human Development Report 2015: work for human development – briefing note for South Africa* UNDP, New York, USA.
- UNFPA United Nations Population Fund (2007) *State of world population 2007: Unleashing the Potential of Urban Growth* UNFPA, New York, USA.
- van Deventer, N. (2007) *Characteristics of a Good EHP Unpublished presentation* for CoJ EHPs attending the Alfred Nzo conference, 25 May 2007, Braamfontein, Johannesburg, South Africa.
- van Niekerk, L. (2007) Interview with Lizelle van Niekerk *Enviro Health Vision Newsletter*, Gauteng provincial government Department of Environmental Health Vol.1 Issue 1.

- Vearey, J., I. Palmay, E. Thomas, L. Nunez and S. Drimie (2010) Urban health in Johannesburg: The importance of place in understanding intra-urban inequalities in a context of migration and HIV *Health & Place* Vol.16 pp694-702.
- Verschuren, P. (2003) Case study as a research strategy: some ambiguities and opportunities *International Journal of Social Research Methodology* Vol.6 (2) pp121-39.
- Von Schirnding, Y. (1992) Chapter 23: Environmental Health in R. Fuggle & M. Rabie *Environmental Management in South Africa* Juta & Co. Ltd, Cape Town, South Africa.
- Walliss, F. (2000) *Nuusdagboek: feite en fratse oor 1000 jaar* Human & Rousseau, Kaapstad, South Africa (Accessed on 5 May 2015 via: <http://www.sahistory.org.za/dated-event/charles-shaw-appointed-health-inspector-johannesburg-diggers-community>).
- WCED World Commission on Environment and Development (1987) *Our Common Future* Oxford University Press, Oxford, UK.
- Weber, M. (1947) *The Theory of Social and Economic Organization* The Free Press, New York, USA.
- WHO World Health Organisation (1978) *Declaration of Alma-Ata* International Conference on Primary Health Care, Alma-Ata, USSR 6-12 September 1978.
- WHO World Health Organisation (1972) *Development of Environmental Health Criteria for Urban Planning: Report of a WHO Scientific Group* WHO Technical Report Series No.511, WHO, Geneva, Switzerland.
- WHO World Health Organisation (1993) *The urban health crisis – strategies for all in the face of rapid urbanization* World Health Organisation, Geneva, Switzerland.
- WHO World Health Organisation (2008a) *Closing the gap in a generation: health equity through action on the social determinants of health* Final Report of the Commission on Social Determinants of Health World Health Organization, Geneva, Switzerland.
- WHO World Health Organisation (2008b) *Our cities, Our health, Our future: acting on social determinants for health equity in urban settings* Knowledge Network on Urban Settings, WHO Centre for Health Development, Kobe City, Japan.
- WHO AFRO World Health Organisation Regional Office for Africa (2002) *Environmental Health: A Strategy For The African Region* World Health Organisation Regional Committee for Africa, Brazzaville, Republic of Congo.
- WHO Europe - World Health Organisation Regional Office for Europe (1994) *Action plan for environmental health services in central and eastern Europe and the newly independent states. Report on a WHO consultation, Sofia, Bulgaria, 19-22 October 1993 (Document EUR/ICP/CEH 123)* WHO Regional Office for Europe, Copenhagen, Denmark.
- WHO Europe World Health Organisation Regional Office for Europe (1989) *European Charter on Environment and Health' First European Conference on Environment and Health,*

Frankfurt 7-8 December 1989 World Health Organisation Regional Office for Europe, Copenhagen, Denmark.

Wilson, F. (1881) *A Practical Guide for Inspectors of Nuisances* Knight & Co., London, UK.

Wohl, A. (1983) *Endangered Lives: Public Health in Victorian Britain* Edward Arnold, London, UK.

World Bank (1989) *Sub-Saharan Africa: From crisis to sustainable growth* The World Bank, Washington DC, USA.

World Bank (2003) *World development report 2004: Making Services Work for Poor People* The World Bank and Oxford University Press, Washington DC, USA.

World Bank (2016) *Gini index (World Bank estimate): South Africa* Accessed on 16 August 2016 via: <http://data.worldbank.org/indicator/SI.POV.GINI?locations=ZA>.

Wratten, E. (1995) Conceptualizing urban poverty *Environment and Urbanization* Vol.7 (11) pp11-33.

Wright, M. and S. Marsden (2005) A response to the CCA report 'Making companies safe: What works?' *Health and Safety Executive Research Report 332* Her Majesty's Stationery Office, London, UK.

Wright, C., A. Mathee and M. Oosterhuizen (2014) Challenging times ahead for environmental health in South Africa: the role of the Environmental Health Research Network *South African Medical Journal* January 2014 Vol.104 (1) pp20-1.

Yeager, P. (1991) *The Limits of Law: The public regulation of private pollution* Cambridge University Press, UK.

Yin, R. (2003) *Case study research: design and methods 3rd Edition* Sage Publications, London, UK.

List of legislation

Note: the following legislation includes only the main laws used by CoJ EHPs to regulate environmental health in early 2007. For example there are more than 20 national regulations related to food safety and standards but only R918 is included here because of its constant use by CoJ EHPs in food control.

Acts of Parliament that influence EH regulation by EHPs

Agricultural Pests Act, 1983 (Act No. 36 of 1983)
Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965)
Businesses Act, 1991 (Act no. 71 of 1991)
Constitution of the Republic of South Africa (Act 108 of 1996)
Criminal Procedure Act, 1977 (Act no. 51 of 1977)
Environmental Conservation Act, 1989 (Act 73 of 1989)
Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 56 of 1972)
Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000)
Local Government: Municipal Structures Act, 1998 (Act No. 117 of 1998)
Hazardous Substances Act, 1973 (Act 15 of 1973)
Health Act, 1977 (Act 63 of 1977)
Health Professions Act, 1974 (Act 56 of 1974)
Meat Safety Act, 2000 (Act 40 of 2000)
National Building Regulations and Building Standards Act (Act 103 of 1977)
National Health Act, 2003 (Act 61 of 2003)
National Environmental Management Act, 1998 (Act 107 of 1998)
National Environmental Management Air Quality Act, 2004 (Act 39 of 2004)
National Water Act, 1998 (Act No. 36 of 1998)
Prevention and Combating of Corrupt Activities Act (Act 12 of 2004)
Tobacco Products Control Act, 1993 (Act No. 83 of 1993)

Regulations and by-laws that influence environmental health regulation

Regulations Governing General Hygiene Requirements For Food Premises And The Transport Of Food (No. R.918 of 30 July 1999)

Noise Control Regulations of Gauteng, 1998 (Provincial Gazette No. 35 of 24 April 1998)

CoJ Public Health By-laws (No. 830 of 21 May 2004)
CoJ Street Trading By-laws (No. 833 of 21 May 2004)
CoJ Waste Management By-laws (No. 834 of 21 May 2004)
CoJ Water Services By-laws (No. 835 of 21 May 2004)

South African case law

Grootboom and Others v Government of the Republic of South Africa and Others - Constitutional Court – Case CCT 11/00 – 2000
Occupiers of 51 Olivia Road v City of Johannesburg – Case CCT 24/07, Judgment of 15 February 2008

United Kingdom Legislation

Factory Act of 1844
Food and Drugs Amendment Act of 1872

Appendix A Regional Environmental Health Manager briefing

23 February 2007 City of Johannesburg Regional EH Managers Meeting

Environmental health policy in practice: the EHPs of the City of Johannesburg Metropolitan Municipality

Introduction

Thank you for inviting me to your meeting. My name is Rob Couch, I'm a British EHP and researcher working with the WHO Collaborating Centre for Urban Health and based at the MRC's Environment and Health Research Unit in Parktown. My presentation should last about 10 minutes and aims to introduce our proposed research, ask for your suggestions and finally ask for your participation.

Main research aims

I'm interested in how your street-level EHPs implement environmental health policy. They're at the front lines of improving environmental health in Johannesburg, but I've found little research that describes how EHPs make important day to day public health decisions. Environmental health is changing rapidly, but I would argue that until we better understand how we work, the full potential of our work may not be realised. Our main research aims are:

- To describe how environmental health practitioners (EHPs) implement environmental health policy at the front-line in Johannesburg;
- To consider the implications of these findings for environmental health policy (including local by-laws, IDP, HDS, growth and development).

The focus: street-level EHPs

I'm interested in the stories of front line EHPs, workers who are interacting with the public daily in their efforts to improve environmental health. I'm sure they have very interesting stories to tell about their work, it's these stories I would like to hear about. For example they could be stories about cases they've worked on, interesting people they've worked with or perhaps events that changed the way they work in environmental health?

Research methods

Firstly I would like to spend some time in your Regional Offices and Wards to get to know your EHPs and learn more about their work. After a certain period I will invite a small number (maybe 5 from two regional offices TBC) to an entry interview of about 1 hour to provide me with background on themselves and their work. At the end of this interview I will brief them on a simple work story collecting method. They will each be invited the following week for about half an hour to tell me 2 or 3 work stories, which I will record and then transfer into text. They don't have to write their stories down, by taping them I hope to get a better account. They will each be invited to check their stories in typed form, making any corrections or additions if necessary and to check that these are the stories they wanted to tell.

They will then be invited to provide more stories at a convenient time. At the end of the research period they will be asked to complete a short questionnaire. Before the end of June 2007 I would like to return to your offices and discuss my initial findings and get some feedback on the research

process and how it could be improved. I will then return to the UK to write up these results with the aim of communicating them to yourselves and the City of Johannesburg in early 2008.

Research confidentiality and co-ordination

Only I will have access to your EHPs' data and no data will be passed to supervisors or managers. Names and work groups will be permanently coded, only I will know the codes. Place names will also be changed, the location will only be identified as "Johannesburg." The coded research findings will be used in my thesis and may also be published in environmental health research journals at a later date. This investigation has been approved by the ethics committees of the University of Johannesburg and London South Bank University in the UK. Dr. Bismilla approved this research on 01 November 2006 and Peter Manganye is co-ordinating my work.

Research participation

Your participation is completely voluntary and there will be no problems if you don't wish to participate. If you decide to participate I will then contact you and arrange a date to visit your Regional office and brief your EHPs about my research in a similar manner to today, again asking for their voluntary participation. Your EHPs will also be asked to sign a consent form before I proceed with my research, reminding them that participation is voluntary and that they can withdraw from the investigation at any time without penalty and without giving a reason. The research period will be from March to early June 2007.

Though I cannot pay your EHPs to participate, I can buy them lunch! However, I hope the experience will provide a learning opportunity for all participants, myself included. If we are to demonstrate our value as EHPs I think we must become more research active in our day to day work, and I hope our research will make an important contribution to this.

Research suggestions and request for participation

Does anyone have any questions or feedback on these proposals?

Would you like to participate in this research? If yes, please could you write your name, region, contact details (including email) and regional address on the paper provided and I will contact you shortly.

Thank you for your time, if you have further questions/comments my contact details are:

Rob Couch Mobile: 0762 857 825 Email: couchr@lsbu.ac.uk

Appendix B EHP briefing

Environmental health policy in practice: the EHPs of the City of Johannesburg Metropolitan Municipality

Introduction

Thank you for inviting me to your meeting. My name is Rob Couch, I'm a British EHP and researcher working with the WHO Collaborating Centre for Urban Health and based at the MRC's Environment and Health Research Unit in Parktown. My presentation should last about 10 minutes and aims to introduce our proposed research, ask for your suggestions and finally ask for your participation.

Main research aim

I'm interested in how you implement environmental health policy in your day to day street-level work. You're at the front lines of environmental health in Johannesburg but I've found very little research that describes how you make important day to day public health decisions. Environmental health is changing rapidly the world over, but I would argue that until we better understand how we work, the full potential of our work may not be realised.

The focus: street-level EHPs

I'm interested in your stories as EHPs at the front line, workers who are interacting with the public daily to improve environmental health. I'm sure you have very interesting stories to tell about your work, it's these stories I would like to hear about. For example they could be stories about cases you've worked on, interesting people you've worked with or perhaps events that changed the way you work in environmental health?

Research methods

Firstly I would like to spend some time in your Regional Offices and Wards to get to know you and learn more about your work. After a certain period I will then invite a small number of you (maybe 5 from two regional offices TBC) to an entry interview of about 1 hour to provide me with background on you and your work. At the end of this interview I will brief you on a simple work story collecting method. You will then each be invited back the following week for about half an hour to tell me 2 or 3 work stories, which I will record and then transfer into text. You don't have to write your stories down, by taping them I hope to get a better account. You will then be invited to check your stories in typed form, making any corrections or additions if necessary and to check that these are the stories you wanted to tell. You will then be invited to provide more stories at a convenient time.

At the end of the research period you will be asked to complete a short exit questionnaire. Before the end of June 2007 I would like to return to your offices and discuss with you my initial findings and get some feedback from you on the research process and how you think it could be improved. I will then return to the UK to write up these results with the aim of communicating them to you in early 2008.

Research confidentiality

Only I will have access to your data and no data will be passed to your supervisors or managers. Your names and regions will be permanently coded, only I will know the codes. The location will be identified as "Johannesburg." The coded research findings will be used in my PhD thesis and

may also be published in environmental health research journals at a later date. This investigation has been approved by the ethics committees of the University of Johannesburg and London South Bank University in the UK. Dr. Bismilla approved this research on 01 November 2006 and Peter Manganye, Deputy Director Environmental Health, is co-ordinating my work.

Participation in the research

I'm interested in you all as one regional office group, therefore I will ask you all as a group at the end of this meeting if you would like to participate in this research? Your participation is completely voluntary and there will be no problems if you don't wish to participate.

If you wish to participate as a regional office, I will then ask each of you whose work involves implementing policy at the street-level whether you would like to participate as an individual. Please note that even if you as a group wish to participate, you do not have to participate as an individual. Participation is voluntary and you may withdraw from the investigation at any time without penalty and without giving a reason. I will ask you to sign a consent form before I start researching.

Unfortunately I cannot pay you to participate in this research, though I can buy you lunch! However, one of my aims is that the experience should provide a learning opportunity for all participants, myself included. If we are to demonstrate our value as EHPs I argue that we must become more research active in our daily work, and I hope this research will make an important contribution to this.

Next steps after this meeting

I will ask shortly if you have any questions or comments and give you my contact details. As you may want to discuss this research with your colleagues before deciding whether or not to participate, please consider:

Do we want to participate in this research as a Regional Office?

Do I want to participate in this research as an individual?

If you are interested in participating, the research period will be from March to June 2007. I will return to your offices shortly and ask for your verdict.

Any questions or comments?

Thank you for your time, if you have further questions my contact details are:

Rob Couch

Mobile: 0762 857 825

Email: couchr@lsbu.ac.uk

Appendix C Written consent form

Environmental health policy in practice: the EHPs of the City of Johannesburg Metropolitan Municipality

Written consent form

- I have read the attached information sheet on the research in which I have been asked to participate and have been given a copy to keep. I have had the opportunity to discuss the details and ask questions about this information.
- The Investigator has explained the nature and purpose of the research and I believe that I understand what is being proposed.
- I understand that my personal involvement and my particular data from this trial will remain strictly confidential. Only the investigator will have access to my data.
- I have been informed about what the data collected in this investigation will be used for and to whom it may be disclosed if published.
- I have received satisfactory answers to all of my questions.
- I hereby fully and freely consent to participate in the study which has been fully explained to me.
- I understand that I am free to withdraw from the study at any time, without giving a reason for withdrawing.

Participant's name: (block capitals)

Signature:

Regional office:

Contact phone number:

Date:

As the investigator responsible I confirm that I have explained to the participant named above the nature and purpose of the research to be undertaken.

Investigator's signature & date:

Appendix D Extract from case-EHP F2A observation notes

0007Observations/Region F2 – 03 May 2007

We then stop by a street hawker selling food underneath a road sign and very close to the kerbside. There are two men, both wearing dirty clothes. They are frying chicken pieces in a wok on a barbecue burning charcoal that looks fairly well buried into the ground, indicating to me that it may have been there some time. Their preparation area is made of a three wheeled shopping trolley, the fourth missing wheel being propped up by a brick. On the trolley they have placed a board, onto which goes a very old wooden chopping board and knife with dangling tape for a handle. They also have a washing bowl on the preparation surface, containing what appears to be soapy water. By the side of a tree opposite are two large metal pots, both covered with lids, that presumably contain the chicken pieces, though these were not looked at.

F2A conducts his discussion with the two in isiZulu and isiXhosa (I confirm later with him). The encounter appears amicable, with smiles all round, but F2A appears very clear on what he requires them to do. There appears to be some negotiation with F2A, but the meeting culminates in F2A writing them a written warning on the green carbon copy pad I have seen Melinda refer to. While F2A is writing this note with the one hawker, the other sells the last remaining chicken pieces in the oil to two factory workers. They walk by and appear to ask him for the chicken then visit another street vendor to make a phone call (using the Telkom phone and car battery set up) and then return for their chicken which in the meantime has been chopped and bagged expertly (but very unhygienically) by the vendor. F2A then takes a picture using a digital camera of the stall and hawkers, one of whom has turned away from the camera deliberately it appears. F2A then shows me the picture and points out the road sign they are trading underneath, a direct by-law offence.

After F2A has written the notice, he spends a minute explaining it to the one vendor, who appears poorly dressed but has a very smart cell phone. F2A is explaining the warning notice to the vendor in isiZulu, because he has written the notice in English. This is because the warning notice will be checked later by his manager and he explains that he always takes time explaining notices because people often do not understand English or they may be illiterate. F2A states that they are not meant to trade below a road sign, they must be a minimum of 3 metres from the road side and they cannot use charcoal as a fuel (they must use gas). He does not refer to their standards of hygiene, but in the warning notice he asked them to close their stall immediately. Neither of them had their ID and to take any further action he would need this. He explained that if he has asked on this occasion they would just have given him a false ID. On the drive back to the office later F2A checks that they have gone and indeed they have, but he speculates they will be somewhere else tomorrow.

Appendix E Researcher identity letter



12 April 2007

To whom it may concern

Identification of Robert Alexander Couch WHOCCUH Researcher

This letter is to confirm that Robert is a researcher with the World Health Organisation Collaborating Centre for Urban Health and is attached to the Environmental Health Department of the Department of Health, City of Johannesburg Metropolitan Municipality.

He has been granted permission by this Department to accompany Environmental Health Practitioners of all City Regions in their day to day district work during April, May and June 2007.

A photocopy of his British passport is attached to this letter to provide photographic identification.

If you require further confirmation, please contact me on 011 407 6683.

Yours sincerely,



Peter Manganye
Deputy Director: Environmental Health

Mr. Peter Manganye
DEPUTY DIRECTOR FOR ENVIRONMENTAL HEALTH
Health Department
Telephone: 011 407 6683/6812
Facsimile: 011 403- 0201
Cell: 082 464 8350
Email: manganyep@joburg.org.za

Appendix F EHP semi structured interview protocol

Thank you for agreeing to this interview which should last around 1 hour.
With your permission I would like to record the interview.

Firstly, some questions about you and the area you work in.

- What is your job title & main work responsibilities?
- How long have you worked as an EHP for the CoJ? Why choose CoJ? How were you initiated into CoJ?
- Before working in Joburg did you work as an EHP elsewhere? Probe – where, how long?
- What made you become an EHP?
- Before becoming an EHP did you have any other jobs? Probe
- What is your highest qualification? What EH qualifications? Which Institution and when? How well did EH qualifications prepare you for CoJ work?
- Are you studying for further qualifications? Probe - what, where and when graduate? If no, why not? Would you like to?
- Have you attended any training courses while at CoJ? Probe – what, where, when, changed your work?
- Are you a member of any professional organisations? Probe - which & why?
- Are you a member of a Union? Probe – which, why, have you needed them?
- Do you live in this Region? Probe – If Y how long, affects on work? If no, why?
- How would you describe the areas you work in?

Some open questions about your work

- What's it like working in this office?
- What do you like most/least about your job? Probe – why?
- What do you think is the main purpose of the CoJ EH Department?
- Do you refer to any policies or other documents in your day to day work? If yes, which and why?
- How would you describe your relations with: (TBC) Administrative staff; EHP colleagues; Managers (Ops & Regional); Ward Councillors; Other politicians?
- Which other CoJ Depts do you work with? Probe relations?
- What external (i.e. non-CoJ) organisations do you work with? Probe relations?
- How is your work as an EHP monitored? Probe thoughts on this

Some open questions about your relations with clients

(Clients defined as the subjects of your interactions who are not involved in service delivery)

- How would you describe your general relations with clients?
- How do clients access the services you provide as an EHP?
- How would you describe the typical client you encounter?
- Are any similarities between you and your clients? Probe
- Who do you find the easiest/most difficult clients to serve and why? Probe
- Are there any complaints from particular groups of clients? Probe – who, why?

Some open questions about legal procedures

- Have you received any training in legal procedures? Probe
- Do you consider EH offences to be criminal offences? If Y, how many? Which & why?
- In day to day work, how often do you see yourself as dealing with criminals?
- Do you associate any particular client groups with criminal behaviour?
- Are you a peace officer at the CoJ? If yes, for how long? If no, is this a problem?
- While at CoJ have you ever fined someone? Probe – are fines improving EH?
- While at CoJ have you ever been involved in a prosecution? Effectiveness? Maximum penalties for EH offences? Political influences?
- How do the Courts view environmental health cases in your experience? Probe fairness, relations with magistrates/judges?

Final section

- Over the history of your EHP work, are there any specific events that changed the way you do things?
- What do you feel about the attitude of the public to you in your work area? Probe – supportive, ambivalent, hostile?
- What do you feel about the attitude of the media/politicians to the work of EHPs in the CoJ? Probe – supportive, ambivalent, hostile?
- What makes a good EHP?
- What are greatest challenges facing EHPs in your region of Johannesburg? In South Africa?
- Where were you born and brought up? What year were you born? What is your marital status? Children?

Thank you for your time, is there anything you would like to add?

I would now like to brief you on the story collection methods and to arrange a date and time for our next meeting.

Do you have any questions before I proceed with the briefing?

Appendix G Managers semi structured interview protocol

Thank you for agreeing to this interview which should take around 30 minutes.
With your permission I would like to record the interview.

Some questions about your Region and the Department

- Numbers of EHPs in Regional Office?

	Region B	Region D1	Region F1	Region F2
Date				
Number of non-Manager EHPs				
Number of Ops Managers				
Number EHPs with less than 2 years experience at CoJ				

- How would you describe your Region?
- What do you think makes a good EHP?
- For **F1, F2 and D1** – how do you work with the other office in your Region?
- What do you think of environmental health targets?
- What do you think of political influences on the work of the EH Department?
- Do you think fines/prosecutions are improving environmental health?
- What are greatest challenges facing EHPs in your Region of Johannesburg? In South Africa?

Thank you for your time, is there anything you would like to add?

Investigator to provide general feedback on research process and next steps.

Appendix H Story briefing

I would like you to use this small book to write down a short outline of 2 or 3 different stories. These stories should describe situations that take place within your workplace during this time, or situations you might recall from the past. The outlines will help you remember the story when you tell me it later. You will not need to show me your outlines, they are only to help you remember.

I am interested in stories about how or when your own beliefs about fairness or unfairness helped you make decisions. At times your own beliefs may have conflicted with your organisation's informal or formal policies. At other times, these policies may have supported your own beliefs.

For example stories could involve an encounter between you and your clients, or be about encounters between you and your Department, other Departments, or members of your Regional Office. You may also retell a story that happened to someone else, even if you are not a character in that story.

As far as possible your stories should:

- have a plot or storyline, with a beginning, middle and end;
- identify who the characters are;
- explain the relationships among the characters;
- describe the feelings of the characters towards each other and the events;
- and include a description of the setting and circumstances in which the event(s) occurred.

During the research period you will be invited to a short meeting with Rob to describe your stories, which will be recorded using a digital voice recorder with your permission. This recording will then be typed up and presented to you for checking before the end of the research period.

Thank you for your participation.

If you have any questions please contact Rob on 0762 857 825 or couchr@lsbu.ac.uk

Appendix I Two part questionnaire

<p>Questionnaire briefing</p> <p>You are reminded that your answers are strictly confidential.</p> <p>Part I questions will be read out by Rob and your answers transcribed by him.</p> <p>Please complete Part II multiple choice by circling the answer that you most agree with.</p> <p>If you do not understand a question please do not answer it.</p> <p>(Adapted from Maynard-Moody and Musheno 2003 and Hutter, 1988)</p>
<p>Part I</p>
<p>1. Imagine that while driving through a remote part of your area you notice a new tuck shop serving an informal settlement. There are no other tuck shops in the area. On your first inspection you find that the tuck shop is built of temporary materials and sells only packaged bread and a few tins of food.</p>
<p>a. How would you proceed in this situation?</p>
<p>b. What do you think your EHP colleagues would do?</p>
<p>c. What would your Managers expect you to do?</p>
<p>d. Would you act differently if it was the last day of the month and you had only served two fines instead of your monthly target of three?</p>
<p>2. A crèche applying for a permit in your area has been given provisional approval by the EMS, building and licensing inspectors. The person providing the service is friendly and co-operative and is providing facilities and care of a high standard, however your calculations of indoor care area space find that there is only space for 30 children, but the crèche has 35 each day.</p>
<p>a. How would you proceed in this situation?</p>
<p>b. What do you think your EHP colleagues would do?</p>
<p>c. What would your Managers expect you to do?</p>
<p>d. Would you act differently if the service provider was aggressive and unco-operative?</p>
<p>3. Imagine that you find two identical food premises in your area that have both been trading for one month without a CoA. One is owned by a national company, the other is owned by a young family that have taken out a huge loan to set up their new business.</p>
<p>What would you do and would you treat the two cases in the same way? Please explain your answer</p>
<p>4. You receive ongoing noise complaints from local residents about a nightclub in your area that backs onto a residential area. You have visited the nightclub every Friday night with your enforcement colleagues since the complaints started and have issued statutory notices and now three fines. The owner has paid the fines but is unwilling to do anything else. The angry complainants have now contacted the Ward Councillor and are demanding results.</p>
<p>How would you proceed in this situation? (Probe - does the Ward Councillor intervention make a difference?)</p>

Part II multiple choice questions				
1. In your day to day work, how much authority do you have in determining what tasks you do?				
None	A little	Some	Quite a bit	Considerable
2. How much authority do you have in establishing the rules and procedures about how your work is to be done?				
None	A little	Some	Quite a bit	Considerable
3. When clients do not comply with these rules and procedures, how much authority do you have in deciding how they should be handled?				
None	A little	Some	Quite a bit	Considerable
4. How clear and reasonable do you consider the Environmental Health Department's vision and objectives?				
Very unclear & unreasonable	Unclear & unreasonable	Undecided	Clear & reasonable	Very clear & reasonable
5. When clients do not comply with this vision and these objectives, how much authority do you have in deciding how they should be handled?				
None	A little	Some	Quite a bit	Considerable
6. During a normal working week, how frequently do you encounter non-compliant clients?				
Very rarely	Occasionally	Quite often	Very often	Constantly
7. What percentage of time do you have written rules and procedures for dealing with your day to day work situations?				
0 – 20%	21 – 40%	41 – 60%	61 – 80%	81 – 100%
8. How precisely do these written rules and procedures specify how your main work tasks are to be done?				
Very general	Mostly general	Undecided	Quite precisely	Very precisely
9. Do you prefer rules and procedures which give a precise definition of standards or those which involve your individual interpretation?				
Precise definition		Undecided	Individual interpretation	
10. In the last month how often did you follow rules and procedures to complete your day to day work?				
Very rarely	Occasionally	Quite often	Very often	Constantly

11. Do you find the rules and procedures available to you are adequate to deal with the everyday problems you face in your work?				
Very inadequate	Inadequate	Undecided	Adequate	Very adequate
12. How often do you perform the same work tasks from day to day?				
Very rarely	Occasionally	Quite often	Very often	Constantly
13. In performing your main work tasks, how different are your day to day situations?				
Completely different	Very different	Sometimes different	Mostly the same	Nearly always the same
14. How much of your work deals directly with people face to face?				
None	About 25%	About 50%	About 75%	All of my work
15. When working with clients, how different are your day to day work situations?				
Completely different	Very different	Sometimes different	Mostly the same	Always the same
16. How easy is it for you to know whether you did your work correctly?				
Very difficult	Quite difficult	Undecided	Quite easy	Very easy
17. What percentage of the time are you generally sure of what the outcomes of your work efforts will be?				
40% or less	41 – 60%	61 – 75%	76 - 90%	91% or more
18. How much do you feel your day to day work is influenced by local government politics?				
Very much	Considerable	Some	A little	Not at all
19. Do you think that politics should affect your work?				
Yes	Sometimes	No	Don't know	
20. How adequate would you describe the resources you have to work with?				
Very inadequate	Inadequate	Undecided	Adequate	Very adequate
21. How heavy was your workload in the past month?				
Light	A bit light	About right	Heavy	Too heavy

22. My work as an EHP is monitored too much by the Environmental Health Department.				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
23. The Departmental targets I have to meet do not reflect the value of my work as an EHP.				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
24. I feel I am paid fairly for my work.				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
25. I believe that managers in this Department are paid fairly.				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
26. I am concerned about the differences in pay between front line staff and managers in this Department.				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
27. I am concerned about the differences in pay between front-line staff and managers in society in general.				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
28. I am concerned about the differences in pay between EHPs in this Department and in other Metropolitan Municipalities.				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
29. The role of government should be to help people.				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
30. It is the responsibility of government to meet everyone's needs, even in cases of poverty, sickness, unemployment and old age.				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
31a. How loyal do you feel towards your Regional Office?				
No feeling of loyalty	Very little loyalty	Some loyalty	Moderate loyalty	Very strong feeling of loyalty
31b. How loyal do you feel towards the City of Johannesburg Environmental Health Department?				
No feeling of loyalty	Very little loyalty	Some loyalty	Moderate loyalty	Very strong feeling of loyalty

32. Overall, how satisfied are you with your job?

Very unsatisfied	Quite unsatisfied	Satisfied	Quite satisfied	Very satisfied
------------------	-------------------	-----------	-----------------	----------------

33. If a suitably qualified friend of yours was thinking of following a career as an EHP, would you advise her or him to do it?

Definitely yes	Probably yes	Undecided	Probably no	Definitely no
----------------	--------------	-----------	-------------	---------------

Thank you for completing this questionnaire, please return it to Rob immediately.

Appendix J Case study database components

Part 1: Case study diaries

Notes were maintained within diaries that summarised all research activities and contacts made in Johannesburg. These diaries assisted in maintaining the chain of evidence and were archived by the researcher.

Part 2: Fieldwork observation data and notes

These data were written straight onto computer at the end of each fieldwork day. They provided empirical data for this thesis and also informed the design of the case study.

Part 3: Interview, questionnaire, document and narrative analysis data and notes from case EHPs

These data comprise the original digital files and transcripts from the methods undertaken with each case EHP and any work related documents (e.g. law enforcement and performance management related documents). They also include reflective notes maintained by the researcher after the completion of each method.

Part 4: Interview notes from other EHPs and managers

These data comprise the original digital files and transcripts and reflective notes from the interviews with other (non-case) EHPs and managers during fieldwork.

Part 5: Bibliography of fieldwork related documents

A bibliography was created for all law enforcement paperwork and the wider environmental health and local government related policy documents collected from EHPs, managers and other sources (e.g. CoJ offices, conferences, newspapers) during fieldwork.

Appendix K1 Activity data by MHS category over July 2005-June 06

(Source: CoJ DoH 2006b)

(- = No data)

Main MHS category	Sub-category of premises, activity or complaint	Total inspections, visits, complaints or samples	Region B	Region D1	Region F1	Region F2
Food control	Food premises (retail)	19084	2538	753	1317	899
	Food factories	1024	70	2	93	220
	Informal food traders	15765	581	183	2543	230
	Food sampling	616	Nd	Nd	Nd	Nd
Health surveillance of premises	Places of care (e.g. crèches, retirement homes)	5601	589	528	87	192
	Accommodation establishments (non-food e.g. bad buildings, hotels)	1117	138	5	281	122
	Business premises (formal, non-food – e.g. offices, mortuaries)	26333	4558	1261	2130	881
	Personal services (e.g. hair dressers, clinics)	2407	414	303	324	107
	Formal dwellings	747196	146586	102383	44 483	33 263
	Informal dwellings	227 315	4886	26513	1901	602
	Community facilities and recreation premises (e.g. night clubs, pools)	1254	186	189	109	186
	Animal related premises (e.g. kennels, pet shops)	742	36	1	47	31
Waste management	Solid waste/sanitation	4405	3078	4	755	21
	Open areas (e.g. public areas, vacant stands)	13096	1117	1093	266	308
Surveillance and prevention of CDs	Investigations of communicable diseases	279	-	-	-	-
	Bacteriological samples	72	-	-	-	-
Vector control	Visits to rodent infested premises & treatments	35577 & 11838	-	-	-	-
Environmental pollution control	Noise: after hours inspections & complaints	1268 & 524	-	-	-	-
	Air – Related complaints	1473	-	-	-	-
	Air - Diesel vehicle emissions tests	7655	1513	661	1039	660
Chemical safety	Awareness training and poisoning investigations	-	-	-	-	-

Appendix K2 Evaluations and health risks by MHS category over July 2005-June 06

(Source: CoJ DoH 2006b)

(- = No data)

MHS category	Sub-category of premises, activity or complaint	Total evaluations or samples (% health risks)	Region B	Region D1	Region F1	Region F2
Food control	Food premises (retail)	29248 (13%)	3970 (23%)	784 (10%)	9783 (12%)	946 (7%)
	Food factories	1689 (12%)	115 (37%)	58 (21%)	580 (6%)	104 (11%)
	Informal food traders	16877 (19%)	1092 (27%)	334 (10%)	5402 (27%)	443 (11%)
	Food sampling - & microbiological & chemical	492 (2%) & 124 (5%)	-	-	-	-
Health surveillance of premises	Places of care	8216 (14%)	1148 (9%)	423 (61%)	1468 (11%)	1087 (1%)
	Accommodation establishments	2583 (62%)	-	-	-	-
	Business premises	11594 (11%)	1945 (47%)	316 (21%)	4383 (2%)	685 (6%)
	Personal services	308 (29%)	-	-	-	-
	Formal dwellings	24450 (36%)	-	-	-	-
	Informal dwellings	14918 (88%)	-	-	-	-
	Community facilities and recreation premises	764 (18%)	-	-	-	-
Waste management	Animal related premises	1195 (3%)	-	-	-	-
	Solid waste/sanitation	126 (25%)	-	-	-	-
Environmental pollution control	Open areas	8297 (67%)	-	-	-	-
	Noise – after hours inspections and complaints	524 evaluations, 286 notices or reports	-	-	-	-
	Air quality – complaints	1473 evaluations, 202 notices or reports	-	-	-	-

Appendix L Example of a statutory notice (Confidential, to be redacted if published)

14 FEBRUARY 2005

REGISTERED MAIL

K & S PTY LTD
P O BOX 516
MORNINGSIDE
2108

APPLICABLE LEGISLATION
PUBLIC HEALTH BY-LAWS 2003
Section 5,7,17 & 33(a, b, c)
Health Act No. 63 of 1977
Chapter 4, Section 20 and 27

Sir/Madam

STAND 685: 122 EIGHTH AVENUE; MAYFAIR

Please take notice that after an inspection carried out on the abovementioned premises on 14 February 2005, the city of Johannesburg is satisfied that a nuisance/unsatisfactory condition exists on the premises. You are in terms of the said legislation required to abate and prevent the recurrence of the nuisance/unsatisfactory condition occasioned by the abovementioned premises, being in such a state as to be, offensive, injurious, or dangerous to health by reason of:

1. Discharging wastewater onto the yard.
2. Blocked drains and broken gulley pipes.
3. Refuse accumulation on the yard.
4. Builder's rubble on the yard.

And for that purpose to do the work or things herein below specified within **seven (7) days** from the date hereof:

1. Take the necessary action to prevent wastewater discharging onto the yard.
2. Repair blocked drains and broken gulley pipes.
3. Remove the builder's rubble and refuse on the yard.
4. Maintain the premises in a clean and tidy condition at all times.

Note: Failure to comply with the provision of this notice may result in legal proceedings being instituted against you, or compel the Council to take such actions deemed necessary to remove the nuisance/unsatisfactory condition at your cost, without further notice. You are however, cautioned that the cost of work done by the Council may be much higher than if it is done by yourself. In addition a spot fine may be issued and on conviction, the court may impose a fine of up to R2000.

Your co-operation will however be appreciated.

Yours faithfully

MANAGER: ENVIRONMENTAL HEALTH: REGION 4

Enquiries: David Muhali
Tel: (011) 474-6703/4
Fax: (011) 474-6707

Be smart!

4 easy steps to:

a clean environment, better health,
faster cooking & saving money



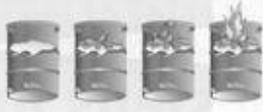
liznastroeni@joburg.org.za

Project of the Environmental Health Section
Enquiries... Tel: 010 237 8000
Patent Application Number: 2008477
Printed on recycled paper

Joburg

City of Johannesburg
Regions 1 and 2
Environmental Health

- 1



Place paper and pieces of wood on your new imbawula as shown and light the fire.
- 2



Place the chimney over the fire and add coal gradually by hand. When coal starts glowing, remove chimney.
- 3



Place the heat screen around the imbawula. This prevents coal from burning too quickly.
- 4



Place grid in heat screen...and imbawula! Now cooking can start.

Use the Smokeless IMBAWULA

<p>Traditional Method</p> <p>SMOKE:</p> <ul style="list-style-type: none"> • causes headaches • causes difficult and painful breathing • harms your health • causes burning and watery eyes • ruins the environment 		<p>Smokeless IMBAWULA</p> <p>And YOU will save:</p> <p>MONEY: less wood or coal used</p> <p>TIME: ready for use quicker</p> <p>ENERGY: more heat less smoke less effort</p> <p>HEALTH: minimise health risks</p>
--	---	---

Appendix O Front page of *City Vision* newspaper on housing eviction

(Source: Mashaba 2007b)

Six day old child, mum evicted

Ronald Mashaba

He is only six days old and is already experiencing the harsh realities of life in central Joburg.

Thandolwethu Sithole and his unemployed mother, Sindiswa Noyolase, were forced onto the chilly streets of Berea in the early hours of Thursday morning. "I was shocked when they (the committee members of the building) stormed into my room and ordered me to leave.

"They started dumping my belongings in the reception area of the building, and told me to leave immediately," Noyolase said.

She was staying at the Kurr Bill building, 20 Soper Road, Berea, and had consistently paid her rent for more than three years, until she recently lost her job and could not pay her rent every month. "I pay them whenever I get money from piece jobs, but now that I have a baby it is difficult for me to find piece jobs."

Noyolase used to receive support from her boyfriend, but he is now on the run from the police.

With temperatures plummeting to low temperatures, little Thandolwethu and his mom have no home, and every sunset for them turns into a nightmare.

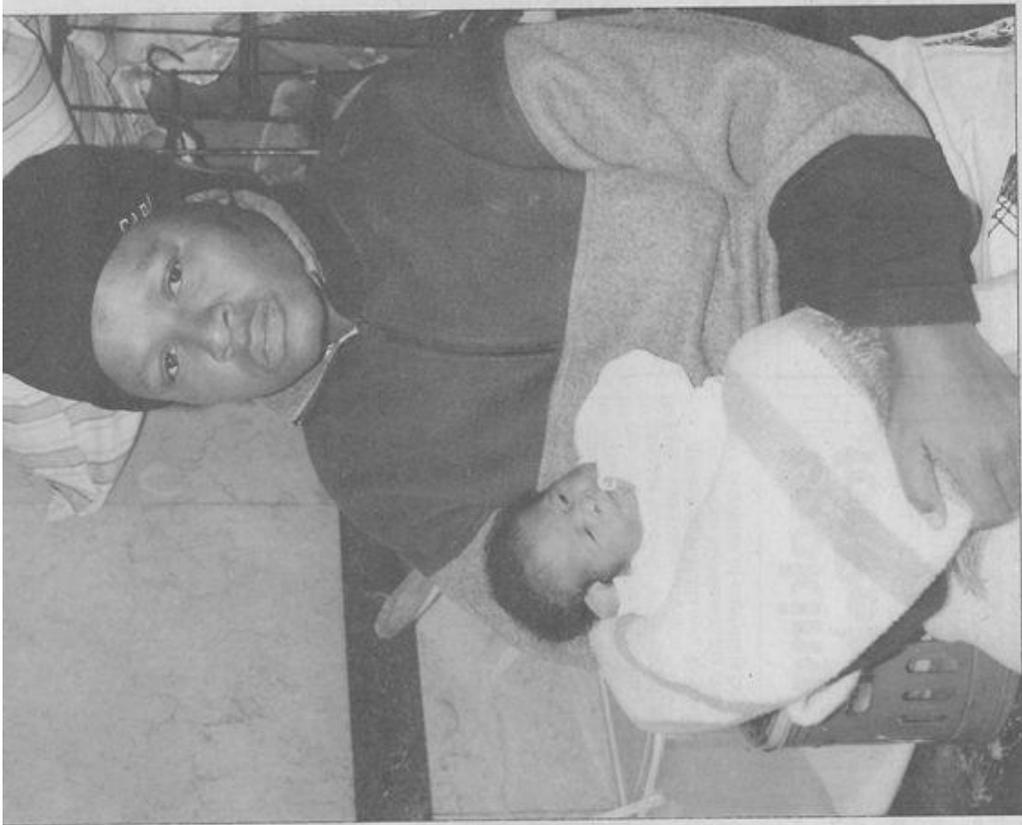
The chairperson of the committee, John Sithole, said they received orders from the Johannesburg Council's environmental health inspectors to renovate the building, and failure to do so would have resulted in a fine. "We have no option but to evict people who default on their rent. We also want to get rid of fraudsters in the building."

Sithole said the Noyolase's were not the only family evicted from the building, and those who were forced out for defrauding the committee could face charges of fraud.

The committee discovered that residents were adding a zero digit to their bank deposit receipts, while paying less money.

"Let's take someone who is supposed to pay R300. They pay R30 at the bank and add a zero on the slip that they give us," Sithole added that they and ABSA bank are going to investigate the matter, and a case of fraud will be filed at the Hillbrow Police Station.

While other tenants know why they were evicted, little Thandolwethu does not and finds himself in the worst experience of his young life.



Thandolwethu and his mother, Sindiswa Noyolase, were evicted from a flat in Berea and are now homeless. Picture: Ronald Mashaba

Appendix P HPCSA EHP competency requirements and scope of profession

(Source: HPCSA, 2006a)

Industrial, Commercial and Housing Developments

Matters relating to EIA for development/programmes, and the inspection of building plans for safety, health, adequacy of lighting, ventilation, space and amenities, the orientation and aesthetics thereof including accessibility to sanitary services.

Waste Management

Matters relating to the handling, storage, transportation and disposal of industrial, domestic and commercial solid waste, including waste from health and veterinary care facilities, as well as effluents and sludges. This includes cemeteries and crematoria.

Water Services

Matters relating to the inspection of water and waste water treatment works and networks to determine the public health and safety in respect of the adequacy of processing, existence of nuisances and quality monitoring of water for human and animal consumption.

Pest Control

Matters relating to the identification, eradication of vector breeding areas and their destruction, including procedures defined on the International Health Regulations for the control of vector borne communicable diseases associated with international travel.

Food Safety

Matters relating to the safety of production storage, transportation, processing and retailing of foodstuffs for human and animal consumption, and includes food handling and processing establishments.

Transport Safety

Matters relating to safety and hygiene of road, air and sea-going vessels, including the transportation of foodstuffs, and the general accident prevention and management of hazardous substances.

Tourism and Leisure

Matters relating to safety and hygiene of buildings, facilities and amenities for holiday accommodation and leisure.

Pollution Control

Matters relating to the prevention of air, water and soil pollution, including and radiation hazard prevention and control.

Surveillance

Research and Development

Matters relating to the identification, design and conduct of Environmental Health research related to Environmental Health and development of new methods and technologies for Environmental Health Practice (law, service, Policy).

General

Any other matter incidental to or of Environmental Health significance, which, if unattended would compromise the quality of public and Environmental Health including education and the promotion of healthy lifestyles.

Appendix Q IDP 2006-11 and environmental health goal (Source: CoJ 2006b pp161-2)

Long-term goals	Long-term strategic Interventions	5-year strategic objectives	5-year IDP programmes and key programme achievements
1. Systematic improvement in environmental health conditions	Reduce land, surface, water, air, noise and lighting pollution through rigorous monitoring and enforcement of pollution control measures on an on-going basis	Reduce pollution levels from a baseline index (to be established, within specific pollution categories)	<p>Pollution prevention and reduction programme</p> <ol style="list-style-type: none"> 1. Identify all major sources of industrial and commercial air, water and land pollution within three years and institute rigorous monitoring and covering at least 15% of polluters annually 2. Reduce specific pollutant level through rigorous enforcement of legislation and by-laws 3. Investigate and take action in identified pollution hotspot areas 4. Through pilot projects with respect to specific pollutants, investigate appropriate mechanism to introduce a polluter pays principle 5. Strengthen legislative compliance monitoring, adherence and enforcement with respect to issues such as chemical and sewerage spillage 6. Anticipate risks and threats of transportation of hazardous waste <p>Air pollution prevention programme (edited)</p> <ol style="list-style-type: none"> 1. Reduce specific pollutant levels of air pollution through the implementation of mitigation measures 2. Reduce air pollution in townships and informal settlements by facilitating and adoption of coal efficient burning devices 3. Expand testing and enforcement of emissions levels in private vehicles <p>Land pollution (edited)</p> <ol style="list-style-type: none"> 1. To specifically combat land pollution: more vigorously discourage the illegal dumping of litter <p>Water pollution (edited)</p> <ol style="list-style-type: none"> 1. To specifically combat water pollution: through ongoing water quality-monitoring programme (of surface, ground and potable water) with an emphasis in those areas most at risk of environmental health threats

Appendix Q IDP 2006-11 and environmental health goal (Source: CoJ 2006b pp183-4)

Long-term goals	Long-term strategic Interventions	5-year strategic objectives	5-year IDP programmes and key programme achievements
1. Systematic improvement in environmental health conditions	Reduce land, surface, water, air, noise and lighting pollution (cont.)	Reduce pollution levels (cont.)	<p>Noise, visual and light pollution</p> <ol style="list-style-type: none"> 1. To specifically combat noise pollution: ensure that all new developments are established within clear noise contouring standards; etc 2. To specifically combat visual/light pollution: review policies governing outdoor advertising to mitigate nuisance; investigate the replacement of high-mast lighting where appropriate
	Manage the urban environment, through effective monitoring and, where necessary, enforcement of relevant legislation to reduce conditions that foster health risks	An integrated and well resourced system in place for environmental health certification, monitoring and enforcement	<p>Environmental health risk management programme (edited)</p> <ol style="list-style-type: none"> 1. Develop a seamless approach to health & safety surveillance so that there is a single point of certification (preferably one in each region) for buildings, food establishments, early childhood development facilities, other places of care, etc 2. Within this seamless approach, further develop and maintain well-resourced and efficient systems of monitoring compliance and enforcement for: food hygiene at food establishments; waste management at key points of waste generation; water quality; disposal of the dead at funeral undertakers and cemeteries; chemical safety; and general public health at high risk buildings and premises 3. Increase the number of environmental health officers in the field based on actual workloads. 4. Reduce the risk of vector-borne diseases through targeted vector control programmes in selected hotspots (key targeted areas to include: Alexandra) 5. Develop a clear set of health and safety guidelines for all new City of Johannesburg capital projects, and ensure 100% compliance with these
	Work with business, partner organisations and communities to promote and support the achievement of consistently high standards of public health in food establishments, ECD facilities etc	At a consistent rate of monitoring and enforcement, reduced incidence of noncompliance with environmental health regulations and set standards	<p>Environmental health promotion programme (edited)</p> <ol style="list-style-type: none"> 1. Within a seamless approach, promote environmental health and safety awareness and compliance in ‘nuisance’ buildings, Early Childhood Development facilities etc to create environmental health awareness and compliance to legislation 2. Working across City Departments and with external partners, assist proprietors and residents who have demonstrated need and limited financial capacity to upgrade to the applicable standards. 3. Run five citywide campaigns to promote public awareness around the safe handling and storage of chemicals 4. Develop and run an on-going health promotion and education campaign targeting food handlers

From FI HANNA TRAINING DAY
4th Floor, C.S. Group,
11 May 2007.

HYGIENE ON FOOD PREMISES

Some persons who conduct or are employed on food premises are unaware of the basic principles of food hygiene and consequently their premises do not meet with the requirements of the Local Health Department. To assist such persons to supply clean and wholesome food to the public, the following basic requirements are given as a guide.

**REMEMBER - YOUR LOCAL HEALTH DEPARTMENT
IS THERE FOR ADVICE AND ASSISTANCE**

The requirements are:-

1. The premises must be kept clean.
2. The yard and toilet are also part of your premises and must be kept clean.
3. All utensils and equipment must be clean.
4. Tongs or other suitable instruments must be used when handling unwrapped food.
5. Perishable foods must be kept under refrigeration whilst hot foods intended for immediate consumption must be kept piping hot.
6. Unwrapped food displayed in a shop must be covered to protect it from flies and dust and contamination by the public.
7. Bread when sold to the public should be wrapped its full length in a clean wrapping, not being newspaper or other printed paper.
8. All straws or other similar devices provided for the consumption of drinks should be factory wrapped.
9. When serving or preparing food overalls must be worn. These must be kept clean, and made of a light coloured washable material.
10. It is the responsibility of the person in control of the premises to provide his employees with clean overalls.
11. Personal clothing must also be clean and when not being worn must be kept in a locker or change-room - and not left lying loose in the shop, preparation room or storeroom.
12. A nailbrush, soap and disposable paper towels or a clean continuous towel must be provided at the washhand basin.
13. The hands must be frequently and thoroughly washed, especially after visiting the toilet.
14. No smoking is allowed on any part of the premises by persons who handle foodstuffs.
15. The premises must be kept free of cockroaches, rats, mice, etc. Cockroaches can be killed by spraying with a good insecticide, whilst traps and rodenticides should be properly used against rats and mice.
16. When spraying with an insecticide, remember not to spray on or near foodstuffs, as some insecticides are poisonous to humans. Foodstuffs should be removed from the area to be sprayed - or suitably protected against contamination by spray.
17. Foodhandlers with sores or skin infections should not handle foodstuffs.
18. Staff who are ill should not be permitted to handle foodstuffs.
19. The licking of fingers for lifting wrapping material and blowing into packets is not permitted.
20. A food shop or storeroom is not a house and must not be used for sleeping purposes.
21. The use of chipped crockery is not permitted.
22. Animals are not permitted to be kept on food premises.

ISSUED BY:
YOUR LOCAL HEALTH DEPARTMENT.

PUBLISHED BY:
THE INSTITUTE OF PUBLIC HEALTH,
P.O. BOX 4623,
JOHANNESBURG.

