Food-sector SMEs and the Environment: Knowledge, Learning and Regulation

being a thesis submitted for the degree of

Doctor of Philosophy (PhD)

in the University of Hull

by

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February 2005
PAGE NUMBERING AS ORIGINAL
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS:</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgements</td>
<td>i</td>
</tr>
<tr>
<td>List of Tables</td>
<td>ii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>iii</td>
</tr>
<tr>
<td>CHAPTER 1: INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1 The food-sector, SMEs and the environment</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Research aims</td>
<td>4</td>
</tr>
<tr>
<td>CHAPTER 2: FOOD-SECTOR, REGION &amp; ENVIRONMENT</td>
<td>8</td>
</tr>
<tr>
<td>2.1 Food manufacture and processing: the national picture</td>
<td>8</td>
</tr>
<tr>
<td>2.2 Food and drink in Yorkshire and the Humber</td>
<td>11</td>
</tr>
<tr>
<td>2.3 The environmental impacts of the food and drink sector</td>
<td>22</td>
</tr>
<tr>
<td>2.3.1 Packaging and waste</td>
<td>23</td>
</tr>
<tr>
<td>2.3.2 Energy use</td>
<td>25</td>
</tr>
<tr>
<td>2.3.3 Water use and wastewater disposal</td>
<td>27</td>
</tr>
<tr>
<td>2.4 A need to understand the sector</td>
<td>29</td>
</tr>
<tr>
<td>CHAPTER 3: LITERATURE REVIEW</td>
<td>33</td>
</tr>
<tr>
<td>3.1 Introduction</td>
<td>33</td>
</tr>
<tr>
<td>3.1.1 Business and the environment: initial thoughts</td>
<td>33</td>
</tr>
<tr>
<td>3.2 SMEs' place the economy</td>
<td>38</td>
</tr>
<tr>
<td>3.3 Ecological modernization</td>
<td>45</td>
</tr>
<tr>
<td>3.4 Organisational knowledge</td>
<td>50</td>
</tr>
</tbody>
</table>
3.4.1 Knowledge & knowing
3.4.2 New concepts of knowledge
3.4.3 The new 'knowledge economy'

3.5 Knowledge and regulation

3.6 Organisational learning

3.6.1 Approaches to organisational learning
3.6.2 Re-situating the workforce in OL
3.6.3 Socially situated learning

3.7 Chapter conclusions

CHAPTER 4: METHODOLOGY

4.1 Introduction

4.2 Qualitative research & grounded theory

4.2.1 Qualitative research
4.2.2 Grounded theory

4.3 Identifying the population

4.3.1 SME size bands
4.3.2 SME ownership status

4.4 Sampling

4.4.1 ‘First contact’ with the SME
4.4.2 Acceptance rates
4.4.3 Collecting pre-interview information

4.5 Pilot interviewing

4.6 Ethical issues and informed consent

4.7 Conducting the interviews

4.7.1 Positionality
4.8 Triangulation: the use of additional data sources

4.8.1 Shadowing
4.8.2 Supplementary Interviews
4.8.3 Case Studies

4.9 Coding and analysis

4.9.1 ‘Opening up’ interview material

4.10 Conclusions

CHAPTER 5: KNOWLEDGE

5.1 Introduction

5.2 The perceived value of environmental knowledge

5.2.1 Attitudes and behaviour
5.2.2 Are attitudes representative of a whole?

5.3 Perceptions of risk

5.3.1 Positions of risk

5.4 The invisibility of environmental problems

5.4.1 The immediacy of issues

5.5 Change and the requirement for ‘new’ knowledge

5.5.1 Ways of working and cultural norms
5.5.2 Knowledge and planning

5.6 Knowing about the environment

5.6.1 Cost burden
5.6.2 A reluctance to handle environmental issues
5.6.3 Specialist personnel
5.6.4 Staff holding environmental responsibility

5.7 Sourcing environmental knowledge

5.7.1 Environmental support: confusion and overlap
### 5.7.2 From the general to the specific? 166

### 5.8 Trust and the providers of knowledge 173

- **5.8.1 Trade nationally, source locally** 177
- **5.8.2 European bureaucracy** 179

### 5.9 Chapter conclusions 180

### CHAPTER 6: KNOWLEDGE AND REGULATION 183

#### 6.1 Introduction 183

#### 6.2 Regulation in the food-sector 184

#### 6.3 Regulation and regulations 186

#### 6.4 Regulations affecting firms in the region 189

- **6.4.1 Awareness of regulation** 189
- **6.4.2 The rationale for regulations** 193
- **6.4.3 Learning** 194

#### 6.5 Acceptability of regulations 199

- **6.5.1 A limited capacity for change?** 200
- **6.5.2 The limits of acceptability** 201

#### 6.6 Regulation as a motivator 206

- **6.6.1 Fragmented regulatory control** 207
- **6.6.2 Ways forward for regulation** 212
- **6.6.3 Maintaining the status quo** 214
- **6.6.4 'Us and them': the smallest firms and regulation** 216

#### 6.7 Experiences with regulators 221

- **6.7.1 Regulators: initial views** 222
- **6.7.2 Facing intrusion and losing control** 226
- **6.7.3 Emotions and attitudes to regulation** 228

#### 6.8 Chapter conclusions 235
CHAPTER 7: LEARNING

7.1 Introduction

7.1.1 Learning and systems thinking

7.2 Organisational learning and environmental issues

7.2.1 A need for learning
7.2.2 Difficulties accepting learning in business

7.3 Types of learning

7.3.1 Technical (individual) learning
7.3.2 Social (interactive) learning
7.3.3 Learning as an episodic process

7.4 Denial and company image

7.5 Differences in small and large firms

7.6 Learning without acting

7.7 Communication of learning within SMEs

7.7.1 Employee participation
7.7.2 Motivation

7.8 Chapter conclusions

CHAPTER 8 ENVIRONMENTAL ACTION

8.1 Introduction

8.2 The supply chain: pressures and motives

8.3 Ethics and social responsibility

8.4 Environmental measures

8.5 States of anticipation

8.5.1 Water reduction
8.5.2 Flash condensate 298
8.5.3 River clean up 301
8.5.4 GMO removal 304
8.5.5 Wastewater recovery 306

8.6 Classifying reactive and proactive change 308

8.7 Environmental management and systems 311

8.7.1 Environmental management 313
8.7.2 Problems with environmental management 315

8.8 A need to manage environmentally 318

8.9 Environmental management and total quality 321

8.9.1 The core requirements and shortfalls of EM & TQM 323
8.9.2 The need for continuous improvement 324
8.9.3 The need for a holistic approach 326
8.9.4 The need for multi-employee involvement 327

8.10 Redefining environmental management 329

8.11 Chapter conclusions 331

CHAPTER 9: CONCLUSIONS

9.1 Introduction 333

9.1.1 Knowledge 335
9.1.2 Organisational Learning 342
9.1.3 Environmental Action 349
9.1.4 Regulation 352

9.2 Final Comments 357

CHAPTER 10: BIBLIOGRAPHY

Appendices
Acknowledgements:

Many people have contributed to this thesis in different ways. Much of that help was practical; some was supportive. All was important. In no particular order I would like to thank the people and various bodies who have delivered over the last (I lose count) five years.

My University of Hull supervisory committee: Professor Dave Gibbs, Dr Sally Eden and Dr Andy Jonas. From the Environment Agency: Dr Tony Edwards. Huge thanks for your tireless reading and re-reading of chapters and constructive comments from day one.

To my internal and external examiners (Professors Graham Haughton and Judith Petts), thanks for the constructive advice and criticism during my viva.

To the various Environment Agency staff in Hull and Leeds who put up with me on several shadowing trips across the Yorkshire and Humber region.

To the Food and Drink Federation, who were not only good enough to grant me an extended interview at their offices, but also gave me free access to their member databases and technical research.

Finally, to my family (especially Fiona, Dad, Colin and Claire Brown): thanks for the encouragement and support these last few years.

Andy Horrocks
15th February 2005
### List of Tables

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chapter 2</strong></td>
<td></td>
</tr>
<tr>
<td>2.1 Concentrations of Food-Sector across the UK</td>
<td>9</td>
</tr>
<tr>
<td>2.2 Sub-Sectoral Breakdown of Yorkshire and the Humber</td>
<td>21</td>
</tr>
<tr>
<td>2.3 Food-Sector Specialisms of Yorkshire and the Humber</td>
<td>22</td>
</tr>
<tr>
<td>2.4 Main Energy Demands of the Food and Drink Sector</td>
<td>26</td>
</tr>
<tr>
<td><strong>Chapter 3</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Numbers of Enterprises and Employment by SME Size</td>
<td>39</td>
</tr>
<tr>
<td>3.2 Chronological Development of Principal OL Approaches</td>
<td>69</td>
</tr>
<tr>
<td><strong>Chapter 4</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 Central Concepts of Research, sub-Categories and Labels used for Grounded Theory Analysis</td>
<td>105</td>
</tr>
<tr>
<td><strong>Chapter 5</strong></td>
<td></td>
</tr>
<tr>
<td>5.1 Management Positions responsible for Environmental Issues within the Sample</td>
<td>149</td>
</tr>
<tr>
<td>5.2 Stated Reasons for Spreading Environmental Responsibility across the Firm</td>
<td>150</td>
</tr>
<tr>
<td>5.3 Sources (unranked) of Information used by Firms in the Sample</td>
<td>164</td>
</tr>
<tr>
<td><strong>Chapter 6</strong></td>
<td></td>
</tr>
<tr>
<td>6.1 Satisfaction with Legislation Issues among Small Businesses in the Yorkshire and Humber Region</td>
<td>188</td>
</tr>
<tr>
<td>6.2 Major Environmental Regulations Affecting the Food-Sector</td>
<td>190</td>
</tr>
</tbody>
</table>
Firms Interviewed

Chapter 7

7.1 Drivers of Learning in Companies Interviewed

7.2 Sample of Environmental Improvements planned/discussed but not yet implemented

Chapter 8

8.1 Proactive and Reactive Environmental Change
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2.1 Processed Food and Drink Industry Supply Chain</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>3.1 Forces Influencing the Attitudes of SMEs</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>3.2 Single- and Double-Loop Learning</td>
<td>72</td>
</tr>
<tr>
<td>4</td>
<td>4.1 Steps in Grounded Theory Analysis</td>
<td>85</td>
</tr>
<tr>
<td>5</td>
<td>5.1 Schematic Conception of the 'Three Component' Model of Attitude</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td>5.2 Levels of the Human Cognitive Process</td>
<td>114</td>
</tr>
<tr>
<td>6</td>
<td>6.1 Summary of Criticisms leveled at Regulations</td>
<td>212</td>
</tr>
<tr>
<td>7</td>
<td>7.1 Schematic Flow of Learning in SMEs and Missing Pathways</td>
<td>273</td>
</tr>
<tr>
<td></td>
<td>derived from Interviews</td>
<td></td>
</tr>
</tbody>
</table>
ONE: INTRODUCTION

1.1 The food-sector, SMEs and the environment

The principal aim of this thesis is, very broadly, to provide an analysis of how individuals (and small groups of individuals) running food sector SMEs across the Yorkshire and Humber region, cater for environmental issues and their regulation, and how their understanding shapes company policy. In so doing, it accounts for how company management tackle environmental problems on a strategic and practical level, shedding light on the motivational and de-motivational factors at work. By understanding more of how firms learn and then act in relation to environmental information, the thesis will contribute to the growing pool of research on business and environment.

The following chapter looks at the food and drink sector in more detail; suffice to say, it is now one of the UK’s largest sectors of productivity, accounting for approximately 14% of manufacturing by turnover, and 915,000 jobs in the country’s workforce (Food & Drink Sector Skills Council, 2002). In 2001 its turnover exceeded £60 billion, with exports topping £8 billion (Food and Drink Federation, 2001). Geographically diverse, all parts of the UK now contribute to these figures, with particularly high concentrations of production and processing in Scotland, the North West, the East Midlands and Yorkshire and the Humber (SSC, 2002). Of the estimated 49,000 food-sector (and related) businesses, over 90% are classed as
small to medium sized enterprises (SMEs) employing 250 or fewer staff. SMEs have been described by the Government as the workhorses of the UK economy, and within the food-sector constitute the bulk of the production capacity. With massive growth during the 1990s, environmental groups have been calling for tighter checks on the environmental performance of food and drink producing firms.

From an environmental perspective, increases in the amount of food being produced and processed, together with the associated waste issues, generate a high cost (see Chapter 2 for a more thorough discussion). Food manufacture and processing are both energy and resource intensive activities, so much so that in the Yorkshire and Humber region alone, food-sector SMEs are thought to account for over 15% of industrial energy use (DTI, 2001). Water use and its disposal, packaging waste and raw materials usage are among the other primary environmental concerns within the food-sector. The important environmental impacts of the food and drink sector as categorised by the Environment Agency are listed below.

- Product-packaging wastage
- Water use
- Releases associated with energy use
- Emissions to air
- Effluent management
- Accident risk

The Institute of Mechanical Engineers (2000) estimates that as much as 80% of the food we now eat is processed in some way before it arrives in the home. As Fellows
(2000) notes, in addition to traditional processed food products (potatoes, dairy and vegetables, for example), newer products that are supplemented with vitamins, minerals and probiotic cultures ('functional' foods) are becoming more widely available, as are organic products. While there are still serious trust issues regarding 'interference' in the food chain - most evident in doubts expressed over genetically modified produce – the processing of foodstuffs is on the increase (FDF, 2000). Food manufacturers have not been slow in recognising the market potential of these kinds of shifts, and product innovation has been intense as the food processing sector has expanded to keep up with, and in some instances pre-empt, these changes.

These trends would seem to suggest a more prominent role for the processors of food within the food chain, and have triggered a progressive expansion in processing capacity. Much of this workload – including processing carried out for many of the major retailers - has been outsourced to smaller firms, creating a diverse and highly fragmented processing sector (FDF, 2000). The geographical spread varies from region to region and owes much to the agricultural specialisms of the particular area (see chapter 2, section 1), but in places already reliant on food production this expansion has increased intra-regional competition. Yorkshire and the Humber is one such region. The following chapter looks in more detail at the Yorkshire and the Humber food-sector, and at the characteristics of the region that have made the food and drink industry successful here.
With the food-processing sector playing such a large role in the region, there is a growing need to understand how food-sector managers are responding to the environmental and regulatory challenges such development has created. As chapter 3 discusses in more detail, although there has been a growth in literature on business and the environment – in particular, how small businesses meet the environmental challenge – there is a shortage of new research that challenges managers directly for their views and opinions on questions of environmental significance. This thesis acknowledges the need to move in this direction, and while raising questions of its own, frames a number of important issues that current literatures do not address with any clarity.

1.2: Research aims

This thesis aims to provide a more complete understanding of how individuals running food-sector SMEs deal with the environment and its regulation, and how their understandings shape company policy. Whilst seemingly benign, many of the sector's processes and activities have the potential to cause significant environmental damage, and understanding how the sector thinks and acts in response to environmental pressure is now becoming important. Through a series of interviews with the management of food-sector SMEs in Yorkshire and the Humber, the thesis challenges the individual's knowledge of environmental issues, asks how they learn about environmental initiatives and the ways this information is used, and how they respond practically to the challenges of regulation. A principal reason for
the limited uptake of environmental initiatives amongst many SMEs generally, may be found in the barriers – perceived and actual – standing between the individuals who control firms, and a more complete understanding of what it means to be an environmentally active company. These barriers can, roughly speaking, be classified as constituting those of knowledge, both accuracy and availability; those of learning, and of integrating the environment into the business setting; and lastly those of understanding – of legislation, regulation and the respective roles of regulator and regulated. By looking more closely at managers’ experiences, beliefs and actions with environmental issues, those barriers can be more clearly understood, and progress made towards integrating business and environmental goals. The primary aims of this thesis are thus:

1) To explore how environmental knowledge is sourced and used by SMEs, and whether that knowledge is transferred into positive outcomes in the workplace. To determine which members of staff are charged with knowing about the environment and to understand how trust and credibility come into play during the acquisition of knowledge.

2) To understand more completely the process of organisational learning in small firms. To uncover when such learning occurs, how it is integrated into the operations of the SME, and whether environmental issues can be understood within the same framework of organisational learning as other company issues.
3) To assess how well-developed firms’ knowledge of environmental regulations is, and whether they are a motivating or inhibiting factor for the take-up of environmental improvements in SMEs. Does the process of regulation run smoothly, and what lessons can be learned from the attitudes displayed towards environmental regulators?

Through listening to the voices of SMEs operating across the region, the analysis constructs a more complete picture of how environmental issues are understood and prioritised in situ. Each chapter brings out several key issues, and with the additional input of other organisations in the region, proposes alternative models and policies that may better reflect the needs of firms in the region. In addition to the quotes of interviewees, case studies are included in certain sections to make concepts more explicit.

After outlining the structure of the food sector across the region (Chapter 2), the thesis moves on to review key literature in all the relevant academic fields (Chapter 3). Knowledge, organizational learning, regulation and the more theoretical literatures surrounding ecological modernization are considered here. Chapter 4 provides a detailed account of the methodology used in the research, starting with a justification for the grounded theory approach, and then moving sequentially through all the stages of the research process from identifying the population to coding and analysis of data. Chapters 5 – 8 are the empirical sections of the thesis,
and explore, in the following order: knowledge, regulation, learning and environmental action. There is overlap in some of the sections dealing with learning and knowledge, and efforts have been made to highlight and justify these. Case studies and direct quotes are used throughout these chapters to support and develop the arguments central to the research. Chapter 9 brings these arguments together to form a set on conclusions, and in a number of instances, recommendations for future action. A full bibliography is provided in Chapter 10.
2.1: Food manufacture & processing: the national picture

With a turnover of £66.2 billion, the food and drink manufacturing industry is the single largest manufacturing sector in the UK economy – 14.2% of the country’s total manufacturing sector (FDF, 2003). Even across the rest of Europe, where the industry has an estimated production value of just over £200 billion, the UK contribution dwarfs that of Germany and France (Invest in the UK, 2003). It is difficult to give an accurate total of employee numbers, but estimates range from 500,000 (directly employed by food-sector firms) (FDF, 2003), to 915,000 (including ancillary food-chain activities) (Food & Drink Sector Skills Council, 2002). The lower estimate accounts for approximately 12% of the manufacturing workforce of the UK (FDF, 2003).

Food manufacture and processing are widespread across all of the UK, but there are several regions with significant concentrations of activity (Table 2.1). Across these regions many of Europe’s largest food production and processing firms have major operations, amongst them: Cadbury Schweppes, Associated British Foods, Tate and Lyle and Northern Foods. These areas have also seen investment by some of the world’s largest players: Unilever, PepsiCo, Nestle, Dannone and Van den Bergh amongst the most significant.
The bulk of manufacturing output is still created by much smaller firms, however, and estimates place this figure at around 90% of all food- and drink-related produce (Sector Skills Council, 2002). The sector has proved particularly fertile for the development and success of small firms, and a combination of Government incentives, cheap property and a local employment history tied into food production and processing, has increased the survival rate for food-sector SMEs significantly (DTI, 2000).

Food manufacture and processing have been estimated by the Technology Foresight Panel to add approximately £14 billion of value to the food supply chain annually (Institute of Mechanical Engineers, 2000). This figure gives some indication of the volumes of foodstuff now passing through this stage of the chain: the industry buys two-thirds of the UK’s total agricultural produce (FDF, 2003). In terms of food

<table>
<thead>
<tr>
<th>REGION</th>
<th>SPECIALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scotland</td>
<td>General food manufacture</td>
</tr>
<tr>
<td></td>
<td>Brewing</td>
</tr>
<tr>
<td>West Midlands</td>
<td>Dairy</td>
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<td></td>
<td>Bread, biscuits, cake</td>
</tr>
<tr>
<td></td>
<td>Chocolate and confectionery</td>
</tr>
<tr>
<td>East Midlands</td>
<td>Ethnic produce</td>
</tr>
<tr>
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<td>‘Local’ produce, pork products</td>
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<tr>
<td></td>
<td>Cheese making</td>
</tr>
<tr>
<td>Yorkshire and the Humber</td>
<td>Fish processing</td>
</tr>
<tr>
<td></td>
<td>Agriculture</td>
</tr>
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<td></td>
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</tr>
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</tbody>
</table>

*Table 2.1: Concentrations of Food-Sector across the UK (Invest in the UK, 2003)*
purchased, quantities consumed have changed little over recent years. In 1997 Household Final Consumption Expenditure was £53.18 billion, only 1% up on the previous year – in 1998 the figure was 1.1%, and in 1999 2% (ONS Consumer Trends, 2000). Where the real changes have occurred are in the types of food demanded and purchased by UK consumers, and the levels of processing incurred throughout the food chain.

Figure 2.1: Processed food and drink industry supply chain (FDF, 2002)

Domestic consumption of food in the UK is virtually a static market. In 2001, expenditure on food and drink came to nearly £132.7 billion, representing 21.4% of
total consumers' expenditure (Yorkshire Forward, 2002). While there are changes in what people prefer to eat and what they can afford at different life stages, total volumes produced and consumed have changed little (FDF, 2003). Between 1986 and 1996, for example, UK food and drink percentage contribution to manufacturing Gross Domestic Product (GDP) remained stable at between 12 and 13%, dropping to around 8% in 1999 (Yorkshire Forward, 2002). As Table 2.2 indicates, the processing sector is now more heavily involved in the final produce that is exported, or sold to the retail or foodservice sectors.

2.2: Food and drink in Yorkshire and the Humber

Manufacturing has always had a strong presence in the Yorkshire and Humber sub-region. Of those in paid employment, 31% of males and 12.3% of females were employed in the manufacturing sector as of September 2000, compared to 25% and 10.5% nationally (ONS, 2000). The important statistic within these growth areas, however, is the size of the companies succeeding. Research by local Training and Enterprise Councils has suggested that, in addition to the established production industries, the economic base of the region generally is benefiting from a rise in the number of smaller production firms. Food and drink enterprises contribute significantly to this manufacturing strength, and represent a valuable link in the agricultural supply chain from farm to plate (DEFRA, 2003).
Like many other regions, however, Yorkshire and the Humber has experienced economic problems, and is presently going through a period of adjustment from traditional industries (Environment Agency, 1998). Industrial restructuring in the national economy and shifting international competitiveness have caused significant decline in the region, with many of the industries that traditionally made it prosperous (shipbuilding, mining, steel manufacturing, etc.) succumbing to the changes that have affected much of Britain’s industrial landscape over the last few decades. The food and drink industry is the second largest sector within the region, and employs in excess of 200,000 people across its constituent sectors (Yorkshire Forward, 2003). Over recent years, food and drink manufacturing and processing have been crucial to the region’s revival. The region itself is now one of the UK’s principal food producing and processing locations, contributing the second highest concentration of employment outside of the South East (Yorkshire Forward, 2003).

The region is split into four geographical areas: North Yorkshire, West Yorkshire, South Yorkshire and The Humber. Each has its own specialisms within the food sector - these are shown in Tables 2.2 and 2.3. Such is the industry’s significance to regional performance, Yorkshire Forward (the Regional Development Agency) has classified food and drink - along with digital industries, advanced engineering and metals, chemicals and bioscience - one of five key industrial clusters. Economically, this approach is designed to make conditions easier for existing companies (in terms of R&D, infrastructure, information provision and innovation), and more attractive to food-sector firms locating in the region.
The rationale behind clustering is primarily economic. As Scottish Enterprise suggest, a cluster is a ‘...group of organisations in related industries that are linked together because they buy or sell from each other and/or use the same infrastructure, customers or skills base’ (Scottish Enterprise, 2001). Yorkshire Forward’s objectives in classifying food and drink a key cluster are thus to:

- Develop an infrastructure designed to meet industry needs
- Give greater access to specialised information as more research and development is attracted
- Provide increased availability of financial and legal services that are familiar with industrial sectors
- Ensure better access to employees and suppliers
- Increase motivation and innovation as competition is created
- Provide access to a network of similar businesses, research and academic links

In addition, Yorkshire Forward has been pushing hard for the establishment of a regional food body run by and for food and drink companies. Planning is now in an advanced stage, and by 2004 it is anticipated that the Regional Food Group (RFG) will be up and running. The RFG will act as an ‘umbrella’ organisation for other food groups across the region, and provide a number of opportunities for local businesses. In particular, it is hoped the group will: increase business
competitiveness, facilitate collaboration and develop marketing skills within the region’s manufacturing base (Yorkshire Forward, 2002a; 2003e).

The region has a number of niche sectors that are included within the food cluster. Ethnic foods, bakery, organics, pig farming, speciality foods, soft drinks, field vegetables and fish processing have been singled out by the RDA because of their scale, relative importance or potential for future growth. As yet there is little evidence of vertical integration between these niches, and growth is primarily horizontal. One of the reasons explaining this is that different parts of the food-sector are at varying stages of maturity. Bakeries and fish processing, for example, are mature, developed niche sectors, while ethnic foods and organics are still embryonic in terms of their growth and interaction with other niches. One of the jobs of the RDA – through the activities of the food and drink cluster and the RFG – is to encourage functional integration of niche sectors on different levels.

As well as providing commercial opportunities for the sector however, clustering and the development of leader bodies may be beneficial in other important business areas. The environmental impacts of the food and drink sector are now being recognised (see 2.3), and the development of strong lines of communication (together with vertical and horizontal cooperation within the sector) may facilitate the spread of environmental best practice among food producers and processors in the region. The following section describes in more detail the sub-sectoral breakdown within the region.
2.2.1 The sub-sectoral and sub-regional picture

There are stark contrasts between the quantity and quality of food manufactured across the region’s four sub-regions. Tables 2.2 and 2.3 summarize these, and give some indication of output, but the following four sections bring out a stronger sense of which kind of foodstuffs are manufactured where, and their significance to the region in terms of employment.

South Yorkshire

The food industry in South Yorkshire (SY) currently employs 37,000 people, just under 20% of the industry across Yorkshire and the Humber. Agriculture and food processing/manufacturing have reduced their employee workforce by 1000 and 5000 respectively; food wholesale has been virtually static; while the number of jobs in food retail has increased by 3000.

- *Farming enterprises* include hill farming and mixed lowland farming in the west, while the eastern side of the sub-region is largely arable with significant *potato growth*. There is a high incidence of mixed farming, and the importance of *vegetable growing* may have developed from the need to supply nearby urban centres.
• SY accounts for over 14% of regional employee jobs in food manufacturing and processing. Over one third of SY's food processing and manufacturing employment is in activities relating to baking, while rusk and biscuits account for a further 10%

• Even though levels have declined, SY has a strong presence in the production and processing of meat and poultry products.

• Rotherham has a strong presence in the processing and preserving of fruit and vegetables.

• Although quantification has been difficult to date, the production of ethnic food, and particularly chilled ethnic ready meals, is now thought to account for in excess of 1000 jobs in South Yorkshire.

• Food wholesaling is believed to account for 5000 jobs in SY. As such it encompasses 12% of the sub-region's food industry in relative terms.

• Food retailing accounts for well over 50% of employee jobs in the SY food industry

West Yorkshire

The food industry in West Yorkshire (WY) is larger than in any other of the sub-regions. It accounts for around 65,000 employees, around one third of the regional total. The industry has declined in scale since the 1980s, and just over 2000 jobs have been lost, although this is slower than losses in other sub-regions. Over the last 15-20 years the agricultural sector has been comparatively resilient; the food-
manufacturing sector has stabilized; and the food-wholesaling sector has grown modestly.

- Two sub-sectors – the growing of vegetables and agricultural service activities – account for over 75% of agricultural employment in the sub-region.
- The manufacture of bread is the largest manufacturing food sub-sector, employing over 3000 people (predominantly in Leeds and Wakefield).
- A further 2000 people are employed in the production of biscuits and rusks, and there seems to be a particular concentration of SMEs in the district of Kirklees.
- There is significant activity relating to primary meat processing. There is a concentration of activity in Wakefield linked to the production and preserving of meat, while the production of meat and poultry is focused in Bradford.
- WY has a specialism in the drinks industry. It accounts for over 50% of the regional employment associated with the manufacture of beer (mainly in the Leeds area).
- The region also claims over 90% of the employment linked to minerals and soft drinks.
- There is a high concentration of activity relating to the manufacture of chocolate and cocoa – in Wakefield and Calderdale there are over 1000 employees within the sub-sector
North Yorkshire

The food industry of North Yorkshire (NY) differs from the other sub-regions. In 1999 it accounted for around 43,000 employees, with agricultural activity accounting for one quarter of employees in employment – over a half of the regional total.

- *Agricultural output* is a much more important feature of the food industry in NY than in other sub-regions.
- The biggest agricultural sub-sector (in terms of employees) is the *growing of vegetables*.
- While NY can claim over 70% regional employment in *dairy farming* and *cattle/sheep/goat farming*, these activities are concentrated in Ryedale and Harrogate.
- The *production of meat and poultry meat products* is a significant activity accounting for over a quarter of the sub-region’s employment in food processing/manufacturing.
- *Dairies and cheese making* are strong in the sub-region, and offer some of NY’s principal marketing strengths (for example, Wensleydale Cheese).
- NY accounts for over 50% of the regional total in terms of the *manufacture of feeds for farm animals*. 
• In 2000 there were over 3000 employees in NY in the manufacture of chocolate and cocoa. The sector is dominated – in actual terms – in York. Nestle (formerly Rowntree) and Suchard (formerly Terry’s).

• NY accounts for over 80% of regional employment in the processing of tea and coffee, the vast majority of which to be found in the district of Harrogate.

• In 1999, NY accounted for close to 70% regional employment in the wholesale of live animals

Humberside

The food industry in Humberside employs close to 48,000 people, and as such is second only to West Yorkshire in terms of regional comparators. The Humberside food industry is dominated by employment in food processing/manufacturing, which accounts for over 20,000 jobs. The relative importance of the sub-sector has increased over the last two decades: while agricultural employment has declined by over 35% and food wholesaling by 20%, the decline in food manufacturing and processing has been marginal (approx 3%).

• Humberside has national significance in terms of activities relating to the manufacture of crude oils and fats, and the manufacture of refined oils and fats.
• Humberside accounts for close to half the regional employment in the growing of cereals and other crops – the majority being within the East Riding and North Lincolnshire.

• The farming of swine is also prominent within the sub-region.

• There is also significant employment in the production and preserving of meat and the production of meat and poultry products.

• The sub-regional strength in the manufacture of ice cream is also noteworthy. In 1999 there were over 1000 employees within this sub-sector in North Lincolnshire.

• Historically, the nature of the food industry in Humberside owes much to its maritime location and its port activity. Large firms may also have had an influence. Unilever – and its associated companies – is active in a number of product areas in which the sub-region has particular strengths. Northern Foods is one such example.

The fishing industry has always been a significant influence on the food-sector in Humberside. From its origins during the eighteenth century, trawling brought wealth and prosperity to Hull, Grimsby and many of the smaller towns on both shores of the Humber. By 1870 Hull had a fishing fleet of approximately 250 vessels, rising to 400 by 1878. In 1883 its fish trade was estimated to be worth in excess of £1 million, and employed more than 20,000 people (History of Hull, 2004). Fuelled by the growth of the railways, Yorkshire's east coast ports now had
a way of transporting their catches to the large urban areas of Leeds and Manchester.

<table>
<thead>
<tr>
<th></th>
<th>South Yorkshire</th>
<th>West Yorkshire</th>
<th>North Yorkshire</th>
<th>Humberside</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming and Fishing</td>
<td>Potatoes</td>
<td>Field Vegetables</td>
<td>Dairying Beef &amp; Sheep Pigs Poultry Potatoes</td>
<td>Fishing Glasshouse Salads Field Vegetables Pigs</td>
</tr>
<tr>
<td>Food Processing/Manufacture</td>
<td>Bakeries</td>
<td>Bakeries Meat Processing Brewing Soft Drinks</td>
<td>Pig Processing Regional Cheese Potato Processing Tea Confectionery</td>
<td>Fish Processing Oils &amp; Fats Ice cream</td>
</tr>
<tr>
<td>Food Wholesale</td>
<td>Retail Depots Wholesale markets</td>
<td>Retail Depots Wholesale Markets</td>
<td>Livestock</td>
<td>Fish Wholesale Vegetable Wholesale</td>
</tr>
<tr>
<td>Food Retail</td>
<td>Retail and Food Service</td>
<td>Retail and Food Service</td>
<td>Food Service</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2: Sub-sectoral breakdown of Yorkshire and the Humber (Yorkshire Forward, 2002)

Drastically reduced fish quotas imposed by the EU during the 1970s have seen the industry all but collapse, however, and there are now only a fraction of the trawlers and fishermen working out of the Humber ports. Where the landing of cod and its primary filleting were once major contributors to the region’s economy, it is now secondary fish processing that has become the provider of jobs, and the basis of many SME activities. It was this diversification that led to the gradual expansion of the food sector more generally on Humberside, and many of the newer food processing enterprises have developed on the back of early fishing activity in the region.
Table 2.3: Food-sector specialisms of Yorkshire and the Humber (Yorkshire Forward, 2002; 2003a)

<table>
<thead>
<tr>
<th>Food Specialisms</th>
<th>Output £m</th>
<th>employment (as % of sector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Yorkshire</td>
<td>Dairy, Meat, Poultry, Potatoes, Pigs, Cheese, Confectionery, Tea, Food service, Cocoa</td>
<td>1002</td>
</tr>
<tr>
<td>West Yorkshire</td>
<td>Veg processing, Retail, Breads, Vegetable growing.</td>
<td>750</td>
</tr>
<tr>
<td>South Yorkshire</td>
<td>Rusks &amp; Biscuits, Ethnic foods, meat &amp; poultry, food wholesaling</td>
<td>384</td>
</tr>
<tr>
<td>Humberside</td>
<td>Fish processing &amp; manufacture, crude &amp; refined oils, cereals, general crops, meat &amp; poultry</td>
<td>894</td>
</tr>
</tbody>
</table>

2.3: The environmental impacts of the food and drink sector

From an environmental perspective, the operation of the food and drink sector raises a number of performance and awareness related issues for producing/processing companies across the Yorkshire and Humber region. Because food manufacture has traditionally been seen as an environmentally benign activity by a majority, the potential for damage along the latter, technology-intensive stages of the food chain is rarely acknowledged. The industry has always been resource and energy
intensive (Environment Agency, 2001), but the growing trend towards convenience and ready-prepared food items during the last five years has exacerbated this problem (INCPEN, 2001). The industry has itself recognised a move towards convenience produce (microwavable foods, freeze-dried goods, pot snacks and ready meals), and away from the fresh food preparation in the home. Evidence for this can be seen in the growth of the ready meal market, which is now valued at over £1.22 billion in the UK marketplace alone (FDF, 2003). This trend shows no sign of slowing (FDF, 2002), and there are now a number of pre- and post-production environmental issues to address within the sector.

2.3.1: Packaging and waste

Although we do not buy appreciably more food than we did ten years ago, that which we do buy now contains proportionally more packaging (INCPEN, 2001). The food and drink industry is responsible for using over 50% of the total packaging output of the UK, and on average, packaging represents 13% of the sector's production costs (Environment Agency, 2001). Between 1995 and 2000, food companies increased the amount of packaging they used on their products by approximately 18% (FDF, 2002). This means that in an average household, the 1300kg (net) of food and drink purchased each year, creates a much higher waste load than prior to 1995.
Packaging materials used by the sector include: corrugated cartons, plastic bags, shrink-wrap, stretch-wrap, layer pads, pallets and slip sheets, drums and other containers and filler materials (polystyrene, foam paper, etc.) (Environment Agency, 2001). Although the Packaging Waste Regulations now control pre-consumer packaging issues more thoroughly, hygiene and cross-contamination make post-consumer food packaging waste difficult to regulate and minimise. Glass, high- and low-density polyethylene (HDPE, LDPE), polypropylene (PP) and polyethylene teraphalate (PET) are more easily separated from the waste stream, but other packaging, while technically recyclable, is often too contaminated to reuse. In addition, food producers are using ever more sophisticated, and often wasteful, packaging to promote their goods in the marketplace.

On average, a maximum of 4 million tonnes of packaging ends up in the household waste stream or is recycled each year (INCPEN, 2001). One of the primary sources of disused packaging in the home is from food and drink, but this figure is small in comparison to the actual amount of kitchen and garden waste that is generated each year. Approximately 12 million tonnes of food waste and assorted paper and garden materials are disposed of annually - much, due to the problems of separating wastes, ends up in landfill.

The food and drink industry is one of the highest contributors to landfill in the UK economy. A survey (DOE, 1995) estimates that in 1995 the sector sent in excess of 5.5 million tonnes of waste to landfill (only construction (11 million tonnes) and
retail distribution (9 million tonnes) sent more). Landfill wastes are generally classified under three headings: inert, bioreactive, and hazardous/special. The food and drink sector’s waste is primarily bioreactive, i.e., it undergoes biodegradation within the landfill environment (Williams, 1998), and includes processed food wastes, raw materials and other organic matter. There is a smaller amount of inert and hazardous waste, however, due to the chemical separation of certain compounds during the production/processing activity, the contents of certain packaging components, and the increasing use of chemicals during cleaning and washing. The sector has made progress in recovering food materials for both human and animal consumption, and in extracting valuable compounds from material bound for landfill (i.e. pigments, enzymes, nutritional components, etc.), but waste continues to be a problem as the sector grows in size and complexity.

2.3.2: Energy use

Energy use during production and processing is a less visible, yet equally demanding environmental problem for the sector. Research conducted by AEA Technology on behalf of Yorkshire Forward estimates that the total (delivered) energy to the Yorkshire and Humber food sector is approximately 26 PJ (Peta Joules) per year, and the corresponding carbon emissions are in the region of 0.61 metric tonnes. This energy use represents 16.4% of the national total used in food
and drink manufacture (AEA Technology, 2003). Within the region’s individual sub-sectors, particular activities are noteworthy for their high-energy demand. Table 2.4 details the most energy intensive components of the region’s specialisms.

<table>
<thead>
<tr>
<th>Sub-sector</th>
<th>Main Energy Consuming Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bakeries</td>
<td>Baking (use of hot air circulatory or infrared irradiation ovens), Mixing, Proving, Refrigeration</td>
</tr>
<tr>
<td>Meat &amp; Poultry (Including abattoirs)</td>
<td>Chilling, Freezing (and associated controlled temperatures in production and storage areas)</td>
</tr>
<tr>
<td>Confectionery</td>
<td>Bean roasting, Refining, Conching &amp; mixing, Milk evaporation, Refrigeration, Syrup boiling, Drying, Mixing and Baking</td>
</tr>
<tr>
<td>Dairies</td>
<td>Pasteurisation, Chilling, Drying</td>
</tr>
<tr>
<td>Breweries</td>
<td>Wort boiling, Pasteurisation, Vessel sterilisation</td>
</tr>
<tr>
<td>Soft Drinks</td>
<td>Blending, Filling (especially aseptic filling), Blow moulding and glass washing</td>
</tr>
<tr>
<td>Fruit &amp; Vegetables</td>
<td>Washing, cleaning &amp; preparation, Blanching, Freezing, Canning</td>
</tr>
<tr>
<td>Oils &amp; Fats</td>
<td>Separation, Fractionation</td>
</tr>
</tbody>
</table>

Table 2.4: Main energy demands of food and drink sector (AEA Technology, 2003; Environment Agency, 2001)
There are clearly environmental health and hygiene issues surrounding many of these processes (for example, the need to use sufficient temperatures to kill microorganisms), and the need to preserve product quality through the application of appropriate energy. However, the Environment Agency has still expressed concerns about the total energy use of the sector, and has issued detailed technical guidance on energy saving best practice (Environment Agency, 2001).

2.3.3: Water use and wastewater disposal

The food and drink sector has always used a large amount of water in its produce, conveyance and cleaning activities. As with energy use, the sector will always be a relatively high user because of the hygiene issues surrounding food production, and the need to wash down all equipment regularly. Large food processing installations may use upwards of several hundred cubic metres of water a day, either from mains or borehole supply (Environment Agency, 2001). The major uses of water within the sector are:

- Washing of raw materials
- Water used for transporting (flaming) raw materials or waste
- Process water
- Cleaning of plant, process lines, equipment and process areas
- Washing of product containers
- Boiler make up
THREE: REVIEW OF LITERATURE

3.1 Introduction

This chapter aims to provide a detailed review of the literatures drawn and built upon throughout this thesis. Because sections of this research draw on several disparate academic sub disciplines, however (social and cognitive psychology, organisational learning, regulation), it was deemed beneficial to discuss, in addition, some theoretical material throughout the empirical chapters. To this end, the following chapter assesses the contribution of business and environment literature in a general sense, and situates the research within current thinking on environmental issues, business development and ecological modernisation. Small business literature is also discussed. The last sections look at organisational learning, and the possibilities for understanding SME behaviour offered by psychological research.

3.1.1 Business and the environment: initial thoughts:

As Tilley and Fuller (2000) suggest, business and environmental issues are usually considered along lines similar to those illustrated in Figure 3.1, where both driving and resistant forces act upon the firm. The attitudes and subsequent behaviour of SMEs towards environmental initiatives is therefore subject to the intensity of these contrasting forces, which act in a causal manner.
Although this model presents a good way of conceptualising the broad issues, its simplicity does little to encourage more probing questions regarding the role of learning and communication within the firm. Of the now well-established literature on business and the environment (Elkington and Burke, 1987; Elkington et al., 1991; Simerly, 1994; Friedman et al., 2000), one of the immediately obvious features to emerge is that, with few exceptions, there is little in the way of deeper analysis in the field – analysis that looks more closely at the mechanisms driving acceptance or rejection of environmental improvement. Although it is easy to generalise (as much green business literature frequently covers all sizes of business and scales of environmental impact), a lot of recent work seems content to use the economic argument to support environmental change, and the increased competitiveness such improvement can create. The ‘efficiency’ arguments behind environmental management (Welford, 1993; Elkington, 1994; Porter & van der Linde, 1995a,b), the ‘win-win’ scenarios of corporate greening (Shrivastava, 1996;
Pava and Krausz, 1996; Freeman et al., 2000) and the possibilities for greening along the supply chain (Hill, 1997) now provide the core of much business-environment literature. Such work makes a valuable contribution in establishing general patterns in the way firms may view the environmental challenge and how 'the firm' may or may not respond to such pressures, but it is frequently idealistic and somewhat utopian in nature, reducing complex arguments to the much simpler question of which firms want to save money and which do not? The focus of study is almost completely at the level of the organisation (the firm, the Government, the regulator, etc.), and many authors ignore the fact that the perceptions and beliefs of individual decision-making managers lie at the root of all environmental improvement, and pose some of the more pressing and stimulating questions.

Instead of neglecting these key actors, understanding what motivates and demotivates staff should be made more central to the business-environment research agenda. In addition, many commentaries have grown increasingly inward looking and uncritical of their own proclivity towards the business-environment agenda. As well as being somewhat repetitive, such literature does little to highlight the practical problems raised by such improvements (for exceptions see Palmer et al., 1995; Walley & Whitehead, 1994). Much of the recent literature ignores the fundamental problems business has with introducing green technology or thinking, and is instead content to select examples and case studies of success (for example, North, 1992; Grey et al., 1993).
Equally perplexing is the implicit assumption that businesses always want to be greener. Newton and Hart (1997) are critical of what they refer to as the evangelical language used in much writing, and the assumption that 'environmental excellence' and 'corporate environmental strategy' are somehow taken up by business management as fundamental and unquestioned goals. This is highlighted by many authors' assumption that eco-change can best be achieved by applying technical or managerial logic to an already established desire to improve environmental performance. Applying technology or new management structures is often put forward as the solution to environmental problems without questioning the values placed on such problems by management. Davis (1991), for example, argues that organisational change towards environmentalism will only come about through the right vision and value systems (quoted in Newton and Hart, 1997), while Elkington and Burke (1987: 13-14) suggest that, '...while environmental excellence may not be a sufficient condition for business success, it is certainly a necessary one.'

Why such policies will work, or indeed why they will be trusted by business is rarely questioned, however. Speaking of audits, for example, Grey and Symon (1993) note that the environmental audit is often very poorly defined, and as such has limited potential as a mechanism for greening an organisation. Environmental management, usually employed as the catch-all phrase for environmental audits, reports, policies, etc., is placed at the forefront of this technicist philosophy (Welford, 1995; 1996; O’Laoire & Welford, 1996; Starkey, 2000), and represents the 'accepted' and 'assumed' corrective mechanism for bringing organisations into
It is not that there is anything fundamentally wrong with advocating environmental management: systemic solutions have proved successful in some cases, and addressing environmental problems through management development can help embed change more permanently within the firm. Efficient environmental management should not be taken as 'ground zero' for business and the environment however, and as Karagozoglu & Lindell (2000) suggest, technology and environmental management can only aid financial performance contingent upon the presence of favourable external and internal conditions.

The readiness and willingness of the firm to accept environmental change represents the very substance of these conditions, and together pose a number of unanswered questions this research aims to address. They are also the two main operational requirements that have received least attention in the academic literature – at least in connection with environmental improvement. Stephen Fineman's research on emotion in the workplace (1996; 2000), and more specifically in relation to the effects of environmental regulation on management (1996; 1997; 1998; 1999), are an important progression in this area. Fineman looks at environmental regulation, and the business-environment issue more generally, as being driven by a complex set of emotional responses. These responses can be understood only by framing what goes on at the organisational level within individual psychologies of perception, cognition and risk.
The thesis deals specifically with the smaller firm, and the drivers and barriers to improved environmental performance discussed throughout, are meaningful only in context of how SMEs operate, and their particular characteristics. The following section looks at some of the more recent small firm literature, and assesses its relevance to this work. While much of the literature focuses on the adaptability and flexibility of SMEs, some management and logistics approaches have now begun to question this utopian vision of the smaller firm. There is a growing recognition of some of the problems unique to smaller companies. Just as size can be an advantage in terms of operating costs, SMEs often suffer from limited access to resources – financial and otherwise – purely because of the limitations connected to their size. As Hillary (2000: 11) explains:

"...These crucial businesses are [also] plagued by problems: they are more likely to fail or experience stunted growth than large firms; they suffer more from financial problems such as late payment of bills and access to loan finance; they can find it difficult to adapt to changing markets; and they lack the human and financial resources to tackle new pressures such as environmental regulation and stakeholders' concern about their environmental impacts."

3.2 SMEs' place in the economy

Although many of the idealistic assumptions about the flexibility and adaptability of the modern SME have now been brought into question (for example, Kinni, 1995; Samaha, 1996), small manufacturing firms have still enjoyed remarkable success in the UK economy. At the beginning of 2000 the total number of UK private-sector enterprises and public corporations was 3.723 million, and provided 22.13 million
of employment (SBS, 2003). SMEs accounted for 99.8% of all UK enterprises and 55.1% of all private sector employment (Table 3.1).

<table>
<thead>
<tr>
<th>Size</th>
<th>Employees</th>
<th>Number Enterprises</th>
<th>%</th>
<th>Employment ('000)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro</td>
<td>1-4</td>
<td>738,685</td>
<td>65.7</td>
<td>2,214</td>
<td>24.1%</td>
</tr>
<tr>
<td></td>
<td>5-9</td>
<td>206,090</td>
<td>18.3</td>
<td>1,483</td>
<td>16.1%</td>
</tr>
<tr>
<td>Small</td>
<td>10-19</td>
<td>108,075</td>
<td>9.6</td>
<td>1,515</td>
<td>16.5%</td>
</tr>
<tr>
<td></td>
<td>20-49</td>
<td>46,155</td>
<td>4.1</td>
<td>1,441</td>
<td>15.7%</td>
</tr>
<tr>
<td>Medium-sized</td>
<td>50-99</td>
<td>15,700</td>
<td>1.4</td>
<td>1,095</td>
<td>11.9%</td>
</tr>
<tr>
<td></td>
<td>100-249</td>
<td>9,385</td>
<td>0.8</td>
<td>1,441</td>
<td>15.7%</td>
</tr>
<tr>
<td>ALL</td>
<td>Total</td>
<td>1,224,090</td>
<td>100</td>
<td>9,190</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 3.1: Numbers of enterprises and employment by SME size (SBS, 2000)

The SME sector is arguably the most important to the national economy in terms of its contribution to overall output. The figures quoted vary, but it is generally agreed that well over ninety percent of all enterprises in the UK fall within the European Commission’s definition of an SME – that is, firms with 250 or fewer employees. Prior to the 1970s, however, the small business sector was considered by many to be on a permanent decline, and no longer relevant to modern industrial societies (Chandler, 1962, 1977; Ackroyd and Lawrenson, 1996). Such firms, ‘...were considered to be inherently uncompetitive because they did not enjoy the economies of scale of larger firms’ (Tracey et al., 2002). Now, more than half the UK workforce (fifty-eight percent) is currently employed by SMEs (Smith et al., 2000), and in 1996, of the 3.724 million firms in the UK, 3.693 million employed less than 50 people (Tilley, 2000). The trend is similar across Europe. In most OECD countries, SMEs generate a substantial share of GDP and account for over half of all
private-sector employment (OECD, 2000). It is perhaps not surprising given these figures that during recent years small companies have become the focus of growing government interest – both in terms of initiating new business start-up and optimising the performance of existing enterprises.

The Department of Trade and Industry, and in a pan-European context the EC itself, has committed considerable resources to stimulating the growth of SMEs in the UK economy and beyond. There are a number of reasons for this. As Ruth Hillary (2000) points out, SMEs provide and create an enormous number of jobs, are a source of innovation and entrepreneurial spirit, and act as a seedbed for the larger businesses of the future. Rothwell (1986) suggests that SMEs have always played an important role in new product development and process innovation. Perhaps more importantly to the UK Government, through their size, turnover and operational diversity, SMEs encourage greater competition and help stimulate a healthy market economy.

It is only recently that literature has started to emerge more sceptical of SME’s role within the economy, and which, gradually, has started to pick away at the normative assumptions regarding SMEs’ success alongside larger organisations. Ghobadian and Gallear’s (1996) assertion that SMEs are ‘the lifeblood of modern economies’ (quoted in McAdam et al., 2000), for example, is now recognised to be true only in context to how SMEs function alongside other, larger organisations. Competitiveness, McAdam et al. argue, must include not only success at the macro
scale, but also as suppliers of goods and services to larger companies themselves. Kinni (1995) suggests that in developing such competitiveness, SMEs must now look beyond the traditional yardsticks of progress, such as Continuous Improvement (CI) or Kaizen, and, as Gunasekaran et al. (1996) suggest, readdress more basic aspects of their operation such as people, culture and process.

Wiele and Brown (1998) are more simplistic in their assessment of the situation when they state that SMEs must develop a more innovative culture within their internal structure. Later chapters of this thesis will support this general criticism, and suggest that with environmental improvements, a more innovative culture is precisely what is needed to get SMEs through the inertia that has caused many early attempts at improvement to stall. Lefebvre and Lefebvre (1993) make the point that SMEs with a more developed innovative culture hold a stronger competitive position, in terms of costs, quality and diversity. The Government has long recognized the importance of the smaller firm, and the benefits such diversity creates for the national and regional picture. But while these general strengths are well documented, management scientists claim the outlook of SME managers is still too short-term.

Management development in SMEs has been on the Government’s agenda since the late 1980s, when the Handy and Constable McCormack reports (1987) indicated that UK managers from a range of different firm sizes lagged behind the international competition in terms of relevant qualifications (Smith and Whittaker,
The result has been the introduction of a number of ‘competence based’ management training programmes, and alongside traditional academic programmes such as the MBA and DMS, newly accredited schemes such as the Management Charter Institute (MCI) and the National Vocational Qualification (NVQ) have been introduced. Storey et al. (1997), following up the results of an Institute of Management (IM) survey in 1995, concluded that although there had been rapid growth in management development since 1987, firms with fewer than 100 employees were still not becoming involved in such initiatives. More recent organisational learning literature supports this observation, and suggests that it is the smaller firms who struggle to develop the higher-level learning systems that focus on individual development (Chaston et al., 2001).

Cannon and Taylor (1994), the authors who conducted the more recent survey for the IM, concluded their report with a number of ‘challenges’ for SMEs.¹

1) Organisations need to understand that investment in management development is a direct contribution to competitiveness.

2) Senior management must commit to lifelong learning

3) Senior management needs to provide commitment and leadership

4) Standards and qualifications must be transferable and recognizable

5) Providers must respond to the specific development needs of users

¹ The survey covered both large and small companies, but as the results of the work concluded that large firms were more active in development issues, the challenges are pointed towards SMEs.
6) A more coherent infrastructure for management development needs to be created

(Quoted in Smith and Whittaker, 1998: 178)

The respondents in this survey did, however, recognise that in order to meet these challenges, providers of training and development needed to be more responsive to the needs of their clients. As Smith (1993) notes, however, with SMEs, this is easier said than done, and the sheer diversity of firms needing help make the coordination of training and development difficult. Looking at the success and failure rates of SMEs, Wilson (1995) suggests a direct relationship between the early closure of business start-ups and the extent to which they take advantage of advice and training (quoted in Smith and Whittaker, 1998). It would, of course, be difficult to measure with any accuracy the extent to which firms included in this research benefited from outside training help, or indeed whether such training equipped then with more suitable tools to tackle environmental challenges. As the following chapters suggest, none of the firms interviewed placed any real priority on management training, and few considered the development of their staff as core in any concerted way.

While Storey (1994) and Westhead and Storey (1996) argue that the link between management training in SMEs and enhanced performance is not well established, Keeble (1996) suggests that management skills, increasing complexity in the business environment and the growth of market demands now require firms to place
line, and assume the desire to tackle environmental issues lies along proven technological and managerial lines. Although it is arguable that this is always the case with SMEs, whose tendencies have been to avoid such issues and close the firm off to new ideas, this kind of approach can be understood within the principles of ecological modernisation.

3.3 Ecological modernisation

Although much of the green literature makes no explicit reference to it, many of the arguments put forward can be understood within the broader discourse of ecological modernisation, and the use of technology to combat ecological crises. Ecological modernisation is now a theory distinct within the environment-society debate, and although subject to conflicting interpretations, occupies a prominent position within all major business-environment discourse. The literature on ecological modernisation is extensive (Spaargaren and Mol, 1992; Mol and Spaargaren, 1993; Hajer, 1995; Christoff, 1996; Giddens, 1998), and as this selection of contributors suggests, the theory is deeply rooted in environmental sociology and politics, as well as questions of environmental management.

The history of ecological modernisation is to a great extent rooted in the elevation of the environment to the sociological agenda during the 1980s (Mol, 1996). Ulrich Beck (1986) and Anthony Giddens (1989) played a significant part in redefining ecological crises as more than simple environmental problems, and part of more
serious social upheavals marking the transition to late modernity. As Mol (1996: 303) suggests, ‘...the emergence of the environment in social theory is particularly related to the notion of reflexive modernisation.’ Reflexive modernity, Giddens (1991; 1994) argues, marks the 'end' of modernity, and the ushering in of a new era of reflection, in which social practices are interpreted and reinterpreted in light of new information about those very practices (Mol, 1996: 304). Beck (1992; 1994) takes these ideas a stage further, and, using the environment as the thesis of his argument, likens the transition from modernisation to reflexive modernisation to the shift from normal society to a 'risk society'. In his ideas, the risk society becomes everything society previously was not: anxious, reflective and obsessed with the logic of risk distribution.

At its simplest, ecological modernisation is about technological innovation, and the recognition that continued industrial development offers the best option for escaping from the ecological crises of the developed world (Fisher and Freudenburg, 2001). As Arthur Mol (1996: 302) suggests, however, it is also, "a valuable starting point for analysing the contemporary reflexive reorganisation and transformation of production along ecological criteria." Unlike the deindustrialisation and counter-productivity arguments put forward in neo-Marxist thought, ecological modernisation proposes that environmental improvement is both economically and politically viable. The approach 'reframes the relationship between economics and the environment to overcome the zero-sum antagonism of the previous era' (Cohen, 1998: 149). This is in sharp contrast to earlier thought that equated environmental
protection with a 'brake on growth' (Berger et al., 2000), and the need for a reduction in both the production and consumption of goods.

Far from suggesting society continue as normal, however, ecological modernisation requires that change be made in the institutional fabric of society, leading to the formation of new political allegiances and partnerships. Changes in 'the environmental state' must occur alongside increasing involvement of NGOs, businesses and other economic actors (Fisher and Freudenburg, 2001), and anticipatory planning practices (the Precautionary Principle) are a fundamental requirement. As well as fulfilling a descriptive role, therefore, ecological modernisation is also prescriptive in that it lays down a framework within which society may be better able to mitigate environmental problems (Mol, 1997).

Contemporary literature on environmental management reflects many of these issues, and the emphasis now placed on pollution prevention technology as opposed to containment or, 'end of pipe' measures, is testament to the role technology seems set to play this century. The EU's IPPC directive places a great deal of trust in the ability of prevention technologies to meet the environmental challenges of larger organisations. Huber, J. (1984; 1985), considered by some to be the founding father of ecological modernisation, believes that environmental problems can be addressed 'through the transformation of production via the development and application of more sophisticated technologies' (quoted in Murphy, 2000: 2). Huber refers to this technology-intensive innovation as 'superindustrialisation', and although he
believes Government intervention necessary to a point, industry itself is key to
driving the innovation required for the development of such technologies.

More recent work has given a different slant to ecological modernisation, however,
and has shifted the emphasis away from technology and more towards economic
policy and cultural politics. Martin Jänicke and Udo Simmonis’s work has looked
at the possibility of macro-economic structural changes acting as a catalyst for
environmental reform (Janicke, 1985; Janicke et al., 1989; Simmonis, 1989). Their
ideas follow the logic that, as structural changes take place in advanced industrial
societies, these will generate consequential – even unintentional - environmental
improvements in high-risk areas. As Murphy (2000: 2) suggests, these authors
emphasise that, ‘a central element of ecological modernisation is the restructuring of
national economies involving both their technological and sectoral composition.’
Gouldson and Murphy (1997: 187), for example, suggest that (ecological
modernisation) ‘...looks for industrial sectors which combine higher levels of
economic development with lower levels of environmental impact.’ In so doing
they propose a gradual phasing out of what Murphy (2000) refers to as ecologically
‘maladjusted’ technical systems, or systems that cannot be reconciled with
environmental goals.

Hajer (1995; 1996), however, looks at ecological modernisation through the lens of
cultural politics, and for him, the analysis of environmental issues and problems is
achieved most practically through looking at the social construction of the
environment in modern discourse. In this view, political issues and grievances are hidden behind the rhetoric of environmental claims and counter-claims, rights and wrongs, etc. Hajer (1995) looks at such discourse as a series of ‘story-lines’, and develops, ‘...a specific view of environmental politics which he views as constituted by discourse’ (quoted in Murphy, 2000: 4). Although, as Dryzek (1995) warns, in focusing on the social constructionist view of the environment, Hajer sometimes fails to recognise that the environment is more than the product of discourse, and exists as an independent entity.

Although ecological modernisation is not a ‘way out’ of the problems caused by industrial production itself, it proposes ways in which society, through its growing recognition of environmental risk, can better plan and restructure production around more sustainable goals. Perhaps most important of all, as Murphy (2000: 5) suggests, “it provides ways of thinking about how to move beyond the conflictual relationship that is often assumed to exist between the economy and the environment.” While manufacturing companies may have difficulty meeting pollution prevention goals through technological means alone (de Bruijn and Hofman, 2000), ecological modernisation suggests that solutions may be found in wider structural reorganisation and changed ways of looking at the environmental challenge. Wolters (2000), for example, suggests that smaller companies are capable of adapting themselves to new societal demands by greater interaction with institutions, such as knowledge infrastructures, social arrangements and regional networks. In this way, environmental improvements are not simply achieved by the
application of more sophisticated technologies, but are enabled by a distribution of expertise and firms' growing awareness of societal demands and expectations. Put simply, through increased exposure to environmental knowledge and best practice, SMEs come to see environmental reform as being intrinsic to normal business activities rather than supplementary to them.

3.4 Organisational knowledge

The question of environmental improvement in business, and indeed the wider significance of ecological modernisation, is underwritten by the belief that organisations either possess or are capable of acquiring the knowledge to make such concepts meaningful. Much of this thesis is concerned with the issue of knowledge: its perceived relevance, its capacity to change, and later its acquisition and sourcing. A great deal has been written over recent years on the issue of organisational knowledge, and how increasingly the organisations making competitive gains in the market place are those with the capacity to access, use, and even create knowledge, as opposed to those merely appropriating material assets such as finance and personnel. Many of the seminal academic texts over the last decade (Drucker, 1993; Toffler, 1994; Quinn, 1995) are in agreement that the future will be dominated by those firms, and organisations more generally, endowed with the capacity to use knowledge. Following the thesis of this argument, the traditional maxim 'knowledge is power' would seem an especially appropriate indication as to which firms will be best placed to capitalise and prosper in what Nonaka (1995) and others
have referred to as the knowledge society, or knowledge age. But it is also important at this stage of writing to more clearly define knowledge in the context of what this research hopes to achieve. The following sections propose a definition of knowledge that fits in most obviously with the organisational knowledge section, but also with the organisational learning, environmental action and environmental regulation chapters of the thesis.

3.4.1 Knowledge and knowing

When people or organisations speak of knowledge and knowing, what exactly do they mean? Is a knowledge society one in which members simply know more, or does it instead refer to the ways individuals acquire and use that knowledge in the process of carrying out routine activity? Similarly, does a knowledge society refer implicitly to certain kinds of knowledge? These are important points because, to understand what companies know about environmental issues it is important to understand something of what knowledge is, and how that knowledge, however defined, is expected to activate key personnel into thinking more about, and doing more to improve environmental performance.

Conceptually, knowledge is both complex and highly abstract, and to offer any philosophical interpretation as to the nature of knowledge and its boundaries would be well beyond the scope of this thesis, and not particularly useful. Traditionally, epistemology - the branch of philosophy concerned with knowledge - set a number
of different criteria for defining its subject: the act or state of knowing; perception of fact, truth, or duty; familiar cognizance; and cognition. Epistemology also deals with a number of related issues, however: sense perception; the relation between the knower and the known object; and degrees of certainty for each kind of knowledge (Artzia, 2002). In the context of what managers actually know about the environment, and what they know of their own environmental impacts, it may not be particularly useful to consider knowledge as being constrained by any of these established parameters, however.

Newer approaches to studying knowledge as both 'hard' and 'soft' information (Blacker, 1993; Cook and Yanow, 1993) allow knowledge to be defined as the expertise and ability created or 'passed on' by employee interaction and learning. These interpretations suggest that knowledge can be developed 'in situ', and may be culturally, historically or even economically contingent. As Antonelli (1999) has speculated, the emergence of the knowledge-based economy has prompted considerable research into knowledge in the context of economic activity, '...particularly concerning its acquisition through learning and innovation' (Roberts, 2000, p. 430). For the OECD, knowledge is seen as being the crucial input to competitive economic activity and the generation of economic growth, and as such suggests strong links between knowledge and development. But even seen as an input, it is useful to consider the ways in which knowledge has changed in definition, from its most rigid application as pure information, to the more flexible concepts of idea, perception and intuition.
3.4.2 New concepts of knowledge

Knowledge is usually conceived as consisting of factual information, facilitating the performance of set tasks or goals. The rationalist view of knowledge (specifically that postulated by the early philosophers Descartes, Spinoza and Leibniz) held that there were certain innate and detached qualities to knowledge. The knowledge required to operate machinery, process invoices and pay wages, for example, is seen in this light as little more than a sequence of learned steps, that over a course of time have been proven to work effectively – or perhaps even ineffectively. The knowledge to perform these tasks exists independently of the knowers. These steps and practices together form the ‘knowledge’ that “organisational participants ‘have’ in order to perform their jobs” (Sparrow, 1998: p.24).

Increasingly – in studies of organisational learning at least – knowledge is starting to be recognised as having a much broader, even looser, designation. A much wider range of mental material informs the decisions made by all organisational actors, and recent work (for example, Huseman and Goodman, 1999; Nonaka, 1996) has sought to rethink the very basis of knowledge, and consider it less as ‘learned information’, and more bound into the complexities of human interaction in social and cultural contexts. Such knowledge is often referred to as tacit, and includes the vast range of perceptions, opinions, ideas, and other unquantifiable processes that
people use to inform their decision-making. In the 1998 Competitiveness White Paper, the DTI recognise that:

“To understand the role of knowledge and information in the wider economy, it is important to distinguish two types of knowledge: "codified" and "tacit". Knowledge is codifiable if it can be written down and transferred easily to others. Tacit knowledge is often slow to acquire and much more difficult to transfer.”

(DTI, 1998: 89)

Such distinctions are also identifiable in the evolution of philosophical thought. While Cartesian logic held that knowledge was independent from those who sought to know it, John Locke’s empiricism suggested that all knowledge was rooted in human experience and interaction, and there was no such detachment. As Huseman and Goodman (1999) have pointed out, this kind of latent knowledge, while potentially useful, is intangible and frequently inexpressible. People know things without actually knowing they know, and have the ability to carry out tasks drawing on a pool of knowledge that is culturally and historically specific.

Ikujiro Nonaka’s (1996) work on the ‘knowledge-creating company’ has been central in relocating people’s ideas concerning where knowledge comes from and how it is used in the organisational setting. Drawing upon examples from Japanese industry, Nonaka shows how some highly progressive companies have been able to operationalise the tacit knowledges of their employees, and fuel innovation that has
totally repositioned the company in the marketplace. Knowledge becomes less measured by what has been learned, but the productive advances the company has made as a consequence of that learning, which may involve the merging of employees’ own ideas and solutions with the hard knowledge learned from technical manuals and training.

This kind of knowledge-creation is not as widespread in the UK, particularly amongst smaller companies, where structural and organisational constraints – functional divisions, the congestion of responsibilities, tighter profit margins – prevent the kind of social development of knowledge to which Nonaka refers. Predominantly, the kind of knowledges required by small firms to help them make environmental improvements are twofold: technical information - hard knowledge from either direct contact with stakeholders or published technical material; and the desire to actually do more - softer knowledge from a number of different sources. The former is either learned or it is not. If the company makes the decision to invest in these kinds of improvements, it has to do its research and learn what steps need to be taken to achieve these goals. Provided the company can be sure the steps are cost effective, there should be no reason why this knowledge cannot be transferred into positive environmental benefits. The latter is more troublesome, because it requires the firm to believe that environmental improvements are morally justified, that their company has any obligation to protect the environment, and that what they do will have significant effect.
3.4.3 The knowledge economy

Over recent years the UK Government has been keen to encourage the development of a knowledge-driven economy, and promote the recognition of knowledge as a powerful competitive tool (DTI, 1998). The DTI has set up a number of initiatives aimed specifically at mobilizing businesses to become more proactive in their uptake and use of knowledge (the Competitiveness White Paper, 1998), and recent drives suggest that the Internet is central to these plans. As part of the nationwide UK Online program, UK Online for Business is a countrywide partnership that brings together Government, industry, the voluntary sector, trade unions and consumer groups, as a 'one-stop' shop for information. The use of ICTs is now seen as central to the development and maintenance of business networks, and of knowledge dissemination more generally.

Government departments especially are starting to develop much more sophisticated and extensive web sites for the communication of information to businesses. DEFRA, the DTI and the newly established Food Standards Agency have overhauled their web sites to include much more detailed information to their 'customers'. The Environment Agency has itself recognised the need for information provision through electronic means, and to better communicate regulatory data to small business, has developed its NetRegs scheme. NetRegs (www.netregs.gov.uk) has been developed by the Agency, SEPA, and the Environment and Heritage Service (Northern Ireland) in conjunction with the DTI's
Small Business Service. It is funded by the Capital Modernisation Fund and aims to provide general management advice for SMEs on the environmental legislation that affects them (Environment Agency, 2003). By 2004 it is hoped that NetRegs will cover 100 industrial sectors (EA, 2002).

The Small Business Service (SBS), whilst still in its infancy, is aiming to make small businesses more ‘information aware’ by providing a link to the activities of central Government, and a guide to the other kinds of information available to SMEs. At the regional level this drive is equally noticeable. Poor cooperation and communication between bodies capable of delivering reliable environmental information to Yorkshire and the Humber’s SMEs (local authorities, the Environment Agency, Chamber of Commerce, trade associations, the EEBPP) is being partly blamed for the low uptake of environmental initiatives in the region. Business in the Community’s Business in the Environment (BITE) program is now looking to extend the range and scope of support offered to SMEs by developing a Regional Business Environmental Partnership. Such a partnership, if formed, would seek to utilise the strengths and credibility of each member to provide a comprehensive regional pool of environmental knowledge for companies.

Knowledge can therefore be defined in a number of ways within this thesis. At its simplest, it is information learned from any external source that can be utilised by the firm in pursuit of environmental improvement. As the thesis will argue, however, this rather narrow conceptual base may be one of the problems that
distinguish, and often relegate environmental issues within the firm. The accretion of environmental knowledge in any organisation needs to be recognised as a more socially situated process, where the tacit and often overlooked expertise of staff members mesh with more formal, technical information to provide hybrid solutions to environmental problems. The building of knowledge within the firm by any of these means can be thought of as the product of learning. Moving from a knowledge-less to a knowledge-rich state is the ultimate goal for the firm – however knowledge is defined - but as the following section explores, in terms of regulation and the knowledge required to deal with regulation, possessing sufficient knowledge is not the only criteria required for the SME.

3.5 Knowledge and regulation

The need for regulation to protect the environment gets widespread but grudging acceptance: widespread because everyone wants a livable planet, grudging because of the lingering belief that environmental regulations erode competitiveness. The prevailing view is that there is an inherent and fixed trade-off: ecology vs. economy.

Porter and van der Linde (1995: 120)

Regulation, in the sense described by traditional economic theory, has been a part of industrial activity for many years, and is usually defined as the mechanism by which the governments of advanced industrial societies deliver those public interest goals not delivered by the market (Gouldson and Murphy, 1998). Regulation is essentially about control, and as Ogus (1994) suggests, specifically about the control
by a superior authority of the operations of private organisations. Traditional economics sees failures of the market as the principal motivating factor behind regulatory intervention (Majone, 1996), a position that Mitnick adopts when he claims that, 'Regulation is the public administrative policing of private activity with respect to a rule prescribed in the public interest' (1980: 7).

Because environmental quality is basically a public good (along with national defence or public administration, for example) it is free for people to enjoy and difficult to exclude from widespread enjoyment: there is, therefore, insufficient incentive for the market to provide it. Command and control, or mandatory regulation, has traditionally been the Government's main approach to ensuring market compliance with environmental legislation, and making sure the public interest is served. The context for regulation is established by the wider policy framework (Gouldson and Murphy, 1998), but as Ball and Bell (1995) note, establishing policy is distinct from establishing a regulatory system because it defines the climate of governance in which regulation occurs. Regulation therefore serves to support policy, and is a system of controls designed to enable and ultimately legitimate political decisions. Selznick (1985: 363) suggests that regulation is 'sustained and focused control exercised by a public agency over activities that are valued by a community.' Jacobs (1991: 136) goes further claiming that it is 'any administrative measure taken by government which has the backing of law but does not involve either a direct financial incentive or direct government expenditure.'
For other commentators, these kinds of readings are problematic because they assume that regulation is always in place to serve the public interest. Wilson (1980), for example, is more comfortable with the notion that regulation is the outcome of interest group contestation, in which the public are only one group, while Stigler (1971) holds that regulations are 'captured' by the regulated, and used to the ultimate benefit of the regulated body. In any instance, regulation – as a restrictive mechanism in the market place - is growing in importance in the UK, and seems to be playing an increasingly visible role in defining those areas where business needs to be vigilant and responsive to change.

Ideas of control have been central to management/organisational theory for many years, and as Jacques (1996) has argued, are now central and defining characteristics of modernity. If order and certainty are the ultimate goals of management and science in society, control is the primary mechanism by which people are made accountable for their actions, and by which rational behaviour is secured. As Fineman and Sturdy (1999) suggest, the perspective usually presented is where 'appropriate' controllers (management, state agencies) ensure, through various techniques, that the controlled (employees, industry) conform to their own particular rendition of objectives, interests and standards (631). Environmental regulation operates, in the main, along these lines, and the principal regulators (Environment Agency, Local Authority, Yorkshire Water) ensure that businesses operate according to the regulations currently in force. Control can be manifested in other
ways, however, and there is a rich literature exploring how control can be used in the fields of marketing and corporate strategy (to control customer spending habits), and also in social-psychological areas where, as Herzberg (1966) and Macfarlane (1978) suggest, control may be implicated in individual and/or cultural preferences for job autonomy (Fineman and Sturdy, 1999).

The impacts of regulatory control on individual management roles have never been extensively explored however. A lack of effective communication and negotiation between regulators and firms – part of a wider mistrust between business and government – has long been blamed for the poor acceptance of regulation in business activity (Reich, 1981; Anderson & Wolff, 1996). The psychological and emotional effects of regulatory control on individual managers are rarely discussed in the green literature, and by its omission many studies suggest the regulation of environmental law is seamless, and raises no personal qualms with managers. Although control is a fundamental component of regulation, there is scarce comment as to how regulatory control – and by definition the loss of control experienced by business – affects the outlook, attitude and decision-making of the firm. What is also largely assumed is that this control is uni-directional, and that regulator and regulated perform according to established codes of right and wrong, lawful and unlawful. What Fineman (1998) suggests in his analyses of environmental control in the field is that often, control operates in both directions. While the ‘regulator’ may have legislative and legal control of the encounter, the
regulated body can still manipulate the outcome by bargain, bluff and emotional
display used to strengthen their position and weaken that of the regulator.

How management responds practically and emotionally to the process of regulation
and to regulatory bodies is an area that has not received a great deal of attention in
the academic literature. The business-environment literature, while acknowledging
the scope of the regulatory framework, does little to illuminate how the process of
regulation, and regulators themselves, are received in the workplace. This is
perhaps not surprising because, given its focus on institutional barriers to change,
the green literature has always tended to look at the environmental encounter as a
clash of interests at a much larger scale, and write individuals out of the equation in
favour of more generic groups such as managers, stakeholders or organisations. On
a broader scale, it is the regulatory domain and the regulatory system as a whole that
are discussed in corporate greening literature (for example, Baylis et al., 1997;
Hillary, 1995), and regulation is treated as a prescriptive series of measures that acts
on the organisation, or as Stephen Fineman (1998) comments, as a ‘scaled box’
illustrate in his extensive work on environmental control, regulation of the
environment relies upon numerous staged encounters between regulator and
regulated. Far from being a ‘coming together’ of two fundamentally opposed
groups with conflicting interests, successful environmental regulation often relies
upon the dynamics of the personal encounter, on bargain and bluff, and on both
parties achieving, or at least believing they have achieved, ground on the other.
3.5.1 Mandatory and voluntary regulation

Although mandatory regulation is very much the cornerstone of environmental regulation in the UK, and still represents the major policy instrument used to combat environmental degradation, voluntary or self-regulation has grown in significance as an alternative approach. Agenda 21 encourages businesses to increase self-regulation, seeing such moves as beneficial in fostering openness and dialogue within firms. The World Business Council for Sustainable Development believes that voluntary regulation, 'allows business to achieve the desired goals in the most effective manner possible' (NOG Taskforce, 2002). Jenkins (1995) identifies a number of broad arguments to support a move away from command and control, to self-regulation. Firstly, he suggests that self-regulation may lessen the cost burden on central Government because of the reduced need for centralised agencies and public expenditure.

Because it places higher levels of trust in the organisation, self—regulation may be better able to foster a sense of environmental responsibility in businesses, and promote a culture of environmental sensitivity not possible with the mandatory approach. Jenkins also argues that because industry is more involved in the mechanics of environmental protection, efficiency gains are more likely than with mandatory regulation policed from outside. Perhaps the most powerful argument for giving the regulated body more freedom to manage the regulatory process itself,
however, is that in giving greater control to the organisation, a better working relationship is generated between regulator and the business community. SMEs are more inclined to treat the regulatory process as important, while regulatory bodies see businesses as less detached, fulfilling a more participatory role in the regulatory process.

Criticisms of voluntary regulation point to the easing of restrictions on environmental care, and the placing of too much trust in the hands of a profit-driven economy. NGOs have been especially critical of moves towards voluntarism, especially where they see it as an evasive mechanism designed to justify the dismantling of regulations or to prevent independent monitoring and evaluation (Barber, 1998). These comments are reflected in broader criticisms of ecological modernisation, where despite the faith that is shown in entrepreneurship and the market mechanism (Gouldson and Murphy, 1998), there is the reality that this kind of approach merely represents 'modern society continuing to do what has always been done by protecting established institutions' (p.4). While self-regulation clearly provides benefits for Government in terms of reduced costs, it still raises the question of whether compliance is taking place, or, as Gouldson and Murphy (1998) infer, whether voluntary regulation actually means no regulation at all. It also presents difficulties in the monitoring of progress. Centralised command and control regulation, through records of fines and prosecutions, allows the Government to more accurately quantify the degree to which business is taking
notice of legislation, and therefore form a national picture of environmental compliance and non-compliance.

These arguments aside, command and control is still the method of regulation that has greatest impact upon the food-sector. As chapter 6 will argue, the regulatory framework is seen as fragmented and often ill suited to the needs of small businesses in Yorkshire and the Humber, and there are possibilities for regulation to take a more enabling role in environmental improvement – particularly where it can highlight sensitive areas and encourage learning. The following section discusses the major developments in organisational learning theory, and suggests that the sometimes confusing arguments put forward can be condensed to a series of more simple questions – questions that have direct relevance to environmental learning in the SME

3.6 Organisational learning

The field of organisational learning (OL) has been present within management studies literature for decades, but has only recently crossed disciplinary boundaries into economic, sociological and psychological studies (Easterby-Smith and Araujo, 1999). Within the literature, it is not always possible to make a clear distinction between the two quite different approaches to OL: the managerial/consultancy literature, which increasingly takes the form of self-help books and manuals promising companies increased efficiency and effectiveness (Pedler, et al., 1999; Senge, 1996), and the academic texts which are more concerned with the complex
relationships between knowledge, learning and the social interplay within organisations (Argyris and Schon, 1978; Levitt and March, 1988; Senge, 1990; Easterby-Smith and Araujo, 1999). As Schein (1996) has concluded, the contribution of so many different theoretical and practical approaches make it sometimes difficult to be clear on what the term actually means.

For the most part there is an uneasy balance between the two approaches: both acknowledge similar strengths and weaknesses in research conducted to date, and both, in subtly different ways, agree where the important questions still lie. The majority of literature, from both perspectives, has tended to focus on two key questions: how the individual within the company learns, and how they share that information with the collective that is the organisation. The texts are rich with models and diagrams that claim to illustrate how these processes operate, and how organisational learning may be understood as following a linear and sequential series of actions.

No one has answered this question with any real clarity however, and as Antonacopoulou (1996: 217) suggests, ‘...one of the basic concerns is whether learning at the organisational level is the sum total of individual learning, or an integral part of organisational functioning regardless of whether individuals learn.’ This question is essentially asking whether OL exists independently of individual learning, and if so where the differences lie. The learning techniques and capacities of individuals form the subject of extensive psychological research (Festinger, 1957;
Landa, 1976; Merrill, 1983, 1987; Spiro et al., 1988), but OL literature seeks to establish if and how learning takes place 'in situ' and amongst multiple actors. Research asks whether there is more to OL than individuals learning side by side? Are there, for example, emergent properties to OL that reach beyond a simple pooling of information learned from independent sources? How organisations learn, and to what extent individual learning feeds a collective learning, are thus the main areas of focus, and also disagreement, within the literatures.

3.6.1 Approaches to organisational learning:

On a practical level, approaches to studying and understanding OL have varied across disciplines. Operations and production management have tended to look at the process in terms of its ability to assist organisations 'improve their performance on the world stage' (Chaston, et al., 2001: 1417). In high competition industries (of which the food-sector is one) where products and processes can be rapidly copied, De Geus (1988) suggests that employee-centred learning is a source of competitive advantage. Marketing approaches, while still concerned with competition, are focussed on ways of building stronger relationships with customers (Webster, 1992). Hamel and Prahalad (1994), for example, suggest that just being a learning organisation is not sufficient (quoted in Chaston, et al., 2000). They suggest that learning must at some stage be translated into managerial competencies that permit the firm to respond more effectively to customer needs.
But as Prange (1999) argues in her review of current OL literature, asking in which ways learning may be considered organisational is possibly a flawed approach because of the different ways the term can be used. Depending upon perspective, the phrase can be taken to mean several things. In talking about OL are we talking about individual learning within an organisational setting (Argyris and Schon, 1978; Duncan and Weiss, 1979), OL that is similar to individual learning (Hedberg, 1981), or, as has been proposed by Levitt and March (1988) and Weick and Roberts (1993), a type of emergent learning that evolves from the social interplay of individual learners within organisations? To analyse the full range of theoretical constructs put forward to account for the subject of OL, and how the individual and the collective fit together, is probably outside the scope of this thesis, and unnecessary, but a limited review may pave the way for an understanding of OL compatible with current business practice. Table 3.2 presents a summarised account of the major approaches.

Despite the apparent evolution of thinking, however, there have been few radical developments over the last few years, with debates becoming increasingly internalised and over-reliant upon theory. Many of the models re-tread old ground, and points are made in general terms at the expense of looking more closely at how learning actually occurs ‘on the ground’ and in practical settings. For example, the learning pathways for new legislative information or customer feedback to certain products are not analysed in any of the texts, and no attempt is made to compare real learning with theoretical constructs. Of greater benefit to the growing literatures
would be empirical observations of learning underway or learning practically achieved.

<table>
<thead>
<tr>
<th>Author(s) (Year)</th>
<th>Definition of OL</th>
<th>Who? (Subject of OL)</th>
<th>What? (Content of OL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyert and March</td>
<td>Adaptive behaviour of organisations over time</td>
<td>Aggregate level of organisation</td>
<td>Standard operating procedures and organisational rules</td>
</tr>
<tr>
<td>(1963)</td>
<td></td>
<td></td>
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<tr>
<td>Argyris and Schon</td>
<td>Process by which company members detect errors or anomalies and correct them</td>
<td>Individual learning in organisations</td>
<td>Organisational theories-in-use or theories-in-action</td>
</tr>
<tr>
<td>(1978)</td>
<td></td>
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<td></td>
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<tr>
<td>Duncan and Weiss</td>
<td>Process by which knowledge about action-outcome relationships and the effect of the environment on these relationships is developed</td>
<td>Individual is the only entity that can learn. He or she must be seen as part of a system of learning.</td>
<td>Organisational knowledge base.</td>
</tr>
<tr>
<td>(1979)</td>
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<tr>
<td>Fiol and Lyles</td>
<td>The process of improving actions through better knowledge and understanding</td>
<td>OL not simply the sum of individual learning</td>
<td>Patterns of cognitive associations and/or new responses or actions (cognitive vs. behavioural change)</td>
</tr>
<tr>
<td>(1985)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levitt and March</td>
<td>Organisations learn by encoding inferences from history into routine behaviour</td>
<td>OL more than individual learning and involves an emergent component</td>
<td>Routines (including: rules, procedures, frameworks, cultures, belief structures, paradigms)</td>
</tr>
<tr>
<td>(1988)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Huber (1991)</td>
<td>Learns if range of potential behaviours is increased. Potentially useful information</td>
<td>Concept of entity including individuals, groups, industries, societies, etc</td>
<td>Information/knowledge</td>
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Weick and Roberts (1993) Consists of (heedful) interrelating actions of individuals resulting in a collective mind Connections between behaviours rather than people Behaviour/action

Table 3.2: Chronological development of principal OL approaches (Adapted from Prange, 1999)

Most of the commentaries offer little in the way of new perspectives regarding how people work, and how people relate to each other while at work. The workplace is treated as emotionless, sterile and devoid of the kind of human interactions that enable people to learn from one another, rather than just remote sources.

Fryer (1997) has made similar observations, but points to the fact that there are few practical guidelines or sources of advice available to small firms on how to become a more actively learning organisation. Easterby-Smith (1997) offers a partial explanation for this by suggesting that there are few empirical studies that validate the claims made by different advocates of OL, and that it largely remains untested ground.

The real shortfall of OL literature, which is particularly evident when considering questions of environmental knowledge, is the reluctance of existing approaches to centre the individual in the learning process. Organisations are made up of people, and the failure of much literature to discuss why people learn, where, under what circumstances, etc., leaves substantial gaps in coverage.
3.6.2 Re-situating the workforce in OL

Nonaka's (1996) work on the knowledge-creating company helps challenge some of these narrow conceptions of learning, and proposes a more inclusive framework, where by learning is characterised by the creation of knowledge in-situ as well as externally. Nonaka suggests that creating new knowledge within the company is not just a matter of processing objective information – i.e., learning from external sources - as these initial examples suggest. Effective knowledge creation, he argues, depends upon 'tapping the tacit and often highly subjective insights, intuitions and hunches of individual employees, and making those insights available for use by the company as a whole.' (1996: 19) Nonaka argues that promoting greater social contact within the firm (not just management to management, but management to production and production to production) stimulates the discussion of these insights, and while of little use viewed individually, brought together they may offer new ways of looking at the processes and problems of the firm.

Along similar lines, Argyris and Schon (1978) have developed their ideas of single- and double-loop learning (Figure 3.2), as a way to distinguish more clearly between individual and group-centred learning.
Single-loop involves the identification and correction of operational errors within a set of variables, or processes. So for example, a bakery experiencing inconsistent mixes in its dough production would make adjustments to ingredient inputs until the mix was correct. Each new batch would be tested, and changes made until the balance of ingredients was stable. Here, the learning is incremental and changes made direct – single-loop learning. Considered from an environmental perspective, this is analogous to an SME identifying areas of non-compliance in its procedures and acting to ‘patch up’ the problem. There is a direct fix applied to the problem area. Double-loop involves more fundamental change, and typically entire systems, personnel and even corporate strategy may be reviewed rather than just the negative outcomes. Using the same example, the bakery, instead of looking at individual problems, would review the processes and systems that generated the error in the first instance, and make changes at a macro-scale. Again, transferring this to the environmental field would see the firm import a more preventative system, and would involve pre-emptive action towards environmental action.
The concept of single and double loop learning has been adopted by many researchers looking at OL, as it gives the flexibility to consider learning as more than a one-dimensional process. Marketing researchers, for example, have used the ‘loop’ logic to underpin an approach they refer to as relationship marketing, in which longer-term customer relationships are the goal. As Webster (1992) suggests, developing stronger, longer-lasting business relationships is increasingly seen as a way for firms to negotiate competitive market conditions.

3.6.3 Socially situated learning

Weick and Robert’s (1993) vision of interrelating in the workplace suggests that there may be a growing appreciation of worker communication within OL, even this lacks any real depth and scope. Newer, socially situated approaches that integrate sociological and psychological thinking have begun to appear more frequently however, and have been critical of these ‘individualistic’ notions of learning in favour of more grounded theories that look beyond linear thinking at the cultures and ‘ways of life’ of employees and firms themselves (Brown and Duguid, 1991; Orr, 1990). These approaches suggest that learning is both action and interaction; they tell us that the company can learn not only by accessing external information, but also by the actual process of internal discussion, argument and negotiation. As thinking has progressed along these lines, however, few authors have addressed what to some may seem an obvious question: if learning also occurs among the members of the organisation, how does the nature of that organisation limit or
enable particular learning outcomes or scenarios? Despite the vast quantity of psychological research on individual cognition, and increasingly organisational learning, the way individuals are organised, influence what is learned, and dictate what is prioritised by that organisation as worthy of learning, is not adequately explained.

As the different strands of OL thinking have moved in their own directions, the field has grown increasingly fragmented and seemingly hard to reconcile. For some, who wish to see the development of an OL meta-theory that brings these strands together, this fragmentation is a source of worry. Mackenzie (1994: 251), commenting on the lack of progress in OL research over recent years states: “The main conclusion is that after 30 years of effort, the scientific community devoted to organisational learning has not produced discernible intellectual progress.” For others, however, the very nature of organisational life, learning and change, negates any possibility of such a single, unified approach; there is simply too much variance in all three to unite them under one theory. Many critics are now agreeing that it is probably beneficial to accept and explore the differences rather than fight over whether they exist.

Within any organisation therefore, there are distinctions between conscious and unconscious learning, spontaneous and premeditated learning, and even individual and group learning. The relationships between these different components provide the basis for research. Certainly, in terms of learning in SMEs, a socially situated
theory of learning would have much to offer in the way of dealing with environmental issues. Integrating regulatory requirements and eco-efficiency would benefit greatly from a learning culture involving a majority of workers rather than a select few. This has particular relevance if we are to understand how SMEs can be encouraged to develop a greater sense of environmental awareness generally. As Judith Petts (1998) has suggested, organisational learning is essential to corporate greening. It is fundamental, she claims, to giving individuals a shared sense of responsibility for problems generated by the system’s activities. Employees are treated predominantly as the passive recipients of change, charged with implementing but never contributing to active learning. This attitude towards shop floor personnel still appears to be widespread in the Yorkshire and Humber region, and while it prevails, the experience and insights of a majority of workers in the food-sector will go unnoticed. If environmental learning is the exclusive responsibility of one, or a small core of middle/senior managers, and that information is merely shared with those company operatives that are deemed best able to act on that information, the organisation as a whole has not learned. If, however, a majority of the workforce is included in the learning cycle, and encouraged interact and share its ideas with a view to improving environmental performance, there is a better chance of overcoming not just individual problems, but also the organisational inertia often encountered with new ideas and concepts.
3.7 Chapter conclusions

The literatures reviewed in this chapter pose a number of questions, and make a number of statements on the relationship between businesses and environmental issues. Some of these, such as Elkington et al. (1991) and Welford’s (1991) work on the economic benefits of greening, are well established within business-environment literature, while others, such as Nonaka’s (1996) research on the knowledge creating company and Argyris and Schon’s (1978) learning loop models, are relatively new. Through the methodology detailed in Chapter 4, this research aims to explore business and environmental issues on a regional scale, and in so doing comment on whether both the established and emerging literatures accurately reflect the Yorkshire and Humber sub-region’s practices in relation to environmental activity. It is useful to break this question down into a number of broader questions that are addressed by the aims of the thesis.

Acceptance

Historically, business and the environment literature has suggested that the logic, if not the practice, of environmental improvement is accepted by SMEs, and that the win-win benefits are a precipitate of this kind of thinking. The thesis challenges the orthodoxy of these views, and explores the possibility that managers may not think along the linear, predictable lines assumed in such writing. The interviews seek to expose the thought processes of managers, to see if the prospect of reduced running
costs or cleaner image carries the importance suggested. Even some of the most frequently cited authors working in this field (Welford, 1993; Elkington, 1994, Shrivastava, 1996) often make the connection between environmental excellence and increased business profitability without adequately considering the 'human element', and the unpredictabilities of business life.

**Learning**

The organisational learning literature makes two clear distinctions. It proposes that learning is achieved in the organisational setting as either single or double-loop, or through individual or social/interactive learning. Through interviews with management who have responsibility for environmental learning, the thesis will test whether one, both or indeed any of these positions are representative of what is happening across the sample. Classic organisational learning studies (March, 1996; Levitt and March, 1996; Argyris and Schon, 1976), while taking different approaches to understanding the process of learning in different organisational contexts, seldom question the rationale for this learning. It is assumed that learning – and the distribution of knowledge – is an unquestioned goal for many firms, as integral to operations as purchasing or distribution. Not wanting to learn, or failing to see the necessity for learning, are not considered viable possibilities in these works, nor is the fact that businesses with ten or fewer employees may also warrant study.
Regulation

Regulation is the major policy instrument designed to encourage environmental improvements in the region's SMEs. Through providing a baseline of minimum environmental standards, regulation provides the platform from which companies are then expected to move forward. Regulation is a permanent feature on the business-environment landscape, and the years from 2004 onwards will surely see a plethora of new measures, from both the UK and the EU, designed to tighten the regulatory hold – and control – on businesses throughout the country. With this certainty comes the need to ask more probing questions not only of the need for such a rigorous regulatory regime, but of the kinds of responses we can expect the business community to make. The latter has not yet received widespread attention (exceptions include Stephen Fineman's (1998; 1999) work on environmental control), and this thesis asks some exploratory questions designed to expose the strengths and limitations of an increasingly ubiquitous set of controls. For example, does tougher environmental control encourage a more or less positive response by SME managers? Are businesses happy with the levels of intervention, and is the contact time between regulators and managers productive in the longer-term?
FOUR: METHODOLOGY

4.1 Introduction:

The principal aim of the thesis is to assess how the individuals who own or operate small to medium-sized food-sector enterprises respond to, and deal with the environmental pressures that are gradually becoming a part of their business environment. While corporate responses to these pressures are discussed in terms of organisational learning, the attitudes of key decision-making staff – those concerning environmental knowledge, learning and regulation – make up the core areas of the thesis. The thesis has made an in-depth study of individual positions and attitudes to the environment, and therefore required a methodological approach that was suited to analyzing what people know, what people think they know, how they learn and how they act in the face of environmental pressure - indeed, the very basis on which they make decisions. It was important, therefore, that the methods employed in the study not only gathered these kinds of data, but also adequately coped with the strains and concerns expressed by participants discussing these kinds of issues. Given the complexity of the task, qualitative semi-structured interviews with a range of stakeholders, and limited participant observation were chosen as the preferred research techniques. This chapter seeks to explain why this choice was made, and in so doing, explore the conflicting strengths and weaknesses of such an approach.
4.2 Qualitative research and grounded theory:

During the last two decades qualitative research has grown in importance as an independent methodology in the social sciences. Although such research is still used to supplement quantitative techniques, interviewing, participant observation, and focus groups are now legitimate and widely used approaches to social and applied research in their own rights. As Ritchie and Spencer (1994: 173) suggest, "the wider use of qualitative methods has come about for a number of reasons, but is underpinned by the persistent requirement in social policy fields to understand complex behaviours, needs, systems and cultures." The study of environmental issues and business involves, arguably, all of these, and qualitative techniques are employed in this study to gain some insight into how the business world deals with the new pressures of environmental improvement alongside its other core functions.

Although the name of this thesis suggests SMEs to be the primary unit of analysis, it is key managers within firms who are placed under the spotlight for interview. These managers speak for the companies they represent, but also for themselves, and one of the challenges of this research is to distinguish where and how such differences are expressed. The views and opinions put forward by individuals reflect personal beliefs about the environment, but also encompass more politicised views concerning the role of business in the environmental debate. These issues lie at the heart of what this research aims to achieve, and present a strong argument for using a research methodology that is flexible enough to bring out the subtleties in
each. To justify the grounds on which the research is carried out however, it is first necessary to reflect generally on the applications of qualitative techniques, and more specifically on the benefits of adopting a grounded theory approach.

4.2.1 Qualitative research:

The relative strengths and applications of qualitative methodologies have been documented exhaustively in many methodological and research publications (Silverman, 1997, 2000; Kvale, 1996; Morgan, 1988; Mason, 1996; Hammersley, 1992). This has been due to a general increase in the use of qualitative research techniques across many disciplines that previously relied upon more numerate and quantifiable approaches, the most immediate example of which being psychology. Increasingly, as social science research has sought deeper insights into people’s experiences and beliefs about the world in which they live, research tools that go further than mere description and quantification of views have become necessary. Research has needed to engage more directly with the research subject. It has required reflection, thought and openness on the part of the interviewee, and as Kvale (1996) posits, a way of interpreting the meaning of the central themes in the life world of the subject.

Critics of qualitative research have questioned the extent to which these approaches are trustworthy, however. Are they, for example, reliable, accurate and representative of a majority? As Miller and Glassner (1997) have suggested, one of
the problems in looking at interview narratives as being representative of an 'objective truth' about the world is that they are context specific, and in this sense only truly represent the views of the interviewee. Positivist scholars argue that the responses given to interview questions are created by the interviewee to fit the demands of the interactive context of the interview, and are not, therefore, any reflection of reality. Further, it has also been suggested (for example Denzin, 1991; Charmaz, 1995) that the language used within these responses often masks the real issues sought. Because interview length is finite, responses have to be partial; the language and syntax used as a consequence only puts over a partial version of the interviewee’s experiences. As Denzin notes, ‘the (interview) subject is more than can be contained in the text’ (1991: 68).

These arguments are common in discussions of methodological technique, and are typical of many positivist critiques of constructionist views of the world: namely, that qualitative research of this nature cannot record the object reality of the social world. Despite the obvious contention that there is no object reality - of the social world or any other - these criticisms are not without some basis. As Mason (1996) has observed, it is important to remember that data generated through interview is in many ways ‘second hand’. The interviewee is not actively experiencing the thoughts, feelings and emotions generated by past events during the interview, but merely recounting these states for the interviewer. The researcher is thus receiving ‘filtered’ and moderated accounts of the interviewee’s experiences. Critics also point to the fact that, because qualitative researching relies more heavily on the
agency of the researcher (as interviewer and interpreter), consistency and reliability of interviews is questionable. Processed interviews may contain irregularities such as transcription errors and miscoding which can compromise the reliability of the data, and thus affect the meanings taken from the interviews. Using interview techniques successfully therefore relies to a large degree on the consistency of the researcher.

Qualitative researchers would of course argue that establishing any kind of hard truth is neither possible nor desirable. People's lifeworlds – and within them their priorities, interactions with others, views, experiences of phenomena – constitute their own realities in which their lives and actions take on meaning. Managers of food-sector companies interviewed in this research, for example, will interpret questions of environmental awareness and responsibility in response to a number of external and internal stimuli, and from there create frameworks of meaning and relevance that guide their future decision making. Their realities are shaped by, amongst other things, market expectations, cash flow, regulator pressures, innovation, stakeholder concerns, and a plethora of other issues. Interviewing these staff members presents one way of gaining access to these sets of meaning – and hence their beliefs - and should therefore be viewed less as offering a 'window on reality', and more a method for understanding one person's (or a group of people's) social reality.
For this thesis, accessing people's knowledge, views, understandings, interpretations and experiences of environmental issues and learning, is crucial to understanding the particular social realities the research aims are designed to explore (Mason, 1996). Thus, this kind of interviewing allows some insight into how individuals make sense their own daily routine, and from there, how particular events and circumstances produce specific emotional states and responses.

Amongst interviewees who share similar market pressures, regulatory demands, and requirements for quality and quantity of produce, discussing environmental issues may evoke many feelings of worry, doubt or satisfaction comparable across the sample. These interviews are designed primarily to expose recurring issues of concern amongst the SMEs participating, and from these identify more tangible issues surrounding the drivers and barriers to environmental performance in the sector and region. Such an approach is broadly consistent with the procedures for grounded theory, which presents the most suitable methodological platform for the fieldwork.

4.2.2 Grounded theory

Grounded theory is now amongst the most influential and widely used methods of carrying out qualitative research, when generating theory is the researcher's principal aim (Strauss and Corbin, 1997). The theory takes its name from the fact that the generated interpretations are grounded, or rooted in the data. As Hall and
Davis (2001) suggest, grounded theory is an interpretative process in which the analyst takes responsibility for perceiving and creating order in the interview data. Glasser and Strauss (1967), commenting on the rudimentary features of grounded theory, characterise the approach as, 'one oriented towards the inductive generation of theory from data that has been systematically obtained and analysed' (quoted from Locke, 2001:1). In other words, the approach allows the researcher to create hypotheses and theories that more accurately reflect what has been uncovered in the discussions and interviews from the fieldwork. Diagram 4.1 is a basic schematic showing the individual steps in grounded theory analysis.

![Diagram](source: Hall and Davis, 2001)

**Figure 4.1:** Steps in Grounded Theory Analysis (Source: Hall and Davis, 2001)
Speaking of the early development of grounded theory, Strauss and Corbin (1997) suggest that a number of factors contribute to the need to ground theory in the realities of field data. These are:

- The need to get out into the field to discover what is really going on
- The relevance of theory, grounded in data, to the development of a discipline and as a basis for social action
- The complexity and variability of phenomena and of human action
- The belief that persons are actors who take an active role in responding to problematic situations
- The realisation that persons act on the basis of meaning
- The understanding that meaning is defined and redefined through interaction
- A sensitivity to the evolving and unfolding nature of events
- An awareness of the interrelationships among conditions, action and consequence

Grounded theory allows researchers to develop a theoretical interpretation of an organisational phenomenon while simultaneously grounding the interpretation in empirical data (Martin and Turner, 1986). So, for example, if a number of respondents focused on a particular issue that was problematic for them, and cited similar reasons for this, it would be possible for the researcher to theorise on the basis of these comments. In this thesis, because the sample was chosen on the basis of companies’ environmental profile (i.e., number of process operations, familiarity with major pieces of legislation), and was not therefore random, a grounded theory approach seemed the most suitable way of approaching the data set. It was
anticipated before the field work — and by the analysis of pilot interviews (see section 3.7) - that responses to the same set of questions would be highly varied, depending upon the size of the firm, the position of the interviewee, the current relevance of environmental legislation to the company, and other factors. Interviews were semi-structured, and the order and pace of questions were therefore controlled largely by the interviewee. Other approaches, such as content or discourse analysis, were discounted because of the time and complexity involved in sorting and coding responses.

The following sections give a more detailed breakdown of the methodological process, from design through to analysis. No description of the interview particulars is given, although a copy of the interview questions and the questionnaire is included in the Appendices.

4.3 Identifying the population:

To estimate the SME population in the Yorkshire and Humber region, several sources were used. There was no single listing containing all required information on all companies, and a combination of different sources was needed. These were:

- *Yellow Pages*: provided listings under general headings of manufacturing, processing and packing (Drawback was that only phone number and address were supplied)
• **Web-based search engines (FAME, SCOOT):** provided recent financial information including cash flow, turnover, profits, and whether independent or privately owned. (Drawback – inclusion costs money, so many firms may not be listed)

• **Council Business Directories:** Provided listings of firms within council controlled areas, including some limited description of processes and range of outputs.

• **Regional and national trade associations:** Provided sector- and sub-sector-specific listings of food and drink companies. These listings provide the most detail in terms of key staff names, positions, and phone numbers.

Using these sources, the total population of Yorkshire and Humber SMEs from which the sample was taken was 334. These included only SMEs employing from 3 to 250 staff, and were a mixture of processors, producers or both from the eight most common food sub-sectors in the region. Table 3.1 details the breakdown of the identified population, and ranks sub-sectors according to their prevalence in the region.

4.3.1 SME size bands

The European Union defines SMEs as those firms with up to and including 250 employees, but makes a number of distinctions within this category. Firms with 10 or fewer employees are referred to as micro-enterprises, 11 to 49 as small
enterprises, and 50 to 250 as medium-sized. With the exception of several fish processing firms, nearly all companies identified in the population employed more than 49 people. It was therefore decided that, to obtain a more equal percentage of firms with different staff totals, these official groupings would be re-classified as:

| 1-70   | Small-sized (including micro-enterprises, 1-10) |
| 71-150 | Small-medium sized                              |
| 151-250| Medium-sized                                    |

4.3.2 SME ownership status

Before sampling, it was initially taken that the SME population would be made up predominantly of independently owned companies, with a much smaller number of wholly or partly owned subsidiaries. Statistics for the region indicate that over 80% of businesses are independently owned (ONS, 2003). In actuality, a high proportion of SMEs contacted (approximately 40%) were owned by larger national and multinational enterprises. Ownership status has implications for the study of environmental attitudes in the firm (reflected in policies towards spending or publicity, for example), and it was therefore decided to include a mix of wholly and partly owned firms within the total sample to provide contrast on certain issues. Many policy decisions were decentralised in subsidiary companies, and made by management boards remote to the production/processing site. Their inclusion in the final sample enabled some comparison between levels of environmental action in both kinds of SME.
4.4 Sampling

The primary consideration when selecting firms for interview was the nature of processing/manufacturing conducted on site, and the diversity and range of produce of the firm. Environmental impacts at these sites are likely to be more widespread, issues more representative of the food-sector generally, and awareness of impacts more varied (FDF, 2000). It was not the intention to only target firms with a high level of environmental awareness and desire to act, but equally firms whose knowledge was less advanced and whose outlook more sceptical.

In addition to this, it was deemed important to quota sample a similar number of SMEs from each of the size brackets (see 3.3.1). Larger companies with higher turnovers, greater cash flow, and therefore potentially more resources to fund environmental improvements operate in the same market as much smaller firms that may only just be clearing overheads. Interviewing representatives from each sought to expose relationships between company size, the availability of resources and environmental activity. In terms of organisational learning, larger SMEs with more complex management structures potentially dealt with the pressures for environmental differently than smaller firms. This also indicated the need to build a sample from companies of varying size and management structure.
4.4.1 First contact with the SME

Through information made available by trade listings and business directories, it was possible to identify the general manager or operations manager of some SMEs before phoning. Where this was the case, these people were sought initially as the first point of contact and then asked which member of staff was responsible for environmental matters in the firm. In several instances (see Table 5.1) the general manager took responsibility, but in other cases the production, technical or site managers were recommended. Where names were not available prior to contact, the receptionist was informed of the purpose of the research and the most appropriate staff member sought. The receptionist acted as an important gatekeeper in these instances, and their patience and judgement sometimes meant the difference between being put through to a staff member who could help, or being rejected.

4.4.2 Acceptance rates

Staff in the small SME (1-70) size bracket showed greatest reluctance in taking part in the research. The 12 acceptances from 52 approaches was low in comparison to the 13 from 30 and 13 from 21 in the 71-150 and 151-250 size brackets respectively.

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<th>Employee Size</th>
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<td>1-70 employee</td>
<td>52</td>
<td>12 SME</td>
</tr>
<tr>
<td>71-150 employee</td>
<td>30</td>
<td>13 SME</td>
</tr>
<tr>
<td>151 - 250 employee</td>
<td>21</td>
<td>13 SME</td>
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4.4.3 Collecting pre-interview information

When the correct member of staff had been reached and they had agreed to take part in the research, a short, exploratory discussion was struck up focusing on general awareness of environmental issues, legislation and experience with regulation or regulators. Through this process, it was possible to build a simple profile of the firm (i.e. whether they directed any resources towards environmental improvements, whether it was a board issue, etc.). It was also the intention at this point to ask a few basic questions about the firm's compliance record - with the Environment Agency, local authorities and water companies. This information was not willingly divulged over the phone, however, (see 4.5) and these more sensitive issues were kept for the interview.

4.5 Pilot interviewing

When the sampling procedure had been completed and an interview outline constructed, five pilot interviews were arranged. These served to test the clarity of the recording equipment (proximity to microphone, acceptable levels of background noise, etc.), to create interviewer familiarity with questions and prompts, and also to gauge the general relevance and impact of the questions on managers. The pilots were also the first real test of whether the chosen research method could generate data of sufficient quantity and quality to fulfil the aims. The results were positive.
There were, however, a number of minor issues highlighted by these trial interviews.

Over the course of the five pilot interviews, some changes to question wording and focus were made. These were:

- Some of the questions initially caused confusion, especially those exploring differences between personal and business attitudes to environmental issues. Questions were restructured to clarify why such differences may exist.
- Learning emerged as a much stronger and contentious issue during the pilots. Questions were modified to look more closely at sources of learning and issues of trust in these sources.
- Overly academic terminologies were written out of several questions.
- Poor quality recordings in three of the interviews indicated the need for a small room as possible to reduce reflection of sound and echo, and ideally a room with no doors or windows opening into production areas.

Two of the managers interviewed during the pilot stage asked about the confidentiality of the information they were disclosing, and the access business rivals would have to the results. Section 4.6 deals with ethical issues more fully, but, in light of these pilot interview responses, it was decided to inform all interviewees that their names and company names would be substituted with fictitious ones in the final write-up.
4.5.1 Collecting information by questionnaire

The early planning of the methodology included, in addition to the interviews, a postal questionnaire to collect basic company information, and quantitative data on turnover, output and employee numbers, etc. Although it was still intended to interview those companies that completed the questionnaire, it was hoped that this approach would free up more time during the interview to talk about issues not conducive to a tick-box or short-answer format. Fifteen questionnaires were sent out to companies to gauge the relevance of the questions, the quality of response, the time taken to reply, and the general suitability of a questionnaire approach. Of the fifteen, one questionnaire was received back. Weighing up the benefits of capturing this pre-interview information it was decided that, given the relatively small sample size, the quantity of replies would probably not be enough to justify the approach. The decision was taken to abandon the postal approach in favour of pre-interview phone calls.

4.6 Ethical issues and informed consent

An explanation of the purpose of the research, and how the interview material would ultimately be used, were given during the initial phone contact with the interviewee, and in writing when a confirmation letter was sent (see Appendix). Interviewees were told that the purpose of the work was to deepen understandings of how environmental issues and regulation affected small businesses across the
region, and that the research was part of a PhD thesis. A brief description of the scale of the fieldwork was given, and the intention to interview competitors, regulators and trade associations was also established at this point.

The clearest ethical issues raised by this kind of fieldwork are whether individuals and firms should be referred to by their real names throughout the thesis (questions of anonymity), and the degree of access the general public will have to the finished material - and by association, the views, opinions and company specifics contained therein (the question of confidentiality). During pilot interviews, two managers asked whether rival SMEs would have access to production specifics and operational capacities that were discussed during their interviews. Assurances were given that because the thesis was primarily for an academic audience, it was unlikely that any material contained within would be accessed by anyone who could potentially exploit sensitive statements or details. It was decided, however, after discussions with supervisors and other researchers working in similar areas, that total anonymity of individuals and SMEs was the safest way to proceed. Such a step did not affect the arguments or recommendations of the research. Managers and SME were therefore referred to by fictitious names throughout. Case studies were used at certain points during the thesis, and in line with this approach, company names, as well as individual, were changed. Permission to use individual companies as case studies was obtained on the day at the close of each interview.
The research was part funded and supervised by the Environment Agency. As a body with legal powers and responsibilities to protect the environment, interviewees’ awareness of their involvement was seen as potentially restrictive to open and frank discussion of issues. For this reason, the Agency’s involvement was not advertised prior to or during any SME interview. Although non-disclosure of company names and locations was intended to reassure participants of the security of disclosed information, it was still felt that, for companies sub- or non-compliant with legislation, such involvement may be undesirable. The need to generate free flowing dialogue with interviewees, without them worrying about the Environment Agency following up on any information disclosed, was deemed more important than advertising the Agency’s involvement.

The principle of informed consent is that the human subjects of research should be allowed to agree or refuse to participate in light of comprehensive information concerning the nature and purpose of the research (Holman, 1991). In all instances, informed consent was obtained from the interviewee before any material was collected.

4.7 Conducting the Interviews

All interviews with SMEs were conducted at the production/processing plant either in the interviewee’s office, or a small meeting room. In total, 38 interviews were conducted with SMEs in the Yorkshire and Humber region. Interviews lasted approximately 50 minutes to 1 hour; the shortest was 25 minutes, the longest, 1 hour
15 minutes. The intention to record the interviews had already been established during the initial phone call, and no manager questioned the reasons for this. The only instance where recording became problematic was during two interviews where managers openly criticised their trade association's input. At these points it was requested that the tape machine be paused.

The interviews were semi-structured to allow interviewees space to discuss matters of particular significance to their firm, and the freedom to move between issues in a way not possible with structured approaches. A copy of the interview outline is included in Appendix 1. The questions covered the three main areas included in the aims of the thesis: knowledge, learning and regulation. However, due to the conceptual similarities of certain aspects of knowledge and learning, some questions address both these issues. The order in which these central themes were covered in interviews varied from firm to firm, and no attempt was made to steer interviewees towards a predetermined order of questioning.

Each main question carried a number of smaller prompts, which were used only if the interviewee's answer seemed incomplete or lacking any depth. For example:

Q: Do you think learning about environmental impacts /best practice is important to a firm like yours?

P: Could you say why/why not?
P: How does it rate alongside other company issues?
P: Is this an issue your firm has been active in researching?
4.7.1 Positionality

For the interviews to generate the quality of data required, it was important that the participants treat the interview as a serious piece of research. To achieve this, it was felt that the interviewer needed to be perceived less as a student working towards a degree, and more a researcher involved in a professional piece of work that could potentially effect change in the region. Experience from previous research conducted by the researcher suggested that, in positioning himself as a student, responses would be less considered, and assume more ignorance of regional and sectoral issues than if positioned as a professional researcher affiliated to a university. In pursuing the second of these options, it was intended to raise the profile of the thesis beyond that of a ‘qualification’ for the researcher, and more a piece of work that could benefit all parties involved.

Positionality was also an issue during the methodology piloting stage. Initial phone calls to SMEs tended not to be successful where the interviewer introduced himself as a student working towards a PhD. Interviews were gained more easily where the thesis was put forward as a university research project. The approach to introducing the research was thus changed to reflect these preferences. Participants tended to talk more freely with a non-student than with someone still perceived as being in the educational system, and therefore not as familiar with the dynamics and pressures of the private sector.
4.8 Triangulation: the use of additional data sources

In addition to the primary interviews, supplementary fieldwork was undertaken throughout the 2nd and 3rd years of the research. This was included to give different perspectives on the issues and problems raised by SME managers, and contextualise their views within wider discourse on business and environmental issues in the region. Methodologically, triangulation of data is important because it attaches greater validity and reliability to research findings (for example, Denzin, 1989; Hammersley, 1996). Triangulation of quantitative and qualitative approaches is now more common in social science research (Denscombe et al., 1986; Bryman, 1992), because each approach can be used to cross-check and guard against the other's threat to validity (Hammersley, 1996). In this research, rather than using other methodological techniques to increase validation, different holders of information (i.e., different actors in the region) were approached (see 3.7.2). As Smith (1996) has observed, the term triangulation can be misleading in that it suggests the pursuit of an accurate fix or 'true reading' from fieldwork. As he goes on to point out, however, many researchers advocating triangulation, '...would tend to see it as a way of strengthening the claims they make, of getting a richer and fuller story, and not a route to an absolute truth' (1996: 194).

Some of the issues covered in this thesis (organisational learning, perceptions of regulatory pressure, etc.) elicited strong views from the management of SMEs. While the expression of these views was important, triangulation with other regional
and national actors in the sector was an important way of establishing the consistency of these views, and achieving the 'fuller story' to which Smith (1996) refers.

4.8.1 Shadowing

To deepen the analysis of regulation, and its effect on food-sector SMEs, a number of shadowing trips were arranged with the Environment Agency (EA). Observing how regulators went about their jobs, and how they were received by management, was deemed important in defining how effective regulation was as a motivator for environmental improvement. The research was part-funded by the Environment Agency, and through internal contacts, shadowing trips with Environmental Protection Officers (EPOs) were arranged. The researcher followed the EPO during the course of their duties to observe how the process of regulation was played out in the field. It was obviously not possible to tape record exchanges between EPOs and management, but detailed field notes were taken and transferred to hard copy at a later time. After a number of successful days in the field with two Agency officers, it was planned to arrange several more trips. The outbreak of Foot and Mouth Disease placed severe restrictions on EA site visits – particularly those dealing with meat or other farm-sourced produce – and no further shadowing was possible.
4.8.2 Supplementary interviews

Alongside the primary interviews with SMEs, a number of supplementary interviews were conducted with other locally based organisations.

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Type of contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and Drink Federation</td>
<td>1 interview</td>
</tr>
<tr>
<td>Sea Fish Industries Authority</td>
<td>1 interview</td>
</tr>
<tr>
<td>Trade Associations</td>
<td>2 interviews</td>
</tr>
<tr>
<td>Environment Agency</td>
<td>2 interviews</td>
</tr>
<tr>
<td></td>
<td>2 seminars</td>
</tr>
<tr>
<td></td>
<td>2 shadowing</td>
</tr>
<tr>
<td>Business in the Environment</td>
<td>2 interviews</td>
</tr>
<tr>
<td>Business Link (Leeds)</td>
<td>1 interview</td>
</tr>
<tr>
<td>Retailer spokesperson (ASDA)</td>
<td>1 interview</td>
</tr>
<tr>
<td>Chambers of Commerce</td>
<td>2 interviews</td>
</tr>
<tr>
<td>Local Authorities</td>
<td>2 interviews</td>
</tr>
<tr>
<td>Yorkshire Water</td>
<td>phone contact</td>
</tr>
<tr>
<td></td>
<td>Email contact</td>
</tr>
</tbody>
</table>
Interview design was similar to that used with the SMEs. Questions were rephrased to elicit comment from actors with different priorities and goals in the region. By talking with representatives of these organisations, it was possible to validate and support claims made by SME managers, and in other instances identify inconsistencies in the arguments put across.

4.8.3 Case studies

At points during chapters 4 and 6 (Knowledge and Environmental Action) case studies are used to explain more clearly certain points of view and issues referred to by individual managers. Academic literature on the use of case studies proposes a number of uses for the case study, and makes several suggestions as to why such techniques are used. Yin (1989), for example, suggests that case studies may be exploratory, descriptive or explanatory in nature, and their use depends on the context of the case within the research. Valdelin (1974) notes that case studies permit a more holistic view of a phenomenon, and the detailed observations make the many different aspects of a situation more visible.

Criticisms of case studies have, as Hagg and Hedlund (1978) suggest, been made under a number of broad headings. Firstly that they lack statistical reliability and validity, secondly that case studies cannot be used to test hypotheses, and lastly that generalisations cannot be made on the basis of case studies. On a more general
level, case studies have been described as lacking objectivity and rigour (McCutcheon and Meredith, 1993), and as such of putting across biased accounts. Gummesson (1991), however, claims that case studies can positively contribute to any research if they add something of value to the body of knowledge.

In Chapter 6, case studies are included to demonstrate five different approaches to implementing environmental improvements. All would be descriptive by Yin’s (1989) classification, and broad generalisation about other companies’ behaviour would certainly not possible on the basis of such examples. Each study stands on its own to present practical evidence for the rationale firms may use to implement and finance environmental improvements. They are not meant to be a representative selection of SMEs, or reflect typical or representative behaviour. They contribute to the thesis by presenting real situations, and the problems firms have reconciling environmental and economic needs.

4.9 Coding and analysis

The interview transcripts, while constituting the primary data for the research, were at this stage little more than a collection of discussions between interviewer and interviewee. In their commentaries on qualitative research, several authors have observed that interviews are basically conversations with a purpose (for example Burgess, 1989; Kvale, 1996) — that purpose being to fulfil the central aims and objectives of the research. The following section describes the process by which
these conversations were coded, analysed, and used to build the arguments central to the thesis.

Strauss and Corbin (1990) refer to grounded theory as a process of inductively building theory through the qualitative analysis of data. By doing this, it is possible to 'create a theoretical interpretation while still grounding it in the empirical reality of the fieldwork' (1990: 7). It was firstly necessary to name and categorize the important parts of the conversations – a process they refer to as 'open coding'. Essentially, open coding breaks down the sequential question-and-answer format of the interview, and provides discrete sections that can be closely examined, compared for similarities and differences, and phenomena exposed in the data (Strauss and Corbin, 1990). Such work is an important step in the methodological process because, while it constitutes the first real step of data analysis, it orders and labels the 'central' issues the researcher needs to deal with throughout the remainder of the process.

Coding varies greatly in style and complexity, and researchers use a variety of styles depending on the specific requirements of their work. At its most basic, for example, notes and memos are simply written in the margins of interview transcripts on a paragraph by paragraph basis. More complex approaches may take a sentence by sentence or even word by word analysis and insert more detailed markers bracketed within the text to flag key concepts.
The general areas on which the thesis would focus had already been established prior to the commencement of the fieldwork. Questions of environmental response, regulation and corporate outlook on environmental issues were written into the research proposal, as were the industrial sector and geographical location of the study. The coding of interviews, however, was predicated on the data themselves – that is, the issues deemed important by management – rather than on the key aims. After the general focus of the thesis had been established, therefore, the details and specific areas of analysis were determined by the managers interviewed. Coding was therefore to capture the variety and similarity in different managers' opinions and views on environmental issues and regulation. Table 4.1 indicates the central concepts of the research, the subcategories, and the associated ideas, understandings and opinions expressed by the interviewees.

4.9.1 'Opening up' interview material

Analyising the coded data and identifying 'important' areas was achieved by the cross-referencing and matching of ideas and concepts discussed by different managers. Coded interviews were read and re-read, 'simultaneously allowing concepts to emerge from the empirical findings' (Schwarz and Nandhakumar, 2000: p.6). The common issues brought up by interviewees were given suitable labels and flagged under several category headings (Table 4.1) (Strauss and Corbin, 1990). At this stage one of the difficulties encountered was of how to categorise ideas under suitable headings. It was unclear as to the amount of overlap between certain ideas,
<table>
<thead>
<tr>
<th>KEY CONCEPTS (As defined by research aims)</th>
<th>KNOWLEDGE AND UNDERSTANDING</th>
<th>LEARNING</th>
<th>ENVIRONMENTAL ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUB-CATEGORIES (As designated by researcher)</td>
<td>Environmental Issues</td>
<td>Legislation and Regulation</td>
<td>External Communication</td>
</tr>
<tr>
<td></td>
<td>Relevance - why issues relevant or irrelevant</td>
<td>Suitability of legislation to SME operation</td>
<td>Sourcing - where information is taken from</td>
</tr>
<tr>
<td></td>
<td>Time - time constraints of management</td>
<td>States of compliance</td>
<td>Trust - which sources are used over others</td>
</tr>
<tr>
<td></td>
<td>Global-local distinctions</td>
<td>Regulators - comments on regulation and regulators</td>
<td>Threat response - why learn and when...supply chain?</td>
</tr>
<tr>
<td></td>
<td>Perception - of how business affects the environment</td>
<td>Risk - of legislative penalties on SMEs</td>
<td>Networking - with which bodies</td>
</tr>
<tr>
<td></td>
<td>Risk - of SME activities on the environment</td>
<td>Time - as a barrier</td>
<td>Supply Chain</td>
</tr>
</tbody>
</table>

| LABELS for ‘ideas, concepts, phenomena, priorities, etc.’ (Grounded in empirical data) | |
|-------------------------------------------|-----------------------------|-----------------------------|
| | Relevance - why issues relevant or irrelevant | | |
| | Time - time constraints of management | States of compliance | |
| | Global-local distinctions | Regulators - comments on regulation and regulators | |
| | Perception - of how business affects the environment | Risk - of legislative penalties on SMEs | |
| | Risk - of SME activities on the environment | Time - as a barrier | |

Table 4.1: Central concepts of research, sub-categories and labels used for Grounded Theory analysis
as some material could be categorised under several category headings. For example, when discussing communication with many companies, two of the common themes brought up were of 'trust' and 'sourcing'. Coding highlighted the sections of the interview where these issues were discussed, these were subsequently copied onto two separate files labeled 'trust' and 'sourcing', but it was unclear to what degree these issues informed one another.

Rather than comparing and contrasting material from numerous separate interview transcripts, therefore, analysis was carried out on collections of discussion pre-sorted into categories deemed most important by interviewees. Classifying these different issues into subcategories, it was easier to develop 'strategic ideas' about how businesses coped with the environmental pressures (Schwarz and Nandhakumar, 2000), and how managers prioritised the environment alongside other routines.

4.10: Chapter conclusions

The qualitative approach employed in this thesis was successful in addressing a number of important issues, and the scope of discussion generated during interviews suggests that it offered more rigour than was possible with a straightforward questionnaire approach. The methodology was responsive to the differences of opinion expressed by interviewees, and, through triangulation, was flexible enough to factor in views from beyond the sector and region. Collecting a similar quantity
of information through questionnaires alone would not have been possible. Coding and analysing were primarily concerned with bringing out and consolidating the key areas of the interviews on which to base arguments and generate theories. Due to the depth of discussion generated during interview, this was a much easier task to complete, as managers were encouraged to put across their views and opinions in an unrestricted manner rather than in the limited space of a questionnaire or telephone interview.

- After outlining the strengths and weaknesses of qualitative research generally, this chapter went on to describe why a grounded approach was best suited to this thesis. Semi-structured interviewing allowed a range of issues and problems to be raised by managers, and these shaped the scope and depth of discussion in subsequent chapters.

- An SME population was identified using four distinct data sources: Yellow Pages, FAME web-database, Council Business Directories and Trade Association listings. 38 firms were sampled from this population to obtain a mixture of different food-sector sub-groups, firm sizes and ownership criteria. The key determinant for sampling was the range of process activities conducted on site.

- Semi-structured interviews were conducted with all firms in their chosen location (on site); questions were build around the three central aims of the thesis: knowledge, learning and regulation
- Other actors in the regional and national food-sector were interviewed to triangulate the primary interviews with SMEs. Some shadowing of EPOs was conducted in the region. This was done to increase validity of the research findings and contextualise opinions put forward by SME managers more thoroughly.
5.1 Introduction

Establishing the quality and quantity of knowledge SMEs in the region have about environmental issues and regulation is a necessary first step in understanding attitudes to the environment in general. Including environmental protection and improvement as an integral part of industrial activity is an attitude that, at present, has still not significantly affected the way many smaller production firms conduct their business and organise their production activities. This chapter considers how knowledge relating to environmental best practice is sourced by the small firm, and to what extent it is trusted and perceived as relevant by SME managers. In so doing, a number of questions concerning the value and credibility of environmental knowledge are raised. For example, how do firms offset the risk of damaging the environment against the risk of non-compliance with regulations? Does the acquisition and operationalisation of environmental knowledge present the firm with procedural or cultural upheavals they are not prepared to make? Perhaps most importantly, do managers see the knowledge surrounding environmental improvement as credible and feasible in the way other technical/operational knowledge is?

Despite some of the documented success stories involving SMEs and environmental management (Sheldon, 1998; Robinson, 1998), many EU and national funding programmes for SMEs are under-spent (Smith, et al., 2000) and suggest a largely
 inactive' SME base where the environment is concerned. While the obvious explanation for this may be that many firms simply do not consider the environment a priority or have insufficient material resources to act, we must also be alert to the possibility that the knowledge they possess is either insufficient or inaccurate from which to make an informed choice, one way or the other.

Writing a chapter about environmental knowledge is not, however, quite as straightforward as determining what is and is not known. For such information to be of any use in explaining patterns of behaviour in the companies examined, clarifications first need to be made in how knowledge is actually defined, who is charged with collecting it, and how such knowledge is received and acted on by the people charged with knowing. One of the key questions this thesis asks is whether any lack of environmental awareness and action in the Yorkshire and Humber region is due to a deficit in knowledge - knowledge on both the environment generally, and on the specific environmental impacts of production in the food and drink sector.

On a general level, all firms included in the study professed to understand at least some of the environmental worries now surrounding industrial production. However, how their own operations fitted into these concerns was less clearly articulated. All the interviewees taking part in the research held at least some decision making authority in the company, and all had environmental responsibilities tagged onto their existing job roles in some way (see Table 5.1). As
such, the expectation was that all interviewees had some knowledge of environmental concerns, and understood why business generally was being asked to make a greater contribution to environmental improvement. The extent of this knowledge, however, and its suitability for making real improvements in SMEs working practices, needs examining in the context of who knows, how such knowledge is perceived and valued, where it comes from, and whether firms are prepared to act on it.

5.2 The perceived value of environmental knowledge:

One of the difficulties illustrated well by the comments of one bakery manager, is that of putting environmental knowledge across as a positive asset to profitability, and more generally as useable information. In other words, ensuring that the environment is a perceived as advantageous to the company and the decision-making members of the firm. Managers fulfil an important gatekeeping role for the flow of any information into the company, and how they interpret new ideas and concepts will determine the level to which the company ultimately engages with them. The credibility of the knowledge on which such improvements are ultimately based is also an issue. For SMEs to take their environmental responsibilities seriously, the information they are receiving has to convince them. Previous research (Anthony and Shane, 1994; Palmer, 1997; James et al., 1998) has suggested a growing tension between the pressure for environmental improvement through legislation and Government policy, and resistance to change because of
knowledge and information constraints (Holt et al., 2000). If possessing greater knowledge really does facilitate change, how credible is the environmental knowledge and information small firms are being asked to take on board at present, and what are the factors preventing its uptake? The following section looks more closely at the relationship between knowledge, attitude and behaviour, and makes several suggestions as to how knowledge may affect end behaviour.

5.2.1 Attitudes and behaviour

Social psychologists have studied the relationship between attitude and behaviour for many years, and as Eiser (1986) has noted, the more interesting research is that which claims to find little or no relationship between behaviour and verbally expressed attitudes. La Piere (1934) and Kutner, Wilkins and Yarrow (1952) are amongst the classic studies that suggest a much more complex and multidimensional relationship between intention and action. Many theorists, however, are still firm in their belief that attitudes are an important causal mechanism for certain kinds of behaviour (Eiser, 1986), but not in the openly deterministic manner assumed in many studies. The most widely accepted interpretation of attitude is the three-component structure, where, according to Rosenberg and Hovland (1960: 3), ‘Attitudes are predispositions to respond to some class of stimuli with certain classes of response.’ The three types of response suggested in this view are: affective (evaluative feelings and preferences); cognitive (opinions and beliefs); and behavioural or conative (overt actions and statements of intent). The three-
component model (shown in Figure 5.1) places attitude along the causal chain, intervening between observable stimuli and observable subsequent responses. As Eiser (1986) suggests, attitude is posited as both effect and cause of external observable events, and although it is unclear from this whether the same set of attitudes cause affective, cognitive and behavioural effects, the model demonstrates more clearly the compound nature of the process.

![Diagram of the 'three component' model of attitude](attachment:figure5_1.png)

**Figure 5.1:** Schematic conception of the 'three component' model of attitude (Hovland and Rosenberg, 1960)

For the most part, the business-environment literature does not take any position on this fundamental question one way or the other. Most evidently, as Newton and Harte (1997) observe in their review of business-environment literature, the lack of environmental commitment in many firms is seen as the consequence of having the 'wrong' organisational culture - in other words the wrong attitudes. Firms do not,
therefore, engage in environmentally positive behaviour because their attitudes tell them that the environment is not something they should be concerned with, or that they should simply act when legally bound to do so.

In his study of Spanish SMEs, for example, Manuel Anglada (2000) places heavy emphasis on the human cognitive process in determining the levels of environmental action within his sample. As Figure 5.2 illustrates, the transition from knowledge to behaviour is not direct. Perception and value, he argues, are intermediary stages in the development of environmental awareness within the individual, and from there, the firm. There should, therefore, be no real difference between a company learning about how to operate a new piece of machinery or integrate a new shift rota into their processes, for example, and integrating environmental management. Both require the learning of new procedures, both take time for people to learn the new rules, and both can potentially deliver savings to the company. But after describing the levels of the cognitive process, Anglada suggests that, '...each of these levels has its own difficulties and problems, and people do not move automatically from one stage to another' (2000: 62).

![Figure 5.2: Levels of the human cognitive process (Source: Anglada, 2000)]
The problem in conceptualising attitude and behaviour in this way is that it assumes a straightforward and linear progression from a certain way of thinking to a certain way of acting. The nature of the model accepts a causal progression, and that an individual moves sequentially through stages. The cognitive process is itself not fully understood, and many other external factors – the ethical positions of staff, market fluctuations – together with internal factors – available finance, corporate culture, etc. – may disrupt the linearity of this model.

Instead of moving through stages sequentially, starting with attitude and ending with behaviour, it may be more productive to consider the knowledge on which attitudes are based (whether that be scientific evidence, personal beliefs, etc.) as not being directly causal, but forming the basis of what psychologists (for example, Ajzen and Fishbein, 1977) refer to as a ‘subjective norm’, on which all people then behave differently. The subjective norm not only includes the raw material of decision-making, i.e. what the firm knows about the environment, law, regulation, etc., but also explains behaviour on the basis of how the firm believes others view their actions. So for example, management may speak of a desire to act in light of an environmentally sensitive procedure, but then continue to ignore the issue because they believe the supply-chain or the regulator are either unaware of the issue or do not care sufficiently to take action. It thus acknowledges that behaviour may not always be in line with openly expressed attitudes, and allows for a greater degree of selectivity in how the firm operates and prioritises its actions.
The idea of the subjective norm is one part of what psychologists refer to as the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1970, 1977; Fishbein, 1971), which suggests broadly that behaviour is determined by intention, and intention determined by attitude towards that behaviour. The best way of predicting behaviour, therefore, is not to study attitudes towards the issue, but simply ask whether the person intends to behave in a certain way (Hogg and Vaughan, 1995). The theory assumes, however, that human behaviour is both rational and always under the control of the conscious mind. Criticisms of the reasoned action approach based on these observations have led to the development of a theory of planned behaviour (TPB) (Ajzen, 1989). The TPB acknowledges that some behaviour is less under people's control than others, and gives credence to the idea of volition in decision-making. Perceived behavioural control is a much more significant factor in this approach. The perceived social norms, the decision-maker's attitude towards that behaviour, and the perceived behavioural control are all determining factors that shape behaviour.

In the field this volition was clearly displayed by managers in regard to how knowledge could be used to their benefit, and how other actors could interfere in this chain of causality. It seems to be not just a case, therefore, of possessing appropriate knowledge and acting out prescribed behaviour as a consequence. How these actions look – whether they are in line with normative beliefs and whether they can benefit the company – plays a role in deciding the practicality and usability.
of the company’s acquired knowledge. The following quotes show how local stakeholders’ impression of the firm can influence environmental policy in certain fields.

‘There are certainly things that we wouldn’t want to be seen doing...I mean, even though they’re environmentally dodgy and we wouldn’t get involved on those grounds, we simply wouldn’t want people to see noxious fumes coming from our stacks...there are residents nearby.’

(Interview 31: Medium-sized confectioner)

‘It’s always good to have people on your side...whatever you’re doing. I think our MD recognises that good behaviour – not just environmentally – will wash well with everyone down the line.’

(Interview 31: Medium-sized confectioner)

‘I think a lot of what we do here is regulation-driven to be fair, but even if the regulatory controls weren’t there or if we genuinely didn’t know that ... for example ... burning piles of tyres was environmentally poor practice, we probably wouldn’t do it out of our desire for a good image.’

(Interview 19: Medium-sized processor)

In these examples, managers concede to having the necessary environmental knowledge to avoid certain behaviour - i.e., the regulatory controls in place to prevent it. However, the decisions to act are based more on how good behaviour and poor behaviour are perceived by others. From the entire sample, over 60% of managers admitted that action taken had some connection to the perceived social norms governing how businesses were expected to conduct their operations. When confronted with a clear-cut issue, or with a question that allows for a clear-cut
answer, firms are quick to align themselves with an environmentally 'correct' philosophy, even though their behaviour may be rooted more in image or PR.

As the previous quotes illustrate, however, for firms of different size and sub-sector, the specific assurances about company image and PR, are themselves used to generalise more broadly on attitudes to environmental care in other areas. Questions regarding specific areas of environmental concern, for example, are 'rolled' into a discussion of the firm's environmental attitudes more generally. This suggests that where there is a certain level of knowledge in the company, SMEs are keen to use this as their basis for action in several different areas.

5.2.2 Are attitudes representative of a whole?

On certain levels, attitudes of respondents to different kinds of question seem consistent with their overall view of business and environment. For example, the notion of having a role to play in environmental improvement but going no further than compliance, may be put across by the interviewee in a number of ways, and questions regarding the firm's position on regulation, supply-chain and ethics will all support this view. But is it then acceptable to infer from this that the firm's attitudes to the environment are all as consistent as these views suggest? Eiser (1986) has asked whether affect, cognition and behaviour are separate components of attitude caused by the same stimuli or separate components caused by separate stimuli. A simpler way of putting this is by asking whether attitudes displayed

118
under interview conditions represent the sum of the cognitive process, or just one aspect. Using the *three-component* approach discussed earlier, affect, cognition and behaviour are all proposed parts of the attitudinal whole, and any analysis of a person's attitudes should involve measures of all three classes of response (Eiser, 1986). There may be discrepancies in professed attitude and subsequent behaviour simply because only one component of the three has been taken to represent the entire set of attitudes.

Prevailing attitudes displayed by interviewees on packaging waste or climate change, for example, can be expanded to cover other environmental issues affecting the SME. The responses given to questions on environmental action, for instance, may not represent one singular guiding set of attitudes from which preferences, opinions, beliefs and ultimately behaviour follow. With the time constraints of face-to-face interviews, it is difficult to determine whether the attitudes expressed in regards to one environmental issue apply simultaneously to the interviewee's other understandings of business and the environment (the methodological implications of this are discussed in chapter 3). The responses given to subjective questions regarding attitudes and feelings suggest that the answer may be no.

‘Overall I’d say that I am happy with the situation, simply because as it stands we don’t have to do very much. I agree that business needs to clean its act up generally yes, but I don’t know how far I’d be prepared to go unforced if you see what I mean.’

*(Interview 18: Medium-sized veg processor)*

119
'Effluent's one thing, but paying for climate change which I don't believe we have any hand in is outrageous. It has to be proportional; if the Government wants firms to act, it has to be fair.

(Interview 21: Medium-sized oil processor)

'We're not in a position to be an all-round environmentally friendly firm no, there isn't the necessity I don't feel for us to do that. That doesn't mean we couldn't care less where our wastes go...we obviously care to a point.'

(Interview 36: Small-medium bakery & food producer)

Attitudes towards different issues vary greatly therefore, and it cannot be assumed that attitudes expressed during interview are representative of the interviewee's full range of feelings towards a broad area such as the environment. Consider again Anglada's (2000) flow diagram (Figure 5.1) tracing knowledge through to behaviour. It is perhaps worth noting that there is an unstated assumption here that valuation is unidirectional. Perception is again important here, and managers will deploy their perceptive abilities to filter and prioritise certain kinds of knowledge over others, thus giving rise to the possibility of different valuations for different issues. Those attitudes displayed during interview may be the 'tip of the iceberg' in terms of what is actually believed about the environment, and what the firm believes its responsibilities are. Or, on the other hand, they may represent the manager's (and the firms') guiding values. Clearly, this question raises several others linking into the more substantial debate on the availability and sourcing of environmental knowledge.
This leads to an understanding of environmental behaviour based more around the subjective beliefs of individuals and different environmental issues, as to where that behaviour will lead – i.e., the consequences of the behaviour and the effect of such consequence on the individual. But as Petts et al. (1998) have suggested, there is also a relationship between behaviour and the ability to take action. While the feelings of empowerment or disempowerment experienced by managers are certainly an issue, a more immediate concern for small businesses where the environment is concerned, is whether there is risk involved and the nature of any such behaviour. There is an evaluative component to behaviour that may transcend attitude, and involves not only how the firm thinks others will perceive its behaviour, but what the consequences are of not taking appropriate action.

5.3 Perceptions of risk

It has been argued that lack of, or poor, information contributes to unexpected system failures, and with more information such failures can be avoided through rational action (Jackson and Carter, 1992). This would suggest that, insofar as dealing with environmental considerations are concerned, management could avoid causing undue environmental harm by simply increasing their knowledge and altering behaviour as a consequence. Rationality, however, is the product of perception, and increasingly studies of risk management and assessment are being predicated on deeper understandings of the perceptual process rather than of knowledge in isolation. The best-established results of risk research, as Mary
Douglas (1986) suggests, show that individuals have a strong but unjustified sense of subjective immunity. This sense of immunity is particularly strong in organisational settings where, with familiar routine, there is a tendency to underestimate the probability of bad outcomes. The activities of small companies are subject to a number of risks during the course of 'normal' operations, many of which are deemed acceptable in relation to the potential gains should the risks pay off, or losses should they not. Decisions involving product innovation and marketing, for example, carry risk in terms of capital expenditure on new equipment and whether such innovations will succeed in the market.

The knowledge that SMEs have to work with is interpreted in the light of past experiences, and in terms of current needs and interests (Buchanan and Huczynski, 1985). In a commercial, profit-seeking organisation, these needs and interests will undoubtedly be geared towards minimising disruption and maximising production and sale of produce. Individuals respond to the world as they perceive it, and the individuals making decisions in business environments are no different in this regard. One of the principal factors that guides perception, however, is risk, and where businesses are faced with an environmental challenge, a number of risk positions are brought to bear.
5.3.1 Positions of risk

Environmental risk affects SMEs in two main ways: risk of environmental damage as a consequence of certain activities or inactivities; and risks to their own operation as a result of either non-compliance with regulations or ignorance of requirements. The latter is the greater because it threatens a tangible negative effect on the firm, whereas the former may never be experienced directly. More than 80% of the firms interviewed claimed that they were aware of risks associated with poor environmental practice, and more than three-quarters of these knew the risks of prosecution associated with specific environmental offences. The following examples illustrate.

'We obviously wouldn't want to be caught in violation of our consent limits by YW, or for that matter our packaging obligations [...] where there's the risk of prosecution the board are usually quite tight...that's the key thing I think, prosecution, because it's more than just a fine, it's a status thing.'

(Interview 14: Medium-sized fish processor)

'I don't think there's much danger of us affecting the environment in the short term...like I say our impacts are minimal. It comes down to what the Government or whoever believe us to be affecting though, and that's where the problems lie...that's where we can get into hot water if we don't act.'

(Interview 25: Small potato baker)

'Regardless of what we think of certain laws and other things, we can potentially get into bother for not acting. So even if we think something's nonsense, more often than not we can't take the risk.'

(Interview 7: Small-medium processor)
'I think the best policy is to keep your head down pretty much. If you go shouting about what you've done to everybody, someone will catch up with you and you'll end up with a visit from Trading Standards, the HSE or someone else.'

(Interview 37: Small veg processor/packer)

These examples suggest that the perceived risks of being caught in violation of environmental law are considered more serious than the risk of causing damage to the natural environment. In the latter, SMEs are required to use a high degree of selectivity in assessing the potential impacts of their own behaviour. There are usually no material indicators that their actions are causing damage, and the perception of that risk is lessened by the fact that the consequences of their action or inaction are seldom experienced directly. The risks to the environment, therefore, are perceived to be subordinate to those associated with other activities. The risks of falling foul of environmental law are clear-cut; they are manifested in monetary fines and the potential for discrimination in the market place. With familiar activities that constitute the normal procedures of the company, there is a tendency to minimise the probability of bad outcomes (Douglas, 1985), which means that causing environmental damage as a result of processing and packaging food stuffs is not considered a significant enough risk to warrant voluntary action. This is a position adopted by all but 3 of the companies interviewed across all areas of the food sector.

With regards to how SMEs conduct their business, all staff are keen to emphasise the professionalism with which their firm operates. Managing routine and
procedure is an integral part of responding effectively to market fluctuations, and companies seem unwilling to admit that these practiced aspects of their business are capable of generating risk that falls outside that which they are normally used to dealing with.

'...I’m sure there are impacts associated with everything we do here, but you can’t be worrying about every lever you pull and switch you push all day. There may or may not be a consequence but...what do you do?

(Interview 28: Medium-sized drinks manufacturer)

'The management wouldn’t consider investing money in environmental improvements above what is legally required because frankly...it’s not a big enough problem. It isn’t staring us in the face with a problem.'

(Interview 27: Small-medium food processor)

'We’ve been in the business for a long time now, and when people start turning round and saying "your frying is causing this, and your condensation is causing that"...or things we knew were okay...your first reaction is to say, “no it isn’t!”

(Interview 24: Medium-sized fish processor)

On one level, these claims reflect little more than the fact that the risk of damaging the environment is not sufficient basis on which to spend money or alter routine. Monetary punishment is a more persuasive motivator than unsubstantiated claims that the environment is being damaged. As the above quotes seem to suggest, SME operations may or may not be damaging the environment, but if they are, is it a serious enough threat to warrant any action? The interviewees in the following quotes make this point with more force.
‘It’s a redundant argument, and I think it has more to do with meeting quotas than getting to the root of environmental damage. There’s no risk really, certainly not on a scale we could do anything about.’

(Interview 22: Small-medium confectioner)

‘Okay so there might be a risk that together with about ten thousand other food companies, we’d have some kind of impact...that’s not the kind of risk we could really do anything about is it?’

(Interview 37: Small veg processor/packer)

The sub-text contained within these observations is more problematic in that it questions the very basis of knowledge on which the social responsibility of firms is built. Implicitly, managers are questioning their companies’ need to contribute to environmental improvements when, as Wynne (1992) suggests, it is unclear how far they need to go in what is an ill-defined and potentially expensive direction anyway. The scientific burden of proof for environmental damage has become a matter of intensifying conflict (Funtowicz and Ravetz, 1990), and there is obvious reluctance for SMEs to modify their behaviour on the basis of ill-defined and ill-perceived risk. There is now greater urgency in policy design to address prevention of environmental damage rather than mitigation of existing problems (end-of-pipe), and striking a balance between costs, benefits and uncertainties is the hurdle which prevents many firms feeling they can contribute to environmental improvement in any way. As the focus of concern shifts further back along the chain of causality and becomes more distant from observable environmental effects, greater levels of
uncertainty are introduced in the investigation of possible causal links between decisions and environmental consequences (Wynne, 1992).

SME managers are reluctant to address questions of environmental concern with more conviction – whether or not they believe their firm is implicated – because the issues themselves are seen as distant from what goes on in the sector and region. The previous set of quotes suggests that there is an element of denial in responses to environmental criticism, and managers are looking for clearer linkages between their operations and environmental degradation. For the risks to be recognised and acknowledged by SMEs, knowledge and information on environmental threats needs clearer definition, and to be made more relevant to the food and drink agenda. Many issues remain largely invisible to management because they do not register as significant in relation to other risks and problems encountered during routine operation.

5.4 The invisibility of environmental problems

The tangible proof needed for firms to take the environment as a serious issue, and to convince them that risks exist, is not clear-cut. For firms operating in the food-sector, there are no cataclysmic system failures to be witnessed when the environment ‘goes wrong’, and the bulk of evidence for environmental damage comes in the form of nebulous scientific data that seems far removed from the activities of the food-sector. The following examples clarify.
‘...If you wanted to be picky you could say, “Where’s the proof?” couldn’t you? Show me exactly how we are damaging the environment.’

(Interview 3: Small fish processor)

‘At the end of the day it’s all a bit questionable really, I mean...who’s to say what we do here goes any further? It’s not as if you can trace these environmental problems back directly to specific industries.’

(Interview 37: Small veg processor/packer)

Within the sample, perceptions of environmental harm are often shaped by macro-scale environmental problems such as ozone depletion, global warming and sea level rise. These, and episodic incidents such as oil spills, ice-cap fragmentation and the occurrences covered more dramatically by the media, create a gulf between what is being asked of SMEs and what they see as attainable environmental goals. The Environment as a global concern also serves to deflect attention from the ongoing degradation of the environment at the local level, and the fact that global environmental problems have their causes at the local level. There are serious doubts expressed by management of small firms that their activities constitute any part of such global issues, and in some instances the risks involved are written off as extremism and scare-mongering by central Government.

‘When you look at it all there’s nothing really substantial there. Industry does cause environmental damage certainly, but to what extent? We’ll continue to do our bit by complying with everything, but I sometimes wonder whether there’s some kiddology going on...’

(Interview 32: Small-medium bakery)
‘It’s far from certain what our impacts are in a broad sense, certainly with regards emissions and global warming. I’d rather not be spending thousands doing things that may not be necessary before it’s conclusive.’

(Interview 23: Medium-sized drinks manufacturer)

‘I don’t think what we do here impacts upon the environment in any significant way to be honest. So it smells a bit sometimes and our effluent has got bits of fish in...’

(Interview 11: Small-medium fish processor)

From the companies interviewed, only 9 made any direct admission that their activities were contributing to larger scale environmental issues. The rest acknowledged having impacts, but were largely ignorant that activities could play into a larger cumulative effect. Such comments are echoed in work by Purvis et al. (2000), where the authors suggest that risks to the environment are doubted because of the lack of direct sensory evidence of climate change, or environmental damage more generally. Managers find it difficult to accept the ‘validity of the environmental rhetoric and expert claims relayed through the media’ (2000: p.8) because there are no direct indicators of the phenomena and of their implication in causing it. Health and Safety risks are evident in the here and now for SMEs, and their costs, if left unattended, could be counted in the health of employees and visitors. Similarly, product quality issues are an immediate and highly visible problem for firms: not only are the effects detectable in the products themselves, but the long-term financial prosperity of the company is put at risk by the cancellation
of customer orders, and delisting from major retailers’ supplier lists. Knowledge needed to rectify issues such as these is justified and ‘real’, because they have a direct and tangible impact upon the firm. Environmental problems, besides the direct causal indicators such as visible emissions to air and sewer, are measured remote to the site, and do not therefore place priority demands – or risks - upon the management of SMEs.

5.4.1 The immediacy of issues

This kind of attitude can be seen in another way. If firms do not see environmental issues as constituting a ‘clear and present danger’ that can be tackled through changes to routine, they are also raising questions of credibility in the threats and risks contained within current thinking. All of the staff interviewed suggested that what they are being asked to believe and act upon – the very knowledge on which environmental threats are based – is to some degree speculative and not entirely solid. The following quotes are critical of this in particular.

‘I’m a little bit sceptical myself. If half of the problems we’re supposed to be creating are real, there would be no way we could get round things – the legislation would be watertight, like it is with H&S. …It strikes me that we’re not really sure what effect all this is having.’

(Interview 27: Small-medium meat & veg processor)

‘They’re just making sure is all. There’s obviously a lot of doubt and uncertainty about these things (environmental problems), so they throw a load of under-
developed legislation at it so that if and when more is known they can say, “yeah, we had it covered...we’re working towards that...”

(Interview 27: Small-medium meat & veg processor)

Environmental knowledge is rarely perceived by them to be ‘real knowledge’, in the same way that information from their accountant, bank or trade association would be. For many managers the environment is an agenda that, even when formalized in legislation, seems highly speculative and transient. The boundaries of what they should and should not be doing to protect the environment, what they can and cannot do legally, and indeed what they are expected to know about their obligations, change frequently and are a source of confusion.

Equally, managers are quick to point out that, in their opinion, the organisations formulating and policing environmental policy are at times just as confused and unsure of the issues as the firms themselves. This adds to their scepticism, and raises the question of what tangible benefits environmental improvements could actually achieve, and further, what constitutes ‘suitable action’ on their parts.

‘It wouldn’t be so difficult if you could draw a line round it and say, “That’s the problem...that’s what you’ve got to work with.” But it isn’t like that with environmental issues is it? No one knows...including your environment people...quite where the problems start and finish I get the feeling.’

(Interview 12: Small-medium meat & veg processor)

‘Some of the advice you hear being banded around seems fair enough, but some of it makes you think that no one really knows what needs doing...either that or it changes a lot. If it needs doing it needs doing right.’
‘Look, no one’s saying the environment isn’t important, it clearly is. What we’ve got to ask is how we define the problem. We can only respond to the problem if we know where it starts and ends if you see what I mean. I’m pretty sure that no one really knows the answer there.’

(Interview 20: Small bakery)

In these responses, the frustrations that management feel in being asked to deal with environmental considerations on top of other problems are more clearly evident. What is a suitable and appropriate response for a firm to take? To whom does the firm listen for accurate information regarding environmental risk or improvements? What actually are the problems? Whilst valid to a point, such questions can shift the focus of the argument away from the fact that internal communication issues and the way the smaller firm handles new information may also be a reason for the confusion expressed. None of the firms interviewed in any size band admitted to having any active learning structures in place with regards to environmental improvements. As with health and safety issues, environment was not communicated internally as a distinct issue, and very few people were included in the ‘loop’ if and when an environmental issue became unavoidable. Chapter 7 looks at organisational learning in more detail, but knowledge deemed important for compliance with legislation was expected to be brought to the attention of the company rather than the company having to go and search for it. The attitude taken with the environment was very much ‘someone else’s problem’. This mindset extends to voluntary action also, and managers are firm in their beliefs that if the
Government want businesses to be greener (it is always the Government who are singled out as wanting environmental improvements), they will have to do more to educate and provide the knowledge necessary — smaller businesses should not have to search out environmental information.

‘If the Government wants small businesses to drive the economy, it can’t expect that to happen on one hand and be applying the brakes on the other. Green business is fine and I support it, but they’ve got to provide the incentives...provide us with what we need to make it work, whether that be money or information...’

(Interview 26: Medium-sized drinks firm)

‘If someone were to come round here one day a week say, for a month, and show me how to make my firm environmentally friendly or whatever, providing it didn’t cost money I’d go for it. They can’t expect really small companies to be doing all that stuff themselves...finding out, ringing round, digging...no time...’

(Interview 38: Small confectioner)

In terms of greater action then, questions surrounding the saliency and validity of environmental knowledge render many environmental problems invisible — or at a minimum, irrelevant — to individuals within SMEs. It prevents the environmental problems associated with food and drink manufacture from being tackled on a similar footing to other operational considerations. In this context, the company plays down not knowing enough, and not integrating information effectively, while stressing the weaknesses in information needed to act, its relevance, and failures of communication by information providers. That the environment does not ‘fit in’ very well with established procedures is the core of many arguments, and if the
whole area were clearly defined and mapped by someone else it would be more conducive to general uptake. Considering the general adaptability of SMEs so emphasised in management literature (Rothwell, 1986; Lefebvre and Lefebvre, 1993; Ghobadian and Gallear, 1996), these issues suggest that there may be other, more fundamental problems with encouraging uptake of environmental best-practice in SMEs.

5.5 Change and the requirement for ‘new’ knowledge

While these arguments provide the ammunition companies frequently use to attack pressure for environmental action, the consensus taken from interviews suggests that change itself may be a key variable causing the real problems for small firms, and that the culture of smaller manufacturing enterprises may veer away from embracing such change. Finding equilibrium between its own operations, its suppliers and customers, is the goal small firms must achieve if they are to succeed in the competitive marketplace (Murphy, 1996), and change, while a necessary component for product innovation, is a constant threat to this stability. Changes to the operating climate SMEs now work in - brought about by environmental and traceability demands - are forcing firms to re-evaluate many of the taken-for-granted aspects of their business functions (FDF, 2000 pers comm.). Waste and resource management are two of the clearest examples of this, and while the logic and cost-savings potential may be clear to management, the change itself still represents upheaval, and can thus be interpreted as avoidable risk. This may explain why,
even with best-practice initiatives and support bodies offering help to SMEs, there is still reluctance to interfere with routines that may have served the company well for many years. The following quotes suggest that routine and time-served methods are powerful barriers to the uptake of newer ways of working.

'I’m very much of the “if it ain’t broke don’t fix it” mentality I’m afraid, and things change fast enough in our business as it is, without trying to second guess what the environment people are going to be after from one month to the next.'

(Interview 7: Small-medium sauce maker)

'I think the real problem for all the environmentalists who want to see business doing more is that it can interfere with routine, with what err...how it’s been done here for years.'

(Interview 8: Medium-sized crisp manufacturer)

'We’ve complied with all the legal stuff so I’ve been told, and I think we are reasonably responsible in other ways, but the board have been around a while and they like to see things done the way they’ve always been done. They’re not old fashioned or anything...'

(Interview 13: Small-medium drinks firm)

Managing change is becoming an increasingly important topic in management academic literature (McAdam et al., 2000; Gunasekaran et al., 2000), and determining how change can be more effectively initiated, managed, implemented and responded to, are the challenges management science has set itself in recent years (Strickland, 1998). Including environmental goals in manufacturing enterprises requires changes at a number of levels: in the way firms operate their
process activities; how they view and conduct their relationships with external bodies; and more fundamentally in how they view their social responsibilities above and beyond making and selling. All pose some degree of challenge to the smaller firm, and resistance is perhaps an understandable reaction given the uncertainties surrounding environmental issues discussed during previous sections.

Reluctance to embrace new knowledge, and the change it requires, differs from industry to industry, however, and the company size in question. The smaller firms in the sample (those falling in the 1-70 bracket) showed more reluctance to accept newer knowledge associated with environmental change than larger companies. Tradition and history are important drivers with these firms, and all but three of the companies in this bracket believed that modern environmental management practices were in some way harmful to the productivity of the firm.

'It's getting into areas we're not comfortable in to be honest. As a small firm we're not geared up to that kind of shift in focus. I've already said that we wouldn't damage the environment intentionally, and other than that we don't have a lot of time for the idea we should be managing things differently.'

(Interview 3: Small fish processor)

SMEs from the larger size bracket, while in no way unanimous, could see how this kind of change would be beneficial not only to reducing overheads, but also as good PR. In larger companies there may be the necessity to appease parent company concerns, and with particular kinds of production in sensitive locations, maintaining good relationships with local residents may be the defining aspect of environmental
concern. In these instances change becomes practically useful, and the uptake of useable environmental knowledge can help the firm negotiate operational hurdles that may not, by their own definition, be environmental.

'There are several ways our own environmental management has helped us. It's enabled us to drastically reduce odour and noise from Production Line 1, and also just in the general respectability of the site. It isn't the prettiest of locations.'

(Interview 19: Medium-sized processor)

Problems, like other operational realities, are context specific, and their resolution depends upon the relative inconvenience they impose on the firm. The differences that exist across the sample between firm sizes and kinds of manufacturing may not, however, be simply a matter of practicality and resources. Willingness to accept new knowledge and change may be related to tradition and cultural normality - the accepted ways of doing business followed by the company for years. As the following section suggests, the nature of this relationship is complex, and can have a strong influence on the outlook of SMEs.

5.5.1 Ways of working and cultural norms

The problems facing businesses, both large and small, have been at the centre of rigorous study by management scientists for some years (Walsh, 1988; Banks and Taylor, 1991; Pineda, Lerner, Miller and Phillips, 1998). Broadly, as Huang and Brown (1999) note, organisational problems have been classified as those relating either to human relations and technical issues, organisational inputs and outputs, or
as strategic and operational issues. All three of these broad areas are implicitly concerned with organisational change, and in terms of understanding how demands for change affect the firm, each carry their own implications for the successful running of the firm. Environmental change is perhaps unique in that it requires modification to all three of these areas, and a cross-functional approach to solving problems. Research has tended to centre on companies’ response to specific problems however, rather than how the larger scale problems and issues - of which the environment is now one - affect the functioning of the company in its entirety. Again, there has been particular interest in understanding owner/managers’ perceptions of problems (and how these fit into the idea of a business culture), as much as the problems themselves, and how managers in different sizes and styles of organisation prioritise such issues (Sparrow, 1998; Wei Choo, 1998).

In parts of the region that have strong historical and cultural links to particular kinds of production - for example the fish-processing industry along the Humber Estuary and the smaller craft bakeries of South Yorkshire - modern, scientifically rooted knowledge appears to sit uneasily with established knowledge and tradition on how the industry works and how problems should be rectified. Acceptance of environmental issues, and more implicitly the knowledge surrounding environmental impacts, is suppressed by this cultural inertia in all the smaller firms in the sample (see quotes below). Implementing environmental solutions is often perceived from within industry as a threat to the cultural norms and routines of the employees and the firm, and resistance is based on these grounds.
Significant research has gone into exploring the nature of business culture(s) – or the cultures of business – and the diversity of cultural norms and values that exist throughout the economy (for example, McGregor, 1960; Bell, 1976). Classical thinking has long assumed that such cultures develop along 'tradition-informed' lines where individuals learn what is important to the company. In the food-processing sector, for example, high usage (and wastage) of raw materials and a reliance on packaging are frequently unquestioned norms, drawn from wider societal beliefs in the systems of production and consumption on which the free market is based. But as Paul Heelas (1996: 81) has suggested, 'recent developments of cultures of the self counts against the idea that people are content with performing role-ascribed duties and responsibilities within an established communal order.' Referring to cultures of the self, Heelas draws on much broader debates surrounding the nature of modernity (Geertz, 1984; Giddens, 1990; MacIntyre, 1985), where the focus is shifted from the collective to the individual. Here, the individual acts with greater autonomy than the organisation, and the development of business cultures – shared beliefs, ways of acting, etc. – must be founded on other principles than tradition informed goals and priorities.

The interviews with SME managers support these theoretical stances in some ways, but run counter in others. For example, some managers are forthright in their individualism, and the smaller management staffing of many SMEs makes this individualism all the more noticeable. On the other hand a great deal of the
language used by others supports the idea of a more collective business culture, implying collective beliefs, behaviour and problem-solving approaches. This language tends not to be sector- or even region-specific, however, instead emphasising SMEs' difference from larger producers.

'We've been here for over 70 years in one form or another...old habits die hard, and it's difficult for some people to start looking at the very basics of their business differently. They just want to get on with things the way they've always done.'

(Interview 3: Small fish processor)

'It isn't a case of not wanting to help the environment or whatever, it's just a case of being a small company turning over enough money to keep a handful of people in work. We don't want to threaten that by taking on more than we can deal with.'

(Interview 6: Small-medium proc/manufacturer)

'There are some things about running a small business that you just have to accept. Causing a few smells and producing wastewater or solids is one of those...it's the way these industries have always operated. You produce your product and you get rid of what you don't need. I can't see it changing that much to be honest.'

(Interview 18: Medium-sized spread processor)

'The thing people forget sometimes is that, with small processors like us, it isn't always possible to consider all those options you're mentioning. It's a case of knuckling down and getting on with it...the way we have successfully for twenty odd years I should add.'

(Interview 2: Small fish processor)
Amongst the smaller (up to 70 employees) SMEs, these attitudes of collective strength and solidarity are more evident. 'It's never been a problem, we've got by for years without,' and, 'we've never done this sort of thing before why should we start now?' are beliefs that, while infrequently expressed in such transparent form, are nevertheless evident in the subtext of conversations, and even in body language. This forms part of a wider questioning of the value of environmental knowledge to the firm, and the place of such knowledge alongside other business issues. Looking more closely, however, these resistant attitudes may serve another purpose more closely linked to the credibility of small-firm managers and of establishing trust in the management circles of such firms. Casson (1996) describes the nature of business enterprise as a 'nexus of contracts', '...the effective negotiation and implementation of which rests with the manager or managers who form part of the social entity called the firm' (quoted in Church, 1996: 138). He goes on to suggest that a key role attributed to a business leader (or leaders) is to introduce a corporate culture conducive to cooperation and teamwork and to successful business outcomes.

In terms of innovation and market demands, all parts of the food-sector accept the speed at which business can change, and as one manager commented, running an SME is akin to keeping numerous plates spinning. The adoption of such a defensive business culture would serve not only to buffer the SME from unwelcome change – and requirements for new and potentially disruptive knowledge – but it would also create more of a collectively opposed front among small firms, to which individual
firms can feel attachment. The front may be more implied than real, but in aligning themselves with a business culture resistant to environmental change, decisions and attitudes that run counter to environmental best-practice seem acceptable and can more easily be justified.

With the market dictating so much of what goes on in the sector, it is difficult for smaller firms to embrace environmental thinking when the market does not place any demands on them to do so. It is also challenging for SME management to fully understand that it may be possible to operationalise environmental improvement without a corresponding capital investment. Again, this is something that runs at a tangent to the way business is seen to work from within, and gaining 'something for nothing' may be an attractive but uncomfortable concept for many managers.

'It doesn’t matter how much new information you get, you’re still not going to get something for nothing, it’s still going to involve spending money somewhere down the line – that’s one of the golden rules of business you learn!'

(Interview 16: Small-medium processor)

Moving towards acceptance and use of environmental knowledge therefore requires SMEs to overcome a certain amount of inertia and engage with knowledge that, initially at least, is not seen as viable or useable within the cultural norms seen as necessary to the running of the company. But again, as interview quotes in the following section illustrate, these norms are not necessarily rigid unchangeable structures. By definition they are normal routine with which the firm has become comfortable. With the smaller SMEs in particular, norms tend to refer to ways of
working that are most convenient for the operator, and not always time-served ‘cultural traditions’ which cannot be challenged or improved. Effective use of environmental knowledge requires planning, and this is a process not widespread among the companies interviewed.

5.5.2 Knowledge & planning

Research focussing specifically on small businesses across a range of industrial sectors (Huang and Brown, 1999) suggests that lack of management experience, general management problems and the management of growth are the most common managerial problems. Marketing is widely acknowledged to be the most important activity in SMEs (McKenna, 1991), and as Romano and Ratnatunga (1995) suggest, it is critical for the survival and growth of all small firms. Not surprisingly, sales and marketing are the areas that consistently throw up the most problems for management – mainly, it could be argued, because these are the areas attended to with most detail, but in which SMEs have most trouble recruiting experienced management. Huang and Brown’s (1999) study suggests that the economic environment and organisational structure are the least frequently encountered problem areas for small firms.

The responses given during interview conditions are generally consistent with these findings. Marketing is a major concern for all food-sector SMEs, especially with the growth of own-label produce by the major retailers. Interviews with all firms,
especially the smallest of the sample, suggest a deeper-rooted problem for small enterprises in terms of environmental considerations. While companies admitted to experiencing problems in many areas of their operations, and dealing with them according to the priorities and resources available to the firm, planning was not treated with much urgency, and companies seemed happy to conduct their business in the here and now rather than plan for the future. Given what has already been suggested regarding the perception of risk and the 'invisibility' of environmental issues, this is not surprising. SMEs concentrate on the issues that challenge them in the present. This was most evident when companies were asked about their plans to keep informed about the requirements of environmental legislation, and changes to law.

'Yes we plan, but only with regards orders and output. I've not got the time to go mapping out how we deal with this issue and that – I pretty much accept whatever comes along. It's the nature of the beast really.'

(Interview 3: Small fish processor)

'We try to keep a pretty short-term outlook to be honest. It damages our chances of keeping afloat now if we're too occupied with next year or the year after.'

(Interview 10: Small potato bakery)

SMEs in the Yorkshire and Humber region – and indeed nationally - rely on minimal management staffing, and decisions taken on a range of issues are often done so by 'hands on' managing directors or operations staff with practical and financial responsibilities running concurrently. Chambers of Commerce across the region (Hull and York), and locally based Business in the Community programmes
have both suggested during interview that the people making the important decisions - so far as the environment is concerned - are often forced to do so without the necessary time to understand and factor in new kinds of knowledge. In other words, they often make these decisions without discussion with other staff members (either other management or shopfloor workers), and often without the information that could potentially improve the performance of the firm.

'We don’t have the sort of structure that would allow us to formulate an environmental policy...it’s treated on a first come first served basis most of the time. If an issue becomes a problem then we deal with it then.'

(Interview 12: Small-medium meat & veg processor)

'The MD tends to look after information like that. He’d pass it in to whoever he thought could deal with it I suppose, but that would be on a rolling basis if you like...when it was required.'

(Interview 11: Small-medium fish processor)

'There’s only so much you can do you know. If you’re asking me about information and whether we plan, then yes we do...but only with short-term goals in mind.'

(Interview 5: Medium-sized fish processor)

The identification of a situation as a problem depends upon a number of variables, which depending on circumstance can include: internally - the individual’s knowledge, motivation and experience; and externally - the situation faced, the geographical location, growth stage of the firm and industry sector. Murphy (1996) also raises these issues when he considers some of the possible reasons for stunted
business development amongst SMEs in certain industry sectors. While recession, political interference, and general shifts in the national and international economy can be blamed for the stagnation of certain kinds of firm, ‘...The evidence does seem to be weighted against the individual’ (p. 14). In particular, some of the charges brought against individual managers are their:

- Limited ability to manage financial resources
- Informal, fragmented and subjective control
- Parochial instead of internationalist outlook

As Murphy (1996) goes on to clarify, however, these criticisms are predominantly put forward as questions rather than concrete facts, and the high levels of success enjoyed by SMEs in the UK economy pays testament to the fact that many managers do manage effectively, and are finding the right balance. But there are different aspects to corporate planning, and the management responses from across the sample suggest that planning, as a strategic process, is generally short-term in outlook, and is not an ongoing feature of firms’ development. This is particularly noticeable among the smaller companies in the sample.

‘We have goals like all firms do, but the same processes and product runs have been running for years. We know what we do best, and we tend not to look that far forward that we lose sight of the here and now...’

(Interview 4: Small fish processor)
‘There are about sixteen different customers I supply regularly and I don’t really want more than that. I’m happy enough getting by as I am, I don’t have any long-term vision if that’s what you mean?’

(Interview 3: Small fish processor)

‘I would say that in the business we’re in it doesn’t pay you to plan in the way that environmental stuff would require. Things can change so quickly that you’d find yourself working on something that had already moved on. It’s really week to week.’

(Interview 10: Small potato processor)

The development of an environmentally proactive culture within businesses relies on planning at a number of levels. Most immediately, to rectify current impacts, firms need to plan an operational response to the environmental impacts they either need or want to address. This kind of response entails identification of problem areas, planning of suitable responses, and implementation of ideas. In the longer term, the adoption of an environmental management or environmental reporting system requires detailed planning and cross-functional cooperation between different actors within, and external to the firm. There may be the need, should accreditation under internationally recognised schemes be desired, for staff training and collaboration with external bodies.

Individual staff members may themselves play a large part in defining and upholding this cultural norm, and the attitudes of different staff members charged with environmental responsibility will contribute to the awareness and actions of the firm. Following this argument, the next section looks in more detail at the
individuals in the SME charged with knowing about the environment. It looks at why firms may appoint different managers to positions of environmental responsibility, and why such knowledge is deemed more suitable for these management positions. It also asks why the job of gathering environmental knowledge for the firm may not be seen as a relevant or even attractive proposition amongst managers.

5.6 Knowing about the environment

How the environment is interpreted (as either a problem or an opportunity) by different SMEs is reflected in the individual specialisms of the staff members charged with its care. The job roles of those managers interviewed for this research are detailed in Table 5.1, and shows wide variety in the positions charged with environmental responsibility. The environment is not seen as an issue requiring a dedicated staff member, and frequently there are two, three or even four different management positions given responsibility for environmental protection within the firm. As the table indicates, in some firms, environmental responsibility is shared between some or all of these positions.
Table 5.1: Management positions responsible for environmental issues/knowledge within sample.

(•) Indicates position interviewed.
* Indicates possession of environmental responsibilities

As well as indicating the importance attributed to environmental issues in a general sense, whom the firm appoints as its ‘knower’ of environmental information tells us
something about which aspects and areas of its business the firm sees as being affected by environmental issues. Far from being a clear-cut agenda the firm can tackle with using everyday business insight, the environment is seen by interviewees as a cloudy issue that cuts across different aspects of the firm's operations, and is therefore problematic to isolate and deal with as a single manageable process. For this reason it is not only difficult, but also impractical for an SME to appoint one person to look after the firm's environmental issues, if indeed such an appointment is made at all. More common is the sharing of environmental responsibilities amongst two, three or more management positions. Interviewees put forward a number of reasons for this: the following three sections look more closely at them.

<table>
<thead>
<tr>
<th></th>
<th>Specialist Personnel</th>
<th>Cost Burden</th>
<th>Not a desirable job</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-70</td>
<td>20%</td>
<td>70%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>71-150</td>
<td>70%</td>
<td>20%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>151-250</td>
<td>10%</td>
<td>60%</td>
<td>20%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Table 5.2: Stated reasons for spreading environmental responsibility over firm

5.6.1 Cost burden

Making the environment the responsibility of several managers, and even departments, has the advantage of spreading the cost of environmental compliance more evenly across the firm. As Table 5.2 shows, cost burden was the most common reason given sharing environmental responsibility across a number of roles. Where interviewees spoke of the cost burden of environmental
improvements, this also included the costs of paying someone to deal specifically with the environment. Sharing the workload saved firms the expense of payrolling a manager just to handle their environmental impacts. None of the firms in the sample had an employee dealing exclusively with the environment.

'There's no way we could afford an environmental manager, even if we wanted one.'

(Interview 5: Medium-sized fish processor)

'We couldn't afford someone just looking after environment issues. There wouldn't be enough work to keep them on anyway.'

(Interview 27: Small-medium meat & veg processor)

'The margin we operate on isn't big at all. There's no one employed here who just does one job, so an environment manager - even an engineering manager - would be out of the question.'

(Interview 14: Medium-sized oil processor)

Again, these justifications can be linked into earlier discussions on the perception of risk and the prominence of the environmental agenda (see 5.3 and 5.4) to the SMEs in the sample. While dealing with environmental concerns and information is an issue for the SMEs, it is not sufficient to warrant the expense of a dedicated staff member. The problems are not close enough to home for management and the risks associated with not having specialist personnel with specialist knowledge, great enough.
5.6.2 A reluctance to handle environmental issues

It is evident from responses that environmental issues are not perceived as being a particularly attractive issue for management to be involved with. Although in the smallest size bracket this was not an issue at all, managers in the larger size bands spoke of their irritation at being asked to take on board environmental issues in addition to their regular duties. Compared to the higher profile positions of marketing, product innovation and sales, anything carrying the environmental prefix was not really considered serious or exciting management responsibility.

‘...Because when it was introduced (the Packaging Waste Regulations) it came under the broad heading of “new legislation”...environmental legislation at that... so it was pushed under my door (Production Manager). I needed it like I needed a hole in the head, so I managed to palm some of it off onto the Distribution Warehousing manager.’

(Interview 23: Medium-sized drinks firm)

‘There comes a point where you have to ask what the important tasks are during your day: getting more business and increasing sales, or checking meter readings and printouts for the CCL.’

(Interview 15: Small-medium brewery)

‘When we realised that environmental issues and other health issues were going to play a part in regulation and the likes, the board decided we needed someone to look after that side of things. Guess who pulled the short straw?! [...] It’s okay I suppose, hardly exciting management responsibility mind...!’

(Interview 24: Small-medium fish processor)
The obvious reason managers would be reluctant to take on board this kind of responsibility, is that doing so would entail additional work and time on their behalf.

Time is at a premium in many small firms, and with managers already taking on two or more roles within the firm, the additional workload of environmental management is seen as either too much, or not worth the payback. In some instances, however, there were more self-centered reasons given for not wanting to be involved. Where orthodox duties such as marketing and sales carry clearly demarcated indicators of success, getting involved with environmental issues made some managers feel the work either was not yielding results, or that it wasn’t being noticed by higher management. Two managers working for the larger of the firms in the sample, put forward wholly personal reasons for not wanting to be solely responsible for collecting and using environmental information. For them, what the environment could do for their careers and promotion prospects was not considered great enough to pursue the issue with any real enthusiasm.

'We have a bit of rivalry sometimes amongst the management (laughs). There isn’t much in the way of promotions in a firm like this, so if you want to get ahead you have to impress the right people. There are only certain positions that you can do that from I think – that’s why I think that looking after environmental issues isn’t high on people’s priorities from career perspective.'

(Interview 12: Small-medium veg processor)

'I know that this is a bit cynical, but it isn’t like people are queuing up to be environmental managers. And that’s strange because a lot of what managers do is try to reduce costs and overheads, which is?...(asks question)...reducing water
use and power and so on... So they are environmental managers. It’s just that they don’t like being called that – it isn’t impressive enough.’

(Interview 27: Small-medium food processor)

The language used during these discussions suggested that, more than this, environmental responsibilities were looked at by some staff as almost janitorial in nature. The collection of data, monitoring of waste streams and power usage, for example, was classified more as non-essential maintenance than managerial responsibility. Responses to having it made part of daily routine were thus not always positive, and suggested another reason why a firm may try to decentralise responsibility to several managers. The Climate Change Levy and the Packaging Waste Regulations, for example, both require significant staff hours for the collection and presentation of company figures. This is time seen as better spent on more core activities.

‘I think a lot of what’s involved with the environment – where companies are concerned – is number crunching, and it can take a while. Without wishing to sound ungrateful, I’ve got better things to do with my time.’

(Interview 9: Medium-sized fish processor)

5.6.3 Specialist personnel

Because environmental improvement may stretch across several areas of a firm’s activities, many of the responsibilities involved need process-specific knowledge. For this reason, it makes sense for management to spread these responsibilities over staff who work in different departments, and who are more knowledgeable with the
processes concerned. In one small-medium sized operation employing 180 people, five different staff members had environmental responsibilities. As the interviewee commented, the responsibilities were not heavy, but it at least minimised the additional workloads one or two people would have had.

Other companies in the sample suggested that spreading the environmental ‘load’ amongst existing staff was beneficial in other ways. Installing one specialist manager to oversee environmental issues and improvement company-wide could potentially cause unrest in certain circumstances. As they observe:

‘The difficulty there (appointing an environmental manager) would be that they’d have to understand how it all worked... all aspects of the business. You couldn’t get someone like that going from department to department making changes without causing some resentment. I think it’s better done by people in that department.’

(Interview 8: Medium-sized veg. processor)

‘It's got to be done by several people, and I'll tell you why I think that. You get Mr X from production waltzing all over the plant making changes, or even just asking people for figures, it's going to get some people's backs up. They won't like others butting in on what they're supposed to be doing - even if it is in the best interests.’

(Interview 5: Medium-sized fish processor)

And in a similar way, appointing an environmental manager or consultant from outside was seen as undesirable external interference, even if it meant removing time-consuming practices from the core staff of the company. In the sample, only
three of the largest firms and three of the small-medium firms were currently using an external consultant. The rest believed all issues could be handled by utilising in-house expertise.

'...We wouldn't want to go down that road, no. It's introducing more confusion into the whole thing. You've not only got to worry about if they'll do any good anyway, but also whose toes they'll step on.'

(Interview 11: Small-medium fish processor)

Examples would be in improving efficiency of factory pipework or separation of paper and card waste streams for recycling. For this reason, many SMEs believed that sharing the environmental 'burden' was an easier way of tackling the issue than trying to designate one person to deal with everything.

'We all do a bit, that's the only way to keep 'em all happy. I look after the effluent side, the shop mainly deal with packaging waste, and I think Climate Change is looked after by the MD.'

(Interview 16: Small-medium veg. processor)

5.6.4 Staff holding environmental responsibility

Amongst the small-medium and medium-sized SMEs, the management positions most closely tied into environmental responsibilities were those of technical manager, production manager and operations manager (see Table 5.1). With those firms employing fewer than 70 people, the owner or general manager assumed general responsibility. The job role of the interviewee was
found to have some bearing on the perceptions of environmental damage the firm caused, and also to the kind of environmental knowledge possessed. Clearly, the familiarity with environmental issues shown by interviewees is controlled by many factors not necessarily reflected in this study (education, access to environmental information from other sources [media, press, etc.]), and does not always reflect the attitudes of the firm at large. But there were clear differences in how management from one area of the firm, for example production, perceived environmental issues, to how management from other departments perceived them.

For example, views expressed by technical managers were swayed by considerations centered on compliance, and the firm's capacity to absorb environmental improvement into its day-to-day running. Adapting the plant's equipment and infrastructure to support environmental change was a prime consideration, as was the need to develop more specific engineering solutions to plant-wide processes. Production managers talked of environmental issues as very much a factor with the potential to disrupt production targets and customers' orders. Changes to production routine and staff roles brought about by environmental change were of primary concern here. Operations management, board directors, and in some cases single or joint owners tied their knowledge of the environment, and their understanding of legislation, to effects at the macro scale. For example, they were more concerned with effects on overall performance brought about by the CCL and the PWR.
'From my job’s perspective, environmental improvements mean taking things apart and putting them together different, if you see what I mean. It’s really just a different way of improving efficiency.'

(Technical manager)

'My main concern is making sure productivity remains high...where we need it. Environmental improvements can come in different guises, and some are just tweaking things, but I have to consider the bigger picture and look how any major changes would affect our ability to meet orders.'

(Production manager)

'So long as we're legal...so long as we're legal, that’s my main worry! As an owner you have to make sure everything’s covered, because the buck stops with you. When people talk to me about environmental improvements I always think of legal obligations.'

(Owner)

Time constraints during interview meant that no detailed comparison between kinds of action taken could be made, but these readings suggest that environmental knowledge is interpreted differently across firms of varying size, and can therefore influence different kinds of environmental response by SMEs. All positions mentioned had, in some capacity, either direct authority to spend, or an ability to influence the spending of the firm. These different readings of knowledge and its use are therefore an important gate-keeping factor in environmental action.

In terms of actual environmental benefit, these observations suggest that it is easier for the higher management of SMEs to spread the environmental workload across a
number of departments and a number of managers. In so doing, the firm avoids additional expenditure required for dedicated environmental personnel, reduces any internal wrangling over whose responsibility such matters are, and deploys the in-house expertise from each department as and where required. This said, the fact that no interviewee voluntarily spoke of the benefits of this form of management, suggests that this particular model of shared responsibility may not be optimal – both in terms of the environment and staff satisfaction.

The final section of this chapter considers questions of trust, and the sourcing of environmental information. Where SMEs turn for accurate information, and whom they trust to deliver information to serve their business's best interest has an important impact upon environmental awareness and motivation. The section also makes suggestions as to how information can be more efficiently transferred to SMEs in the region.

5.7 Sourcing environmental knowledge

The sources of knowledge that SMEs use to further their understandings of the environment are as yet poorly mapped and understood. While there seems to be wide agreement on the many different sources of information available to SMEs, and the kinds of help they offer, few studies have looked into the actual selection processes used by companies when information is required. Where an SME has a need for information, how easy is it to identify and select an information provider,
and then retrieve the information – and indeed, how visible are these information sources? Gray et al. (1998) have suggested that the way firms monitor the environmental agenda may itself be important in determining levels of compliance. Their work suggests that, through poor monitoring, many British firms are unaware of both the number of organisations that can offer help, and therefore the range of issues likely to affect them. But equally, as representatives of local Chambers of Commerce have suggested (pers comm., 2001), criticism should not be leveled solely at SMEs: the structure of information provision is not ideal, and many companies experience confusion and misdirection if they seek information on environmental best practice. Time and convenience clearly have a role to play here, and many managers of small firms argue that they have neither the time nor personnel to conduct effective searches for environmental information - or organisations capable of delivering that information - on a continual basis. This assumes, of course, that there is sufficient impetus for them to monitor the agenda at all; information in many firms is taken up as and when mandatory legislative requirements dictate.

Given these factors, it is perhaps more pertinent to ask: when such needs arise, to which sources of knowledge do SMEs turn, and of these sources, which do they trust to deliver information that is proportionate and fitting to their requirements? Over three-quarters of the SMEs interviewed (that had at some point sought information of an environmental nature) claimed to have experienced confusion in either the information content itself, or in the process of obtaining that information.
It would seem a logical assumption that if firms have negative experiences when seeking environmental information with which to comply with mandatory requirements, they will be less likely to involve themselves in voluntary initiatives and environmental improvements that go beyond that which is required by law.

Recent research on environment-oriented networks and alliances (see special issue of Greener Management International, 2000, Issue 30) has suggested that while this may be the case, there is a strong argument for involving intermediate organisations in the provision of environmental information, rather than entrusting this role solely to Governmental bodies (Wolters, 2000). Interviewees' responses to questions of knowledge and learning were in line with these views, and firms expressed more enthusiasm for dealing with smaller bodies that were closer to the business community than 'faceless' national organisations. Before looking more closely at these preferences, however, the following section maps out in more detail the kinds of environmental support available, and asks whether this support is adequately coordinated and structured.

5.7.1 Environmental support – confusion and overlap

Holt et al. (2000) have observed that, to a certain extent SMEs face a dearth of accurate information for specific requirements, but at the other extreme also face information overload. There are numerous organisations nationally claiming to provide SMEs with environmental support, and ways to capitalise on the 'win-win'
thinking that is generally used to champion environmental causes among business. Long and Arnold (1995) have suggested that insofar as facilitating change, there are a number of ways SMEs can collaborate and organize to access information more effectively. These include partnerships, where a group of firms collaborate to improve environmental performance; leaders, where specific companies act as figurehead bodies that lead by example; and experts, by which specific issues are addressed by people or groups with focused knowledge on a technical or procedural point. However, in terms of information provision the picture is more complex, and while these classifications may be useful to companies in visualising how change can be realised, they still face an uneven coverage of information, both in terms of what their particular requirements are, and how they can best be addressed.

The Yorkshire and Humberside region is symptomatic of this, and many organisations whose specialisms lie in diverse areas are claiming to offer small firms access to relevant and useable environmental information. From the outside, this would seem to be an efficient system, with a multitude of organisations with diverse skills and knowledge, providing advice on a multitude of issues. The trade association representing fish processors in Humberside sums up the current situation as muddled, however:

'We've got numerous companies who try to do their best where the environment is concerned. We can try to help them with some things, but what you find Andy is that new people will come in, and they'll be phoning Business Link, the
Council, consultants, YW... trying to find out what the situation is with current regulations on some issue or another. It's a bit muddled at the moment.'

(Trade Association interview)

As will be suggested later in the chapter, the degree to which these sources are integrated and provide coordinated support for SMEs may at present be limited. Although, as the trade association representative went on to clarify, while the information is 'out there', many organisations either do not articulate it clearly enough, or are unsure of where legislation starts and finishes for certain companies. Their policy is therefore to provide information in excess, and leave the firm to sift through it themselves.

'I think it's sometimes easier for people to bombard you with too much rather than not enough. The problem then comes in deciding what's important, and that's where some firms really need the help.'

(Trade Association interview)

SMEs that had sourced environmental information used a number of organisations for that purpose (see Table 5.3). Although this would initially seem a favourable situation, it is one that has been questioned not only by trade associations, but also by SMEs themselves. These questions centre on the fact that, at present, there is an overload of information, and even Business in the Environment - an information provider itself - comments that there is a 'confused market' for environmental information (BiE, 2001). It would seem that the range and scope of support bodies is itself the problem. The involvement of organisations as diverse as the Environment Agency, the DTI and local Chambers of Commerce, for example -
bodies with whom SMEs may have had contact for a variety of prior reasons – would seem in some ways to muddy the water with regard to the kind of help they are perceived as providing. Speaking of business support in more general terms, Moran (1993) notes that SMEs find the provision of support generally very confusing for the end-user as there is a great deal of overlap in services provided by various organisations.

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Kind of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment Agency</td>
<td>General, packaging, emissions</td>
</tr>
<tr>
<td>Local council</td>
<td>Noise, smells</td>
</tr>
<tr>
<td>Yorkshire Water/Anglian Water</td>
<td>Effluent, water use</td>
</tr>
<tr>
<td>Trade Association</td>
<td>General legislation</td>
</tr>
<tr>
<td>Environment and Technology Best-Practice Programme</td>
<td>Specific projects, energy efficiency, new technology</td>
</tr>
<tr>
<td>The Carbon Trust</td>
<td>Energy efficiency</td>
</tr>
<tr>
<td>DEFRA</td>
<td>Food legislation, general environment</td>
</tr>
<tr>
<td>DTI</td>
<td>Health and safety</td>
</tr>
<tr>
<td>Business in the Community (Environment)</td>
<td>Minor general issues</td>
</tr>
<tr>
<td>INCPEN</td>
<td>Packaging regulations</td>
</tr>
<tr>
<td>Chambers of Commerce</td>
<td>All</td>
</tr>
</tbody>
</table>

Table 5.3: Sources (unranked) of information used by firms in the sample.

This sentiment is echoed in the fieldwork conducted for this research where, from the entire sample, 31 interviewees (over three quarters) admitted that help bodies they had contacted did not provide the kind of information they were looking for.
'We don't get a lot of information on environmental impacts because we don't need it, but when you start looking for stuff (laughs) ... you struggle to piece it together really. People say the same things in different ways. Very confusing.'

(Interview 26: Medium-sized drink firm, Pontefract)

'A lot of different people say the same thing. It's a bit of a waste of time.'

(Interview 12: Small-medium veg firm)

'It's quite general advice that's on offer I get the impression. Different groups can say pretty much the same things but coming from different angles – it's not so much confusing as a bit bewildering once you look into it...why have all these organisations and phone numbers?'

(Interview 4: Medium fish processor)

Reproduction of information, while stressing the broad importance of environmental issues to SMEs, detracts from the individual specialisms of key information providers by clouding the issues and devaluing the overall system. Recent research (Shearlock et al., 2000; Hooper et al., 1998) has suggested that SMEs will probably only utilise an environmental advice organisation on one or two occasions, if at all, and emphasising the quality and validity of messages is therefore crucial. In line with Palmer's (1997) observations, interviews suggest that managers felt the need to reach out to an external body only when prompted to do so by legal requirements, the influence of a parent company, or the result of some other external stimulus. When it does happen, therefore, advice given needs above all to be realistic, practical, but also within what the firm believes is achievable with current resources.
5.7.2 From the general to the specific?

The difficulty for information providers therefore is that, while there is obviously a need to raise awareness on the general level, and encourage SMEs to recognise environmental improvements as relevant, there needs at the same time to be differentiation in the kinds of knowledge and learning on offer. There is a need for capacity building not only in the actual quantity of information offered, but also in terms of the applicability of environmental help given by different sources. Shearlock et al. (2000) have suggested that, although there is now a plethora of initiatives from local and central government, plus a range of NGO support schemes, evaluation of these initiatives indicates that they have failed to provide specific solutions to environmental problems. These criticisms are not only voiced by company representatives, however. Many of the support bodies to which SMEs are expected to turn for this very help are also keen to see improvements to how this support is structured and made available.

‘...While I can try and give the best advice possible to anyone who rings, I don’t have much control over what others say (other information providers). If you’re asking me to comment on the whole system, there’re too many holes in it – it needs simplifying.’

(Advisor, Business Link, Leeds)

‘I think we should be the number one point of contact for businesses personally. It would make sense, us being the Agency. That way you’d get rid of some of the more ‘dubious’ voices out there giving advice that may or may not be in line with what we’re requiring for regulations.’
'We don't get asked that often for information about environmental impacts to be honest. When we do, I try to re-direct them to someone more qualified. The fact they're coming to us at all though makes you wonder how easy it is for them to find the right kinds of help!'

(Advisor, Chamber of Commerce, Hull)

As well as questioning the efficiency by which information is made available throughout the region, these criticisms also cast doubt on the integrity of the system as a whole. Where managers show frustration at not knowing which organisation to approach, the help bodies themselves comment on the unsuitability of the current system. Across Europe, the United Nations Environment Programme (UNEP) is looking closely at the capacity building possibilities of national conservation strategies, sectoral environmental action plans, and other policy initiatives aimed at promoting the sustainable use of biological resources (UNEP, 2000). The questions they are asking about the efficiency of such information systems may equally be applied to much smaller scale systems in the context of local information provision. In no particular order, these include:

- Which environmental issues are the highest priority?
- What information is required to support decisions on these issues (content)?
- What long-term information and monitoring programmes are required?
- Which audiences require information most urgently & how to reach them?
- What are the main capacity building needs?
Based on the responses of organisations interviewed, few of these fundamental questions seem to be addressed in any concerted way by the environmental information providers serving the region, and at best, support looks to ‘whitewash’ individual sectors by providing generalised solutions for specialised problems. Earlier research by Hooper et al. (1998: 51) on Northern Ireland’s business support network suggests that, ‘support organisations would have much greater impact if their efforts were focused on providing individually tailored solutions to the specific needs of smaller companies.’ There is a gulf between general advice – such as that needed to keep firms legal – and more targeted advice designed to meet the specific needs of the food-sector’s activities. Firms that had used consultants, for example, were pleased with the familiarity shown by the staff and the highly focused nature of the help.

‘When we spoke to a consultant a while ago about reducing our overheads, the first thing we noticed was how clued-up he was on how we produce...that’s what you need if you’re getting help I think, someone who can talk in detail about what you make and how it all works, rather than just getting some information pack from the council.’

(Interview 9: Medium-sized fish processor)

‘You really need people who have a history of production experience or technical experience to help you. There’s not much they can do for you if they don’t have that. We used a consultant a month or so back and they were spot-on. I think you’d struggle to get that level of expertise from any other help organisation.’

(Interview 21: Small-medium oil processor)
Consultancies are clearly only an option where the firm has sufficient finances, however, and help with this degree of specialism needs to be made available for all sizes of firm regardless of their financial position. For the majority of the SMEs interviewed (only three Small-medium and three Medium-sized firms had used consultants), even if a problem were deemed worthy of action, hiring specialist external help was not a credible option. The perception from within industry also suggests that to be considered credible, information providers must appreciate the intricacies of the food production system as a whole, rather than just the obvious cost cutting measures carrying environmental benefits. Information providers utilising ‘time-served’ engineers or production managers, can therefore deliver messages carrying more validity - and with greater urgency - than general information providers. Achieving a balance of information provision, therefore, that is on the one hand general and simplified enough not to confuse management, but on other detailed and focused on the specifics of the business, is essential.

Managers who had not used ‘bought in’ consultant help, and had attempted communication with environmental support bodies complained as to the levels of practicality of the advice available. Hooper et al. (1998: 97) have argued that help needs to go further than ‘poorly targeted messages of environmental awareness’ towards ‘higher quality, bespoke environmental solutions for SMEs.’ In other words, rather than sector-wide initiatives, support organisations need to be able to provide detailed technical and operational advice more closely tailored to the needs of individual companies.
'We went through a phase a year or two back where we tightened up our housekeeping, and that covered a lot of things environmental: water use, power use, and raw materials… We got in touch with the Council and the local Business Link offices for advice basically, but what we found was that they could only give very general advice, the kind of thing we really knew already.'

(Interview 18: Medium-sized producer)

'I think a lot of the people who say they can help firms with their environmental impacts don't really know the insides of how firms run. They'll say, "Fit triggers on your hosepipes," and "make sure your lights are off at night," that sort of thing. But nothing technical.'

(Interview 28: Medium-sized drink manufacturer)

'Yes, we have approached people in the past for help. Help to reduce our costs I should add, not specifically environmental. It was a bit of a waste of time to be honest – no one suggested things that we didn't already know or hadn't already tried.'

(Interview 32: Small bakery)

These comments suggest that as well as admitting a certain amount of confusion as to whom to turn, the information available is of a highly general nature and not targeted at specific impacts or points of concern within individual companies. The reality of how many small firms engage with the environment is that they relate it closely to individual parts of the process rather than as an overall quality issue, and any such improvements are considered as financially driven rather than environmentally. So for example, water minimisation and reducing energy use, as well as being important environmentally, are high profile cost-cutting areas amongst the more pro-active firms, and a clear strategy on how to target these areas is what is
required from information providers. Some of this information is available either on
the Internet or by post, but at a general level it is difficult for managers to isolate a
clearly targeted message amongst the plethora of environmental best practice,
awareness and management schemes currently in circulation.

'As a firm we receive loads of junk mail and fix-it-quick pamphlets, and some of
those are marked as relating to environmental improvements. The latest trick is to
send you a free CD with a taster of how they can save you a mint…'

(Interview 12: Small-medium veg/meat processor)

Again, it may be the case that by making environmental solutions more
approachable and more 'readable' economically, information providers can promote
the environment as a more integral aspect of SMEs’ operations rather than an 'add-
on' or fringe issue.

The previous collection of examples highlight these problems more acutely, and
shows how, 'on the ground', SMEs are steered and even constrained by rigid
definitions of what constitutes help and how action is defined. The way
environmental improvements are presented to companies at the outset is important
in helping define how firms look at the issues during future encounters. Despite
having economic pay-offs, they are still seen as a waste of money for companies
working on tight margins. The manner in which such knowledge and help is
'clothed' is perhaps crucial to getting it recognised by senior management as a
viable option.
While it may be true that the more a company digs the more potential information it unearths, none of the firms interviewed admitted to finding this a problem one way or another. Environmental information beyond what is required by law is not deemed that important. Again, none of the companies interviewed had much to say on the specifics of their information gathering activities, and were occasionally at a loss to explain how information or expertise relating to environmental improvement had arrived within the firm at all.

This section has suggested that, on a general level, SMEs are unlikely to reach out themselves for information (Palmer, 1997), and may receive knowledge through ‘trickle down’, the interviews suggest that where there is a choice, managers do exhibit preferences in whom they contact. This suggests that, in making decisions, trust may become an issue. There has as yet been no mention of trust, and whether the sourcing of information is based in any way based on how much trust SMEs have in an information provider. During the interviews, food-sector firms in the region supported this suggestion, indicating that while they viewed compliance as important, probing for environmental information beyond these requirements was not considered important. Having established that contact between SMEs and information providers is limited, and involves no more than a handful of organisations, another question that should be asked is ‘whom do managers trust to deliver information on which they are prepared to act?’
5.8 Trust and the providers of knowledge

Given the low levels of interest shown in environmental issues by firms interviewed, it is perhaps surprising that some SMEs do in fact express preferences with whom they interact for information. One of the reasons for this may not necessarily be found in the nature of the information, but in the perceptions the firm has of that particular information provider. Among the smaller enterprises interviewed, this view is predicated on the fact that the knowledge required to improve environmental performance – and in some instances the improvements themselves - is not always seen as being in the best interest of the companies involved. A lack of trust is perhaps the most accurate way to describe this situation, and with environmental improvements supposedly offering increased performance and competitiveness to SMEs, gaining trust is becoming an important component in securing overall improvements. Again, there are issues of relevance in question here, and companies that are struggling to remain competitive suggested that environmental initiatives are more relevant to firms with the time and resources already in place to deal with them.

‘If you’ve got the time and money to worry about the environment then good luck to you...we’ve probably had our worst few years for a while now. I know people say that being environmentally friendly can save you money, but just worrying about it is a distraction we can do without to be honest...’

(Interview 10: Small potato processor)
'My view is that if times are hard you have to put all your resources into surviving. If that means neglecting the environment for a while well...I'm sorry, but that's the way it has to be until you're in a position to worry about other things.'

(Interview 30: Medium-sized bakery)

Equally, feelings of disempowerment are preventing firms from achieving what they feel are inconsequential improvements. These are discussed in more depth in the chapter on environmental action. Information from the 'outside', and in particular from Government sources, is subject to close scrutiny due to the perceived lack of understanding of small business issues by central Government. Among some firms interviewed, the attitudes towards business-support in any form were doubted because of the lack of tangible results over recent years.

'The problems we have are to do with where we are you see...there's a lot of poverty in the area, people without jobs, businesses moving out...Government hasn't done much to help to be honest, and if they came along with a huge pot of money I'd still be dubious.'

(Interview 23: Medium-sized drinks firm)

'I think listening to the Government's advice about anything is fine so long as you remember they're not talking directly to you...the small business...they're talking mainly to big firms. Those are their priority.'

(Interview 19: Meat and veg processor)

'I know it's a bit cynical but I certainly don't trust the Government to act in the interests of the industry generally, so I wouldn't expect them to provide reliable information on specific things like environment or quality.'

(Interview 36: Small-medium bakery & food)
Government-industry relations have traditionally been built on shaky ground, and as Wilks and Wright (1987) have suggested, virtually every important facet of the relationship has been subject to commentary and criticism (Lindblom, 1977; Steel, 1983; Young, 1984). There is scepticism to the suggestion that ‘external’ information can improve the economic performance of SMEs, and more generally, that, in the current climate, firms need to know more to achieve the same. But the most frequently raised trust issue is historical, and centres on the differences in knowledge requirements now and ‘back then’. Not only are companies now expected to know more, but prior to the emergence of EU regulations and the move towards stricter mandatory regulation, the system was seen as being simpler, and in the eyes of company managers, more conducive to doing business.

‘I’ve been operating on the docks here for over 40 years give or take...back then everything went into the river, liquids, solids...Now with your EU regulations and all the rest, you need to know the ins and outs of everything. It used to be just a case of do what you want until someone said otherwise.’

(Interview2: small fish processor)

‘The problem is nowadays that you’ve got so much information telling you what the “problems” are, how the climate’s changing, how clean the rivers are, that you don’t really know anything if you get what I mean...it’s just bits and pieces. Our industry has got on without all that for decades.’

(Interview3: small fish processor)

Responses that took this tone were made by older managers/owners who had been in the business a long time. For them, ideas of environmental improvement and
awareness are perceived very much as the intrusion of national and international government into local affairs, and consequently as a threat to traditional modes of business. On Humberside for example, the local economy has suffered at the hands of international legislation for many years\(^2\), and attitudes to this kind of change may, perhaps not surprisingly, be a further manifestation of this mistrust. As a representative for the Fish Merchants’ Association in Grimsby commented, ‘…there is a lot of scepticism regarding legislation supposedly in our interests’ (GFMA, 2001). Given what has happened to the fishing industry during the last few decades this may be a fair point. Confronted with this new knowledge requirement (environmental standards, values, regulations), older companies, or at least, companies with older generation management, use the continuity and relative success of years trading without environmental knowledge or regulations as a justification for carrying on as they are – or in other words, business as usual. The fact that environmental improvements may deliver both environmental and financial rewards is considered a subordinate issue in the face of where that knowledge is coming from and the manner in which it is delivered to the firm. The ‘win-win’ message being used to sell environmental improvement to the business community is losing much of its value in the communication. This is not because managers do not believe they can benefit, but because they believe with more conviction that there are other unseen agendas at work here.

\(^2\) The EU’s opening of British waters to Scandinavian fishing vessels caused massive decline of the fishing industry during the 1970s.
5.8.1 Trade nationally, source locally?

This is perhaps most clearly illustrated by companies' preference to deal with locally situated trade bodies, business clubs and groups that prioritise the issues SMEs feel are important to their business. In terms of actively seeking information with environmental content (as opposed to passively receiving information through bulletins, e-mail and post), only five companies from the 38 in the sample said that they had approached the DEFRA, DTI or Environment Agency for information. None had heard of the EEBPP (Energy Efficiency Best Practice Program), Groundwork's Environmental Business Services (EBS), the Energy and Environment helpline or Waste Watch. There was a preference for information that came from a recognised face, someone who had been around, who sympathised with the industry's problems and who knew the ins and outs of the business, rather than an autonomous branch of Government with its 'own agendas'. Part of this, of course, has to do with familiarity. Those faces that are seen regularly by the management of SMEs are more likely to be trusted as reliable information sources than those who visit infrequently, or worse, are just voices on the phone.

"The only person we see with any regularity around here is Graham from Yorkshire Water. He comes every month or so I think to take our samples away for testing. We usually have a brew and a chat...there's no pressure. He's also useful if we need any advice on pipes or pressures and stuff..."

(Interview 23: Medium-sized drinks firm)
'The guy from YW is here quite a lot. It's got to the stage now where the lodge just waves him in and he gets on with his stuff. He'll come in to me and say he's finished, but he's just one of the workforce in a way.'

(Interview 8: Medium-sized potato processor)

There was little in the way of more comprehensive knowledge shown by any of the interviewees of the specialised schemes now available to SMEs. In the field of energy savings, for example, there are several sources of information (and funding) available to small firms that are not yet widely recognised. The Energy Saving Trust (EST) is a regionally based organisation offering energy conservation advice to both domestic and small business users. The EST is funded by Government and the private sector and is a non-profit organisation. It offers practical advice on energy saving technologies, and on how energy use legislation, such as the Climate Change Levy, will affect SMEs. Energy Efficiency Advice Centres (EEAC) are a relatively new concept designed to encourage businesses to look more closely at how energy efficiency can lead to financial gains. The EEACs have been designed to provide free and impartial advice to SMEs. The Government has introduced a scheme aimed specifically at addressing the lighting requirements of business, and ways to foster greater efficiency. The Lightswitch Project offers rebates on electricity bills for customers who prove their investment on energy efficient lighting.

But again, using such organisations may present issues of trust. Whom the firms trust to give accurate information, but also whom the firms trust to supply knowledge that is perceived as being in the best interests of local commerce. At
present, managers of many different sized enterprises in the region immediately connect the environmental agenda with European bureaucracy, and assume that by implementing environmental improvements they are in some way bowing to the wishes of some far-away European government.

5.8.2 European bureaucracy

The idea of Europe having any hand in controlling environmental legislation raised concerns with managers interviewed. Without actually knowing the specifics, managers frequently assumed the origins of all mandatory regulation to be Europe, and consequently the knowledge required to deal with it tied up in European bureaucracy.

'...Well this is your EU for you isn't it? The harder it gets to do business, the harder they (the EU) try to make it.'

(Interview 32: Small bakery)

'You bloody lose track of things don't you? You wonder which Government you're under sometimes with all this European legislation...there's so much of it.'

(Interview 35: Medium-sized fish processor)

The reluctance for firms to become more environmentally active may be a product of numerous internal and external factors, but with regards attitudes to legislation and the environment in general, SMEs interviewed in the fieldwork were actively discouraged from learning if they believed the reasons for so doing were linked to
European directives, and the pursuit by UK Government to meet what are seen as EU laws out of touch with local realities. The image of UK environmental policy as being overtly European may be damaging to enterprises that have no vested interest in pursuing overseas business, or in considering themselves European traders. British environmental legislation is now predominantly European in origin, but the image of Europe as being overbearing and bureaucratic place such legislation at a disadvantage in the perceptions of local businesses.

5.9 Chapter conclusions

This chapter has considered in very broad terms the question of knowledge: its acquisition, its handling and SME responses to their growing need to incorporate knowledge and information into their operations. The relationship between environmental knowledge and environmental improvement is not straightforward, and is by no means directly causal. Although possessing environmental knowledge is a necessary precursor to environmental improvement, a great many factors influence the decision making of company personnel, and has been suggested at several points during this chapter, seeing the environmental challenge as important in relation to other company issues is key. The following represent the major knowledge-related issues to come out of the fieldwork.

- How managers perceive the environmental issues affecting their areas of production is important, both to the specific understandings they have of
impacts, and to the value they place on remedial action. Responses suggested that attitudes and subsequent behaviour to environmental issues might be based on the development of what psychologists refer to as a 'subjective norm'. The subjective norm not only steers basic decision-making (i.e., knowledge of law, regulation, issues, etc.), but also how other actors see the behaviour of the firm. Through this mechanism selectivity and choice can be better accounted for.

- One of the principal factors that governs perception is risk. Firms experience this in two main ways: risk of environmental damage as a consequence of certain activity or inactivity, and the risks to their own operation as a result of either non-compliance or ignorance. Although their general awareness of the environment was less developed, smaller SMEs experienced the latter more acutely, while larger firms had a greater understanding of their own environmental impacts. All firms interviewed seemed unwilling to admit that some practiced aspects of their business were capable of generating risk that falls outside that which they normally used to dealing with.

- Knowledge of environmental issues and regulation is not equal across the sector or region. Managers therefore make decisions on the basis of partial or inaccurate information.

- Firms frequently question the validity of environmental knowledge, and claim that the problems are overstated. In support of this, managers suggest that there is no tangible proof for many of the problems they are allegedly causing. Major 'one-off' environmental incidents and slow developing issues such as global
warming and ozone depletion deflect attention away from degradation occurring at the local level.

- The knowledge and competencies required to deal with 'regular' business issues are real and definable, where as environmental issues come across as cloudy and uncertain. In the absence of a clear requirement for such knowledge, SMEs tend to ignore the important issues and concentrate on the problems they see as surmountable.

- In terms of information, SMEs believe that more should be done to bring knowledge to the company rather than the company to knowledge. Learning structures are poorly developed, and if the Government wants business to be greener, they should do more to facilitate this change.

- Taking on board such 'new knowledge' for environmental improvement requires more strategic and long-term planning by the SME, in terms of finance and implementation. Interviews suggest that this is difficult to reconcile with the predominantly short-term outlook of the sector in this region.

- Many of the bodies disseminating environmental best practice are not seen as trustworthy by firms interviewed. Success stories from the sample suggest that firms will be more likely to reach out for information from local, industry-specific sources rather than generic national ones.
6.1 Introduction

The previous chapter has suggested broadly that the knowledge required to act out environmental improvements is discontinuous across the sectors and firm sizes included in this research. While there are understandings at the general level, firms fail to make connections between their own operations and specific environmental worries, making it difficult for managers to understand and act on the principles of good environmental practice. As a consequence, regulation (and regulations) plays a more important role for firms in both defining areas of concern, and in ensuring those areas of concern are addressed. Knowledge and regulation are thus closely connected, both in the sense that a certain amount of knowledge is required to understand regulation, and that regulation itself is important in defining those areas in which managers need to be more knowledgeable.

This chapter deals with a number of aspects of regulation, all concerned with the way SME managers understand and negotiate regulations and the regulatory process in general. As the previous chapter indicated, regulation is usually perceived either as an intrusive and manipulative tool of European bureaucracy, or as an inevitable consequence – and burden - of the market. These readings are usually based on the predominantly negative associations individual companies have of regulation, due in turn, to the way managers are required to deal with the environmental regulatory
framework alongside other regulatory and operational demands. The analysis seeks to uncover what, if anything, SMEs fear or dislike about environmental regulation; what they know and understand about their obligations; and finally, how they view the regulatory process itself — including the role of regulators. Suggestions are made, based on managers' views, as to how the regulatory process — from design to implementation to policing — could be improved to better accommodate the needs of small firms. Before introducing empirical material, however, the following sections look more closely at how regulation is traditionally defined and understood.

6.2 Regulation in the food-sector

Food processing as an industry is extremely complex, and quality of produce is paramount in all subsectors. The market is fickle, and with taste being the principal index of quality, food companies are prepared to invest inordinate sums in ensuring their product is of a quality distinguishable from their competitors (FDF interview, 2000). The market place is itself growing increasingly more sophisticated and demanding, thus requiring the industry to push forward both technologically and in terms of new product ideas. As far as quality control is concerned, the food industry is matched only by pharmaceutical standards (Environment Agency, 2001); however, quality is normally measured only with regards to produce and customer service. Some of the main characteristics that differentiate the sector are summarised below.
There are at least 120 separate operations, compared to the 30 of the chemical industry

Some of the unit operations such as pasteurisation and ohmic heating are hardly known outside the immediate industry

It is estimated that 65% of the industry is batch process

There is a continual need for product innovation

Plant and equipment needs to be flexible to respond to changes in demand

(Source: Environment Agency, 2001)

The key factor that makes the food-sector so challenging in terms of environmental regulation is the instability inherent in many of its processes and outputs, in turn derived from instability and fluctuations in the market itself. For example, trends for the consumption of different types and quantities of foods can change literally overnight, in response to factors as diverse as weather, or scientific advice on the safety of certain foodstuffs. This in turn means that food producing and processing firms are rarely in a position where output is consistent and stable over a two or three month period, as is the case with many other industrial sectors. As firms struggle to keep their high priority customers (normally major retailers) satisfied in the short term, but strive to remain flexible enough to respond to market changes in the longer term, wastage can often be high. The strict quality and safety regulations governing the sector mean that even the smallest fluctuations can result in entire batches being scrapped. Relatively speaking, raw material and energy inputs are
greater in the sector because firms have to maintain an unrealistically high output capacity for such eventualities.

6.3 Regulation and regulations

In the Yorkshire and Humber region, attitudes to, and compliance with regulation differs considerably depending upon the size of the food-sector enterprise, the level of involvement required by its management and the perceived relevance of regulations to the running of the company. As the following sections will suggest, managers speak mainly of regulations - that is, the regulatory framework of which they are aware - as opposed to regulation, and the actual process of being regulated by an external body. This has much to do with regulation's negative image as a one-way controlling mechanism that can invariably only lead to business losing and the regulator winning. As the following sections of this chapter will describe, regulation as a process is not something managers believe they can have much input into, and therefore take benefit from.

While there is a reluctance to embrace regulation as an environmentally beneficial mechanism, this is tempered by recognition that regulations are a necessary component of all business, serving to police a system that is potentially open to exploitation, and maintain a status quo between firms competing in the same market. Knowledge of regulations and the regulatory process more generally is by managers’ own admission incomplete, a feature attributed by SMEs to the ‘lack of
coherent structure', 'bureaucracy', and 'inconsistency' across the existing regulatory framework.

'There are different regulations and legislation for different days of the week, let me tell you. I've got a problem at the moment with packaging figures, but the Environment Agency change their mind all the bloody time. It's frustrating.'

(Interview 12: Small-medium processor)

'There doesn't seem to be a great deal of consistency to any of it (regulations). The requirements of one set go at odds with the requirements of another. It needs thinking out a bit more clearer like.'

(Interview 13: Small-medium drinks firm)

'Well...regulations are all well and good, obviously...and people are always going to moan about what they've got to put up with aren't they? What I would say is that it can be confusing knowing what you are required to do.'

(Interview 22: Small-medium confectioner)

As the interviewee in the final example points out, the regulation of any industrial activity by the Government or its appointed agencies is always going to cause friction. This is because regulation is seen as a form of restriction, and the restriction of business activity is detrimental to productivity, and therefore profitability. The specific effects of regulation on business activity are difficult to quantify however, because of the range of issues covered by legislation and the knock-on results of regulation further down the line - on direct response by the SME, future planning, and attitudes generally within the firm (Business Link Leeds, pers. comm., 2000). Legislation and regulation are words used interchangably by managers during interview.
Environmental regulation raises its own kind of issues, specifically those concerning whether regulation is required at all, and if so, the types and sectors of business that should be covered. Also an issue is whom, or what, the regulator actually is, and in what ways it acts. Far from being seen as an all-powerful cohesive mechanism for controlling environmental damage, regulation is perceived by many firms in the region as being unstructured and applied on an ad hoc basis, thus reducing the belief SMEs have in the ‘system’ as a whole, and consequently the positive benefits regulation can generate. Research conducted by the Federation of Small Businesses (2000) has suggested that in the Yorkshire and Humber region, legislation issues are a source of great dissatisfaction to managers they interviewed (Table 6.1).

<table>
<thead>
<tr>
<th></th>
<th>Very Dissatisfied</th>
<th>Dissatisfied</th>
<th>Neutral</th>
<th>Satisfied</th>
<th>Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume of legislation</td>
<td>50%</td>
<td>30%</td>
<td>19%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Complexity of legislation</td>
<td>54%</td>
<td>29%</td>
<td>16%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Rate of change of legislation</td>
<td>50%</td>
<td>29%</td>
<td>19%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Interpretation of legislation</td>
<td>48%</td>
<td>29%</td>
<td>21%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Ability to employ staff</td>
<td>29%</td>
<td>27%</td>
<td>37%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>Inspection of compliance</td>
<td>25%</td>
<td>24%</td>
<td>48%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>Cost of compliance</td>
<td>37%</td>
<td>29%</td>
<td>32%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Implementation of EU regulations</td>
<td>44%</td>
<td>22%</td>
<td>32%</td>
<td>2%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 6.1: Satisfaction with legislation issues among small businesses in the Yorkshire and Humber region (Source: FSB, 2000)
6.4 Regulations affecting firms in the region

The first section of this chapter looks at the range of regulation issues affecting food-sector SMEs in the region, and the awareness managers show to the different requirements brought to bear. Being aware of regulations is likened to being aware of holes in the road, and managers were just as happy to talk about ways around regulatory 'problems', as the regulations themselves and why they were in force.

6.4.1 Awareness of regulation

Regulation is the issue managers liked discussing least during interview, and particularly whilst being recorded. In some cases this was simply attributable to the fact that managers did not know enough about environmental regulations to talk with confidence about their specifics. In others, however, body language displayed during questioning and comments about non-disclosure of information beyond the interview room, suggested that non-compliance was also a worry. Specifics of environmental regulation discussed in the interviews are clearly biased towards the particular area of responsibility charged to the interviewee. It had been established before the interviews (through telephone calls or letters) that all the interviewees had a good level of general knowledge on their companies' environmental position and regulatory demands, and as such, awareness of current environmental regulations in all but the smallest SMEs was expected to be well developed.
Table 6.2 summarises the major pieces of environmental regulation that currently affect SMEs in the region, and ranks them according to which were spoken of most frequently. Three sets of regulations make up the core of the regulatory load for small food-sector firms: the Packaging Waste Regulations, the Climate Change Levy, and the trade effluent regulations as covered by the Water Industries Act. Local Air Quality, noise and odour issues tended not to be as high on the agenda, possibly because the majority of firms interviewed were a significant distance from residential property.

<table>
<thead>
<tr>
<th>Regulations or legislative act</th>
<th>Frequency brought up during interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Climate Change Levy</td>
<td>All Small-medium and medium-sized SMEs were aware of, and commented on, the CCL - the majority expressing an opinion. Most small SMEs commented.</td>
</tr>
<tr>
<td>The Packaging Waste Regulations</td>
<td>All Small-medium and medium-sized SMEs discussed this in depth. Approximately one third of the small SMEs discussed it, but a minority avoided the issue</td>
</tr>
<tr>
<td>Trade Effluent Regulations (Water Industry Act 1991)</td>
<td>Discussed equally by all firm sizes. Was the piece of regulation on which managers showed most expertise.</td>
</tr>
<tr>
<td>The Waste Management Licensing Regulations (EPA 1990)</td>
<td>Less than 5 SMEs mentioned the regulations by name; others referred indirectly.</td>
</tr>
<tr>
<td>Noise &amp; Odour Control (EPA 1990)</td>
<td>Mentioned rarely, and only if it had been an issue (for example, a local complaint).</td>
</tr>
<tr>
<td>Duty of Care Regulations</td>
<td>Never referred to by name</td>
</tr>
</tbody>
</table>

**Table 6.2: Major environmental regulations affecting the food-sector firms interviewed**

*(ranked according to most frequently discussed)*

As was the case with discussion of environmental issues more generally (Chapter 5), managers initially tied environmental regulation in with more general regulation covering health and safety, and environmental health issues. There was no clear
distinction made between regulations governing their working environment (environmental health or health & safety, for example) and ‘the Environment’ as an external entity. This is an interesting finding in its own right, and suggests that, while managers clearly do not differentiate environmental regulation from other regulations, they could be encouraged to treat broader environmental issues in the same way as they treat core internal safety concerns, possibly involving greater employee participation and financial incentive. Interviewees were asked if they were aware of the environmental regulations currently affecting them, and whether they complied with all or some.

Without prompting, a large proportion (33 of 38) of the managers interviewed brought up the Packaging Waste Regulations and the Climate Change Levy as the principal regulations of which they were aware, and with which they were concerned. Because all the interviewees were senior managers or owners, it was expected that they would be aware of how such mandates affected their operations from several perspectives – for example, cost, disruption or benefit gained through marketing. Their awareness, however, was expressed mainly in terms of how the SME negotiated the regulations from a financial perspective, and how, ostensibly, individual pieces of regulation were treated in the same way as other company overheads.

‘…That I’m aware of…err, the CCL obviously, that’s taken a bite out of revenue, but there’s an incentive to cut back…and the packaging regulations are the other –
they cost us in terms of what we pay the EA, and getting it all sorted in the factory. They've added to an already unfair amount I'd say.'

(Interview 7: Small-medium veg/meat processor)

'There's been a lot more regulation from all quarters over the last few years. The ones that spring to mind are the Packaging Waste Regulations and the laws governing effluent discharge – those have the most immediate impact on us financially and in terms of organisation.'

(Interview 6: Medium sized vegetable processor)

'The Packaging regulations and the Climate Levy. They're the most immediate because they have the greatest effect on cash flow for us. ... There's effluent and noise issues as well... it has been increasing at a steady rate I'd guess.'

(Interview 3: Small fish processor)

The fact that regulation has been increasing is put forward as a key issue by managers, as well as its effect on finances. The recent addition of the Climate Change Levy (included under the general label of regulation by managers), as a high profile piece of legislation, brings other, more established regulatory controls to the fore. None of the interviewees went into details as to how much more the CCL was taking from turnover, but instead focused on the combined weight of all environmental controls as a restrictive mechanism on business.

'... All told I wouldn't like to work out how much compliance costs us a year. I know some of it is essential, but the CCL? This is how it works you see... a little piece at a time – before you know it you're up to your neck in regulations.'

(Interview 15: Small-medium sized brewery)
'This came up in a board meeting the other month funnily enough. We'd had a visit from the Environment Agency, and were looking at packaging figures. We got talking about how much money we'd spent on compliance since moving site a few years ago. I won't give you details, but it was a six-figure sum.'

(Interview 23: Medium-sized drinks processor)

6.4.2 The rationale for regulations

While the specific demands of regulation are an issue for all the companies interviewed, the depth of knowledge varying between individuals and SMEs, over four fifths of those interviewed showed very little awareness of why such regulations are in place. The interview schedule did not specifically set out to ascertain if managers knew the reasoning or science behind specific environmental regulations, but in the course of discussion it became clear that while regulation was questioned from a financial and even a convenience perspective, there was little questioning of how environmental regulation benefits the environment. The following quotes illustrate this kind of casual acceptance.

'I think there's a certain amount of acceptance that goes with anything like this to be honest...it's the same with the food safety regulations, you go along with them because you're told they are the right or the safe thing to do. Now...whether that's always the case...?'

(Interview 38: Small bakery)

'I think the industry is guilty of just saying "okay" too many times in my opinion. Regulations and laws are supposed to be in place to protect consumers, the environment...whoever, but you'd be surprised how many people don't actually know why they're doing something or not doing something.'
‘The PWR are there to encourage us to use less packaging, I’m still not that sure why we have a climate levy – (laughs) … we just accept it though like so many other things.’

This suggests that in many instances, SMEs are accepting the demands of regulation without any comprehensive understanding of why their firm may be posing a risk, or why the specific regulations are brought into force. As well as being counterproductive in the short-term (i.e. the risks of poor, or non-compliance), there are other problems raised by such low understanding of the basis for regulation. For SMEs to develop a more positive attitude towards learning, and make this more inclusive across the workforce, it is crucial that mandatory requirements are accepted and understood as imperative. It is unlikely that managers will see the need to push beyond regulation if regulation itself is not properly understood. Equally, for the adoption of environmental management systems (see chapter 8, section 7), firms need to understand the principles of environmental regulation before they will extend its control, voluntarily, into other areas of their operation.

6.4.3 Learning

In terms of learning and education (See chapter 7, section 2), regulatory demands are not the subject of a clear learning requirement in the SMEs interviewed. Managers suggested a number of reasons for this, broadly consistent with the lack of
an 'ongoing learning culture' highlighted in the previous chapter on knowledge. The time constraints facing many SMEs, for example, and the perceived irrelevance of much environmental law, make regulatory learning a low-priority activity compared to marketing or sales promotion. Even accepting that small firms may have a limited capacity to learn, however, the basic requirements of current environmental regulation alone are unlikely to deter SMEs from making further advancements on the back of regulation if they do desired. Compliance with packaging regulations or the Climate Change Levy, for example, involves little more than basic mathematics and record keeping. Interviews suggested that individual pieces of legislation, while unpopular at a basic level, were not a major problem for many companies, and awareness/knowledge of them was sufficient to maintain the firm's legality.

'Ve're pretty (much) up to speed with the important regulations I think. The CCL for example and wastewater regulations. It is obviously not in our interest to be caught in violation of anything so we have to be aware of what's out there. I do think there's a mentality in our sector for 'what you don't know about can't hurt you'.'

(Interview 37: Medium-sized bakery)

'Between the different departments, I think everything's covered. We have an excellent track record where all kinds of regulations are concerned, but I doubt the board would go digging too deeply because there's probably a whole raft of regulations out there we don't know about.'

(Interview 13: Small-medium drinks firm)

'...Yes, I think we're aware of the major pieces of legislation and regulation. I couldn't tell you hand on heart that we comply with everything we should do
because there's bound to be things we haven't identified yet (laughs)...whether or not that ever happens...well?'

(Interview 11: Small-medium fish processor)

'If it exists, there's every chance we cover it. Each department looks out for specific things regulation-wise.'

(Interview 23: Medium-sized drinks firm)

Aside from the recurring complaints about the suitability of regulations to food-sector enterprises, compliance is not a major hurdle. As this series of quotes seems to suggest, however, some SMEs are aware that their environmental obligations stretch further than those of which they are currently aware, and that searching for more – that is, taking the time to learn - may not be in the best interests of the firm. The 'what you don't know can't hurt you' mentality mentioned by one manager is a recurrent theme among the larger firms interviewed, and tends to be more apparent in those companies that have sufficient organisational capacity to disperse regulatory pressures/threats over more departments and personnel. This is in contrast to smaller SMEs who, through their more basic management, see threats more acutely, and understand that what they don't know can hurt them.

SMEs are also very aware that there is a good chance they will never be thoroughly audited for their environmental impacts and regulatory compliance unless they opt for recognition under one of the formal environmental management systems. This factor promotes an attitude of lethargy, and while major pieces of legislation are
treated as important, firms believe they can use ignorance as ample justification for maintaining a generally low awareness of other important regulatory requirements.

'As long as you’re covered on the important issues I don’t think you’ve got much to worry about. If the environment people came and had a really good look around, I’m sure they’d pull us up on a few things. But that doesn’t happen, and we have to get on with things the best we can.'

(Interview 22: Small-medium confectioner)

A good example of this is in attitudes towards waste disposal in parts of the food sector. Waste generated during the production/processing of foodstuffs is subject to the Duty of Care Regulations. Such 'controlled' wastes must be managed in accordance with waste management regulations and other waste-related regulations (FoE, 2001). Management of these wastes originally fell under the Control of Pollution Act 1974, but is now subject to regulation under the Environmental Protection Act 1990, and the Environmental Protection Act (Controlled Waste Regulations) 1992 (at the time of the fieldwork). In addition, some food sector wastes (those possessing certain flammable, toxic or irritant properties) fall within the hazardous or 'special' waste bracket and are subject to more stringent controls under the Special Waste Regulations 1996.

Approximately ten of the SMEs interviewed admitted to a poor understanding of the details of waste management. These were spread across the different size brackets included in the research. Several managers actually pointed out the waste skips into which all waste, irrespective of nature, was directed. In some instances, waste
falling under the special waste bracket was mixed openly with more inert wastes bound for landfill, and the whole idea of a 'duty of care' was either ignored or overlooked. Managers of these firms seemed aware that their current practice was an infringement of regulations, but cited the practicalities of separating waste streams and of identifying disposal routes as justification. Again, what competitor firms in the region were doing was judged an important factor in dictating expenditure on environmental regulation.

'It's not as if we don't comply with regulations, but I think you just have to draw the line somewhere. I know we use the waste skips for some things we shouldn't, but that comes down to cost again I think. If we knew for sure that all our competitors were investing money in it then we could be more confident that introducing it wouldn't put us at a disadvantage.'

(Interview 30: Medium-sized processor)

'No one has ever complained about what we dispose of in our skips to be honest. I know there are special provisions for certain things — like above a concentration of a chemical makes it special waste — but err... that's one for the future (laughs)!'

(Interview 16: Small-medium producer)

Where there is a clearly evident requirement to act, such as with wastewater disposal or packaging waste, the SME has little choice other than to adhere to the regulations. Enforcement is widespread, and there is ample incentive for firms to treat the regulations as a core requirement. Where more specialised regulations are in force — regulations that do not have the contiguity of more mainstream laws — SMEs are under no pressure to comply, and the chances of their activities coming to
the attention of regulators are slim. The following section concludes with suggestions, based on comment from SMEs and the Food and Drink Federation, as to how the food-sector – and specifically SMEs – could be more effectively regulated and policed.

6.5 Acceptability of regulations

Establishing a level of regulation acceptable to all parties is an ongoing challenge in the UK, mainly because there are a multitude of groups with different agendas who stand to be affected if the balance is not right. Industry itself is clearly in the front line, and ensuring regulation is fair and proportionate to their activities is a high priority for them. In recent years many food-sector industries and sub-sectors have been unhappy with what they see as unfair treatment under current regulation guidelines (FDF, 2001), and point to their relatively benign impact in comparison to heavy polluters such as oil and chemicals. Some of the larger operators who are affected by Integrated Pollution Prevention and Control (IPPC) are still unsure as to why the food-sector is being placed in the same category as industrial sectors responsible for heavy metals and toxic waste (ENDS Report, 1999).

In the Yorkshire and Humber region, trade associations have spearheaded this criticism, and are suggesting that regulations should be reviewed for all food-sector operations to more fairly represent the sector’s impacts (HFMA, 2000). Criticisms of the regulatory system have come from many other sources, however. Politicians (House of Commons Environment Committee, 1997), environmental groups (Peak
Associates, 1998) and academics (Smith, 1997) have all, be it in different ways, indicated that a review of current regulations is urgently required (Richards et al., 2000). Many managers do not echo the urgency with which some interest groups would like to see change, however. One reason for this may be that the sector thinks it has tolerated major upheavals in policy over a short space of time (FDF, 2001), and more uncertainty and transition may damage the long-term prosperity of food and drink in the region. For the smaller operators it is a case of ‘better the devil you know’ where regulation is concerned, simply because routine and familiarity have now been established, and while the current system may not be ideal, managers have come to understand its working, and in certain instances its shortcuts.

6.5.1 A limited capacity to change?

For some smaller SMEs, it is difficult to envisage their protestations having any effect on the regulatory regime at all. Nine of the smallest firms interviewed suggested that while they were unhappy with the regulatory burden, they felt unable to contribute in any productive way to making changes. In a similar way to that described in the previous section, ‘not rocking the boat’ is deemed the better option for these firms, and they tolerate regulation for better or worse.

‘I’m unhappy with a lot of things regulations-wise - I don’t see the need for half of it. But what can you do really? Tell the Environment people they’re wrong and you aren’t going to comply?’
‘You get to the stage where you’re spending half your time worrying about regulations and legislation. There’s nothing you can do about it apart from lobby your trade association. No... the best thing is to roll with it and try to pinch back a bit in other areas!’

(Interview 31: Small confectionary producer)

This too is an unproductive situation in that the acceptance displayed is not rooted in any genuine understanding or desire to meet regulations, but a feeling of disempowerment and inability to act. As the last interviewee’s suggestions makes explicit, what his firm loses through regulation, he was prepared to try and scrape back ‘in other areas’, whatever and wherever those may be. So while larger firms may be able to bury regulatory and legislative loads within their more substantial overheads, rendering them invisible, smaller firms accept regulation on the grounds that they can do little about it. Either way, as the following section suggests, there may still be limits to what managers are prepared to put up with.

6.5.2 The limits of acceptability

Throughout the firms interviewed, food-sector SMEs take a largely ambivalent view towards the environmental regulations affecting them. When asked for their views on the acceptability of the regulations – in terms of compliance cost, disruption to daily running of the firm, etc. – over sixty percent of those firms interviewed said that they simply accepted the regulatory framework for what it was and complied as required. Other comments were less passive, however, and expressed a concern that
a limit or ceiling was being approached, above which, more regulation would be totally unacceptable.

'Most of the regulations that affect us are okay to be honest. I mean, I’d rather not have them at all from a purely practical point of view, but they are necessary I suppose. I just wish it all fitted together a bit better ...you know, not quite so ad hoc.'

(Interview 15: Small-medium sized brewery)

'I think there are a number of ways of looking at it. On one hand no, I would have to say that a lot of the regulations that affect us are superfluous. But then again you can’t have it both ways, we do need some regulation somewhere down the line.'

(Interview 19: Medium-sized processor)

'We’re at the stage now where the main bits of environmental legislation are just routine if you know what I mean. We just get on with it in the same way as we do other regulations...food quality, etc. I would say that we’re getting close to saturation point however. I don’t think the industry can take much more environmental regulation.'

(Interview 9: Medium-sized fish processor)

The last interviewee raises a point in his final sentence, which was echoed by many of the smaller producers/processors. At present, regulation acts on the food-sector through a number of different legal mandates (Environment Agency enforcement, Local Authority enforcement, private water company controls), and is enforced by several agencies. Many individual concerns focus on the content of regulation, and the specific problems SMEs face as a consequence. There is a more clearly articulated worry as to the size of the regulatory burden in general, and its potential
for further increase. Initial reactions to questions of environmental regulation show immediate concern for the demands placed on staff time, quality and quantity of produce, and in more general terms the effect on overall competition. More in-depth discussion with managers, however, suggests a perception that increases to amounts of regulation will place unmanageable demands on certain sized SMEs and types of producer.

'You're getting near the stage now where you have to ask if anything else major came along, would you be able to cope?'

(Interview 3: Small fish processor)

'One of the biggest challenges we face from regulation is the time demand it places upon the workforce.'

(Interview 12: Small-medium veg/meat processor)

'We tend to look at regulations from the bigger-picture-perspective...if you see what I mean. Individually, they are manageable, but the combined load places quite a strain on us financially and operationally.'

(Interview 9: Medium-sized fish processor)

In terms of total amounts of regulation affecting food-sector companies, direct environment-related demands do not constitute a large percentage burden. The food-sector, not surprisingly, is affected by a plethora of UK and EU regulations governing the production and processing of food from raw ingredients to shelf item. These obviously differ from sub-sector to sub-sector, but, according to the FDF (2000), amongst the most stringent and demanding currently are:
The Dairy Products (Hygiene) Regulations 1995
The Food Labelling Regulations 1996
EC Regulations (2081/92) on Protecting Food Names 1992
Poultry Meat Hygiene Regulations
Regulations for Novel Foods and Novel Food Ingredients 1997

Independent campaigners have been arguing for a more simplified regulatory regime for small food producers for several years (The Countryside Alliance, Honest Food). Many food-sector SMEs from all parts of the UK have come to see the large volume of regulation now affecting them as burdensome, and in some instances it has been argued that these are based on 'dubious scientific evidence' (Countryside Alliance, 2001). In particular such groups say they are opposed to the style and approach of the various agencies charged with regulating food production, and would welcome a more HACCP-style inspection system (Hazard Analysis Critical Control Point) where the hazards specific to each sub-sector are more fairly evaluated.

In speaking of regulation, however, and the pressures it places on competitiveness, firms speak of the cumulative effect of all kinds of regulation rather than environment-specific issues. It is not the unsuitability of environmental regulation per se, but the fact that environmental regulation (as a relatively new phenomenon) is now acting in conjunction with a plethora of other mandatory requirements on food producers – requirements that are a cause of consternation in themselves. It is the additional weight of new environmental regulations that causes some managers to express frustration and even anger.
'I went through a phase of being really pissed off by it all. When the CCL was introduced, then new laws on waste...it was like... "We really don’t need this at the moment,"... but we’ve gotten used to it. If you speak to many other people in my position I think they’ll say similar things – regulations just keep on getting thicker.'

(Interview 10: Small potato baker)

'I spend half my time worrying about regulation and legislation, whatever the difference is. If you’re asking me about regulation specific to environmental issues...there isn’t that much, but added to everything else...'

(Interview 24: Medium sized fish processor)

'We have meetings every so often to raise awareness of new legislation and regulation. I just switch off now because there’s so much. What can you do?'

(Interview 23: Medium sized drinks producer)

It thus becomes a matter of priorities for SMEs. In an industry increasingly regulation-led, managers are having to choose between the regulatory regimes that threaten their prosperity the most. While no manager came out and admitted that their firm was ignoring regulations, twelve of the SMEs interviewed said they dealt with the most pressing first (i.e. the greatest risk of fine, loss of business, etc.), and then worried about the others later. As indicated earlier, this may mean that environmental regulations come much further down the list of priorities for SMEs than is currently being acknowledged. The final set of quotes illustrates this worry.

'...Of course we take regulations seriously, but things tend to go in cycles in this industry. There’ll be a scare attached to something one month, and next month it will have been replaced by a worry about something else. That means that
regulations tend to follow these cycles, and you can't necessarily cope with that pressure all at once. You throw your efforts into one thing, and others have to take a back seat until you get round to them.'

(Interview 22: Small-medium confectioner)

'It's a matter of priorities Andy... it's simple maths. We've only got so many people, and we have to prioritise - if that means things being left longer than they should be, well... we'll have to take our chances there.'

(Interview 21: Small oil processor)

6.6 Regulation as a motivator

In terms of stimulating SMEs to go further than regulatory requirements, responses suggest that regulations are currently an inefficient motivator. Regulatory demands are prescriptive, and do not encourage managers to take the measures they enforce to other levels or parts of the business - on a voluntary basis in particular. Regulation is perceived largely as a negative force, and past encounters with regulations (and regulators) do not lead firms to view current legal imperatives as a baseline for any future action.

'We'll typically do just what we need to do.'

(Interview 27: Small-medium processor)

'I can't honestly say that, no (when asked if regulation was a platform to approach environmental issues in a wider sense). Regulation is a fact of business life: some of it's good; some of it's pointless. It's all there though! We just comply with it and carry on as normal really.'

(Interview 16: Small-medium sized producer)
Comments such as these suggest that as well as being the source of individual complaints, regulation has a much larger image problem, and managers base their views of all regulatory requirements on the basis of experience with a few or even one piece of legislation. Managers assume that increasing amounts of regulation take control away from the local level, and restrict choices at the operational scale. Section 6.6.2 proposes some alternative approaches to how regulation could be simplified.

While individual acts of regulation are sources of concern for managers interviewed, the entire regulatory framework is seen as burdensome and unclear. Environmental regulation and health and safety regulation are frequently confused, and interviewees are unsure as to how efficiently the regime is operated and maintained.

6.6.1 Fragmented regulatory control

Comparing the approaches to environmental regulation in the UK and in the Netherlands, Spence et al. (1998) note that in the UK, the approach has been noticeably more fragmented. They contrast this with the 20-year National Environmental Policy Plan introduced by the Dutch in 1989, which gives regulation a more prominent role in the control of environmental impacts, and which makes clear to businesses the organisations involved in monitoring and enforcing different aspects of pollution control/resource use. As yet, the UK system of control seems to lack this unified image, which may lead managers to doubt and mistrust the
regulatory system more widely. The lack of respect is an implicit but recurring theme that comes out in many interviews, and can perhaps be suggested as a demotivating factor for firms to become more active in complying with regulation and taking the requirements a stage further.

‘In terms of environmental regulation, there isn’t much really... we get left to get on with things. I’m not saying we’d do it, but we could pretty much do what we wanted down here and no one would be any the wiser... the environment people don’t have the scope to check.’

(Interview 38: Small bakery)

‘If there were health issues at stake here, the EHO system or the H&S department would spring into action, but if we started causing environmental damage, who would find out and what would happen? It doesn’t seem to me like the whole thing’s policed at all...’

(Interview 12: Small-medium veg/meat processor)

‘From the contact we’ve had with Yorkshire Water and the Environment Agency, I’m a little bit unclear who does what. Do the EA regulate Yorkshire Water? If so, does that mean that the EA regulate us as well, or is that just Yorkshire Water? It might just be me getting confused!’

(Interview 30: Medium-sized processor)

Because the food-sector does not fall under the bracket of IPC, thus requiring consents for specific releases, there is no single regulatory framework that covers its operations. This is what interviewees refer to frequently when they talk of the system being hard to understand; different actors are involved for different aspects of environmental control, and the overall picture is one of uncertainty and overlap.
Regulatory contact for the environment is a rather complex mix of wastewater undertakers, local authority inspectors and Environment Agency personnel, which at times gives companies the impression that there is no structure to the system at all. Managers interviewed did not know from week to week whether they would see a regulator, or indeed whether one was due to call.

'I think Yorkshire Water are here the most frequently, but even with them I couldn't tell you when the next visit is due. Environment Agency and local environmental health only come when there's a problem.'

(Interview 7: Small-medium veg/meat processor)

'I know exactly where I stand with the Environmental Health Office, and when I'm due to see someone. With your environmental stuff, it's like they make it up as they go along – I might not see anyone for six months.'

(Interview 26: Medium-sized drinks firm)

'I think there's always going to be regulation of what businesses do, it goes with the territory. What worries me is that we are now in a position where we have to think twice – sometimes more – about what we invest in, and what we produce because of that kind of pressure. We operate under strict limits from Yorkshire Water, for example. If we wanted to develop a new line of produce or adapt an existing one, we'd have to think about effluent strength and the amount of solid waste it would create.'

(Interview 25: Medium-sized meat processor)

'...Yes we comply with regulations, but I've got to say that they don't do much for us in terms of our flexibility. They're like this dark cloud hanging over...that's a bit harsh because I know what they regulate is important...but packaging waste, and wastewater controls...you have to factor them into everything.'
Companies do not at present, therefore, see regulations as any kind of catalyst for further environmental improvement. Regulation serves only to define certain key aspects of the operation as 'risk areas' in need of particular attention, and this attention is frequently reactive in nature rather than forward-looking. Consequently, companies seek to exploit the gaps in existing regulations and, while stopping short of breaking the law, push the system to the limits of what they believe they can get away with. The regulatory framework is seen as static and immutable, and often the less that a firm can do to comply, the better.

'I suppose it's like paying taxes in a way... you don't really want to do it but it's there and you've got to make the best of it. But that doesn't mean you can't try to pay the minimum taxes possible...'

(Interview 13: Small-medium drinks processor)

Many criticisms from the larger SMEs in the sample were very generalised, and made largely unsubstantiated criticisms of regulatory intervention. They were concerned primarily with the effects it had on their flexibility, and saw it as a necessary (but sometimes unnecessary) evil. There were no specific examples cited by managers as to how regulation had interfered with this flexibility, however, and much of the criticism seemed to stem from the fact that regulation was seen as a pseudonym for interference, and interference was by definition undesirable. The consequences of non-compliance did not seem a particularly strong motivator for
firms to ensure full compliance with regulations, and SMEs felt the chances of being fined or prosecuted under current law were slim.

‘You wouldn’t like to test it but I don’t honestly think much would happen in we failed to comply with...say the packaging regs. No one would check up for years.’

(Interview 29: Small meat processor)

‘If it weren’t for Yorkshire Water coming to do the sampling now and again, I don’t think we’d see any one, so how people would know if we were breaking regulations...then again you’d have to risk people grassing you up.’

(Interview 27: Small-medium food processor)

‘I’m not saying we’d ever do it, but I get the distinct impression that we could pretty much do what we wanted here...we wouldn’t though.’

(Interview 25: Medium-sized meat processor)

All interviewees found some faults with the existing regulatory regime, and argued that at present the system did not take into account the needs and real impacts of the sector. While ensuring compliance is still of prime importance, one of the new challenges facing enforcement bodies is of recasting regulation (and perhaps even their role) as not only a list of mandatory requirements, but more as essential first-stage action within a wider set of opportunities and challenges. To do this, it may be necessary to introduce greater incentives for small firms to comply fully with regulations, and as the following section suggests, change the format of regulation to involve fewer regulators, and more simplified contact between food-sector SMEs
and the regulatory system. Figure 6.1 summarises the main problems with regulations for the managers interviewed.

![Graph showing summary of criticisms leveled at regulations](image)

**Figure 6.1:** Summary of criticisms leveled at regulations (y axis = total numbers from sample)

6.6.2 Ways forward for regulation

The criticisms of regulation summarised in the previous section, while severe in places, suggest that managers are not opposed to the regulatory principle, but the application of regulation in practice. There may, therefore, be scope for improvements. Four managers from larger companies suggested that they would be more prone to accept environmental regulation as intrinsic to their operations if its
format were altered so as to place fewer demands on their time, and to appear as an *event* rather than an ongoing and seemingly arbitrary collection of visits and requirements. The idea of a once, or twice yearly environmental audit was considered a possibility when suggested to other interviewees later in the fieldwork.

'Yes, I think fewer but more rigorous environmental inspections would work better for us. Rather than having assorted people digging around all year, you could have a team of people on site once a year for a few days – then they could issue us with a list of items to address.'

*(Interview 19: Medium-sized processor)*

'When we do a stock take each year it takes us about five days; it’s a pain, but once it’s done it’s done. Why couldn’t that be applied to things like this?'

*(Interview 9: Medium-sized fish processor)*

'I think there are still a lot of issues with it – for one, there’d still be the financial worry of spending what we’d hadn’t really got...but I can certainly see why people have suggested it – it’s simpler.'

*(Interview 32: Small-medium sized bakery)*

There are a number of problems with adopting such a ‘black and white’ approach to policing regulatory compliance, not least the fact that SMEs could effectively be regulation-free for the majority of the year. In addition, such a system would require large-scale shifts in how regulatory bodies currently operate, as well as changes to their individual responsibilities. However, given managers’ specific concerns about the effects of regulation on their business, and the negative associations many SMEs have with the notion of current requirements, there may be
scope for some form of simplification and focusing, not necessarily of regulations themselves, but in the way compliance is monitored.

For example, the Association of Conservation for Energy (ASE) has recently called for all offices to undergo five-yearly energy audits, or 'MOTs', by accredited environmental inspectors (Guardian, Aug 5 2002). All aspects of an office’s energy consumption and wastage are monitored and reviewed by one body, who then have the responsibility of issuing recommendations to the firm. Although this idea is a long way from the practicalities of inspecting industrial premises and procedures, it at least supports the feasibility of single audits for environmental regulations, where SMEs (or groups of SMEs) are checked once or twice a year for their compliance with all environmental regulations. This would clearly require cross-agency cooperation, and the establishment of one clear regulatory framework in which the duties previously split between the Environment Agency, sewage undertaker and local authority are rolled into one function. This kind of approach is obviously some years distant for SMEs, if indeed it can be achieved at all, but may make the 'idea' of regulation a more attractive one in that firms need only meet the requirements of one regulator working to one set of regulations.

6.6.3 Maintaining the status quo

But while regulation evoked largely negative associations, it was not always read as undesirable to larger firms, and was often seen as serving another purpose. Because competition is key to success in the sector, one of the issues concerning managers of
larger SMEs in the sample, is the threat of being out-competed by smaller companies. From this perspective, regulation served to maintain a status quo and level the playing field with regards to who was handicapped with legislation.

Larger, more complex organisation invariably means greater overheads, and therefore more expensive products in the marketplace. Where smaller SMEs seem concerned about the suitability of the regulatory framework for their size of operation, larger companies take some satisfaction in the fact that statutory instruments force smaller companies, with fewer overheads generally, to meet the same criteria for environmental quality. In this way, the financial burden of compliance is felt equally across the food-sector rather than by particular sub-sectors within it.

'It keeps out the cowboys if you know what I mean! Smaller operations are usually in a better position to compete when it comes to certain lines, and because they're out of the spotlight, they could be free to reduce their price by not sticking to the correct safety and environmental procedures. It's good for competition.'

(Interview 25: Medium meat processor)

'For all that's said about regulation, it does make sure that Joe Bloggs down the road there trading out of his garage can't skimp on the quality aspects and undercut the bigger players.'

(Interview 26: Medium-sized drinks manufacturer)

'It's only fair that everyone should be subject to the same standards environmentally. That's not just because I don't want to see other firms in a better place to undercut us, but I think it's just right.'

(Same)
Regulation thus serves the purpose of leveling the playing field amongst different sized actors in the food-sector, and while larger companies do feel they are being handicapped by regulations, the fact that their competitors are subject to the same pressures is seen as a positive factor. Regulation may be seen as ill suited, but it is equally ill suited to firms competing in the same marketplace. This is clearly one of the intended roles of regulatory intervention, and while it's primary function is to place direct pressure on firms to comply, by acting equally across the sector, it gives reassurance to firms that they are not being forced into expenditure their competitors have avoided.

6.6.4 'Us and them': the smallest firms and regulation

All the smaller firms in the sample tended to express more candid views on the role of regulation to their business, and frequently failed to see the requirement for any kind of regulation of their activities. The cost burden for meeting environmental regulations is felt more acutely by SMEs with smaller turnover, and fluctuations in trade can place strains on such firms' ability to comply.

'I employ seven people here, less out of season. I'll tell you what I think of regulation of the environment: it's a waste of time. It's hard enough as it is trying to compete, but when you've got people breathing down your neck...'

(Interview 4: Small fish processor)
‘You’ve just got to be so careful what you do... you know... what you get rid of and where. It isn’t like it used to be at all. I think it’s all a bit over the top – it constrains your choices.’

(Interview 32: Small-medium bakery)

‘It can get difficult sometimes certainly, if we have a bad six months or so then paying out to the Environment Agency or whatever can really hit us. Because... no matter what the state of the market, the regulations stay the same.’

(Interview 32: Small-medium bakery)

Where larger SMEs see regulation serving an equalizing role - between their actions and those of more flexible smaller operators - smaller firms themselves assume a more hostile stance to the necessity of environmental regulation in any form. Environmental damage is seen as something larger companies do, and it is believed that the regulatory framework should not reach out to affect smaller SMEs, who have ‘no environmental impacts.’ At the base of these beliefs is the idea that government should be doing more to nurture small business development, and championing the cause of small enterprises in the face of multi-national competition. Reinforcing the regulatory burden under which such firms operate is seen as opposed to this logic.

Although it is not expressed in any direct way, there is an ‘us and them’ mentality implied by many of the managers/owners of the smallest (1-70) SME group. Larger producers/processors are differentiated in terms of their output, their markets, and their capacity to deal with change – including all kinds of regulation. They are also
seen by small SMEs to be the 'real' perpetrators of environmental damage simply because they are larger.

'The big producers are the ones who should be doing more if you ask me. X in Leeds have an output about fifty times ours, but I bet they aren't under fifty times as much regulation and legislation.'

(Interview 32: Small-medium bakery)

'There are parts to this whole argument that are really unfair. Because we are small we find it difficult to absorb external charges such as those complying with regulations. Larger companies – who, lets face it, are more culpable – don’t feel the pinch as much.'

(Interview 1: Small ice-cream manufacturer)

'...I really think there should be some kind of concession for the smallest firms. We don’t have anywhere near the impacts the big boys do.'

(Interview 11: Small-medium fish processor)

The point at which firms become eligible for environmental regulation is not discussed, or perhaps even considered, by interviewees, however. Managers of small SMEs tend to emphasise different aspects of their own size and organisational ability dependent on the issues at stake. For example, when a manager was commenting on the scope of their operation and size of their customer base or order book, it was common to be answered with positive, possibly even exaggerated statements. The firm may claim to be in the top five producers in the region, or increasing turnover and output exponentially. When the discussion turned to issues of regulatory compliance, however, the manager would then stress the limited scope
of the firm’s operation, and the size of their output compared to the bigger players in
the region. Talking about these issues, the managers grouped their company with
the small and the insignificant. The following pairs of statements were taken from
the same interview:

‘Last year we produced 12 million bottles. This year we’re aiming to double that.
It probably makes us the largest producer of bottled lemonade in the region.’

‘Our manager likes the idea of greening the business – it’s progressive. The thing
is, we’re a small company in the greater scheme of things, and our impacts really
don’t amount to much.’

‘Things are good at the moment, business is booming and everyone’s happy. The
order books are full. Pound for pound and tonne for tonne, we’re probably the
biggest at what we do, which I suppose gives us some kind of responsibility
beyond the factory.’

‘…What you have to remember is that there are lots of other massive companies
out there and compared to them we’re really not that big. Regulations would be
more appropriate to that kind of firm.’

(Interview 23: Medium-sized drinks producer)

The first quote in each set stresses the size and success of the company, but when
pressed on regulatory responsibilities later in the interview, the emphasis is placed
very much on the size and success of other, larger firms. So while firms may be
growing and experiencing market success, they may feel the scale of their operation
is never large enough to qualify for more rigorous environmental policing. Again,
this is tied into the perception many managers have about the environmental impacts specific to their sector and processes. People eat food, ergo food is clean.

‘...I mean, just how environmentally damaging are we here on a scale of 1-10? 1, 2...? People forget sometimes what it is we do here.

(Interview 23: Medium sized drinks processor)

‘The thing is, I don’t believe our environmental impacts have increased any over the last few years. Maybe water use...’

(Interview 31: Small confectionery maker)

‘There’s nothing going on here that’s really a big threat is there? Not in the way that a chemical factory is surely.’

(Interview 1: Small ice-cream manufacturer)

These beliefs stretch further than the limits and parameters that together make up the regulatory framework, however, and extend to regulators themselves. Regulators are the human face of the regulatory regime, and problems associated with specific regulations are often tied in with the act of regulation. Regulators work at the interface of business and the environment, and as such their operation has an impact not only on compliance, but also on companies’ views of environmental issues more generally.
6.7 Experiences with regulators

Views on the process of regulation differ across the sample and are dependent on a number of factors - for example, understanding and acceptance of requirements, perceived relevance, affects on productivity (and on competitor productivity) and compliance costs. Firms of different sizes are therefore affected by regulation in disparate ways depending upon the nature of their activities, but may use the effects of regulation as a way of positioning themselves as either more or less able to deal with future regulatory demands. However, for SMEs in the region, the point at which they engage with those regulations is through direct regulator contact. The regulator interacts with the staff, and is allowed access to the inner workings of the business. Regulators, by necessity, may need to question judgments made by the management, and understanding how such contact unfolds is important not only in terms of compliance, but in building trust between regulator and regulated.

It makes sense to study the interaction of regulator and regulated for a number of reasons. Firstly, with greater amounts of legislation impacting upon the food-sector (Environment Agency, 2001), contact between the sector and regulatory bodies seems certain to increase over coming years, and a clearer picture of how this interaction unfolds will be beneficial to both parties. Second, in looking at the dynamics of regulatory meetings, it is possible to reflect upon how both actors approach and prepare for the encounter, which may itself be an important precursor to the kinds of environmental measures firms are prepared to take. Lastly, doing so can provide insights into how emotions and attitudes are expressed before, during
and after personal contact with a regulator. Displays of emotion stimulated by the suggestion of change may in some capacity affect all companies' actions. With environmental changes carrying a high potential for organisational disruption, it may be that regulatory intrusions – and the threat of regulatory penalties or prosecution - generate feelings of frustration, annoyance and even anger in the decision makers of the company. The following section examines the dynamics of regulation more closely, and makes some observations based on the testimonies of managers that had responsibility for site visits.

6.7.1 Regulators: initial views

Contact time between SMEs in the region and environmental regulators is extremely low. In comparison with public and private body inspections for Health, Safety and quality issues, direct contact with official bodies (Environment Agency, local authorities, Yorkshire Water) and to a lesser degree supply chain regulators (supermarkets, consumer groups), represents only a fraction of the total contact time with external groups (Environment Agency, 2002b; FDF, 2003). This carries implications not only for what regulators can realistically hope to achieve during contact time, but also for how the firm comes to view the process of regulation and their obligations above and beyond that which regulations require. As Judith Petts (2000) has suggested, the impacts of proactive regulation (such as IPC) on SMEs is in general very small. The regulated bodies are allowed to manage the regulatory process themselves (Baggott, 1989), and contact tends to be restricted to checks on
self-regulation procedures - for example on effluent sampling and on record quality for packaging waste. Impressions of regulators - their modus operandi and their reasons for being on site - are thus forged on the basis of very little direct contact. Managers were asked in general terms about their experiences with regulators, through any form of contact, and their impressions on how regulators operated.

'...Err...regulators? Well, we see YW the most often I’d have to say. They come to collect our effluent samples. We leave 'em to it mostly; they stick their head in to say hello and that's it. We don't see the environment people at all.'

(Interview 10: Small potato bakery)

'The people we see tend to be okay to be honest, they’ve got a job to do at the end of the day. It isn’t very often anyone’ll come though. I think the Environmental Agency come once a year to look at our packaging figures, but YW we’ll see a bit more of – they’re happy so long as we stay within our consent limit.'

(Interview 32: Small-medium bakery)

'As I said earlier, we don’t see the council for environmental things at all, they’d get involved if we were producing odours; we see Yorkshire Water quite a lot because they want to look at our pipework and effluent – they come, they go...'

(Interview 24: Small-medium fish processor)

The reflections firms have on regulator contact tend to be positive, mainly because there is seldom any direct infringement of legislation, and regulatory inspections are brief and focused. In terms of staying within established environmental procedures (effluent strengths, odours, packaging regulations) this brevity is beneficial, and is welcomed by SMEs because regulatory intrusion is kept to a minimum, and productivity is not adversely disrupted. SMEs are, in general, comfortable with the
idea of regulators on site, and treat environmental regulators as 'occasional visitors' - people who come on to site to do a job, but who also should remain at a safe distance from the operation.

Such visits are still a potential threat, however, and over half of the firms interviewed admitted to treating regulators with caution at some stage or other.

'We've had the Environment Agency here over the past few months. They're very polite, and we try to be accommodating, but you are aware they have the power to drag you over hot coals if they so desired.'

(Interview 13: Small-medium drinks firm)

'I rarely see anyone from any of those places. When we do get someone ringing up or arranging to come, I'm a bit wary of saying too much...you know what I mean?'

(Interview 8: Small-medium crisp manufacturer)

There are exceptions of course, and where regulators are perceived as crossing the line and interfering directly with the running of the firm, there are accusations of intrusion and time wasting. As an Environment Agency officer suggested, however, it is predominantly when companies know they are in violation that such accusations tend to surface.

'As part of noise control we've got to be audited by local authority EHO. They basically walk around the site and listen for things: engines, machinery, people shouting...that sort of thing. The last time he came he had to abort because of sheep bleating in a nearby field – he claimed it interfered with his testing...there's
a lot of fringe idiocy with regulation because he had to come again and take up
more of our time.'

(Interview 15: Small-medium sized brewery)

'The local authority has asked us to do regular checks on our noise and smell. It's
a fucking waste of time I'll tell you; we have to walk all around the plant for
about 45 minutes listening for noise and smelling the air. Like we haven't got
better things to do.'

(Interview 29: Small meat processing firm)

'Our packaging figures were wrong apparently, and the Environment Agency told
us we had to pull out a raft more figures for inspection. Who cares really, if it's
four tonnes or four and a half tonnes?'

(Interview 28: Medium-sized drinks firm)

In these examples, regulators are criticised because they are seen to be placing
unreasonable demands on company staff. Even though regulations may in fact call
for such measures, and regulatory staff are not themselves responsible for the
demands, it is individual inspectors who are blamed for the inconvenience.
Regulatory staff were not interviewed formally during this fieldwork, but comments
made during shadowing exercises suggested that these kinds of criticisms were an
outward sign of frustration, and a way for managers to offload some of the
annoyance they feel through a loss of control. The following section deals with this
issue in more depth.
6.7.2 Facing intrusion and losing control: 

Interviewees were asked about the specific requests of regulators once contact had been made (either face-to-face or over the telephone). Managers were generally happy to let regulators get on with their jobs, and aside from instances such as those described above, worked with visiting agencies to minimise disruption to operations. There were variations in this view across the sample, however. Nearly half of the smallest firms interviewed (1-70 employees) admitted to some kind of friction when dealing with regulators, and as the following quotes suggest, were more tightly wound than their counterparts in larger companies.

'I do tend to get a bit annoyed by it when it happens (having a regulator visit), and I don't really know why— they've got a job to do like me. I think it just riles me a bit... having someone snoop around... even if they're just looking at my records.'  

(Interview 21: Small oil processor)

'We don't see many people from regulators—from anywhere really—but there's always this suspicion what follows people like that around: “What are they really thinking, and am I doing things right here?”... that sort of thing.'  

(Interview 17: Small craft bakery)

These kinds of doubts were more common amongst the smaller firms because managers perhaps feel responsible to the company, and more personally attacked when questioned about the firm's activities are raised. The first interviewee (above) speaks of 'his' records, while the second makes reference to personal accountability, even though neither are owners of the firms in question. The process of being
regulated seems to place more stress on the firms where single individuals have responsibility for several aspects of the firm’s operations. While criticisms were still raised, larger companies took a more detached view when it came to regulatory approaches, and the same personal worries were absent.

‘When we get someone ringing us or coming to site to inspect, I see them first...usually... and then take them to whichever part of the plant they need to be in. If I don’t see them again that usually means they don’t want to complain about anything.’

(Interview 12: Small-medium veg/meat processor)

‘It’s a fact of business life in this country that people want to see what you’re doing and how well you’re doing it, so why get hot ‘n’ bothered about it?

(Interview 15: Small-medium sized brewery)

For firms of all sizes, the act of being regulated represents a form of control, which, potentially, can undermine the freedom of action managers expect to exercise in the running of their business. This intrusion can be indirect such as with the examples used above, or direct where regulation results in compulsory changes to the operation. Direct control over process activities, and the financial structure they are based on, is a critical function for managers of smaller firms, and is one of the features that distinguishes SMEs from larger operators, where such control may be located further away from the daily routine. Control over finances and investment decisions are taken by management working much closer to the operations of the firm, and limitations placed on these activities by regulatory acts impact more immediately on individual managers.
The final section in this chapter looks more closely at these impacts, and addresses some of the more personal, emotional responses managers have to regulation and the potential loss of control it entails.

6.7.3 Emotions and attitudes to regulation

Fineman (1996b; 1998) and Fineman and Sturdy (1999) suggest that regulatory encounters can be interpreted as displays of control that, while seemingly weighted in favour of the regulator, can be equally empowering for the regulated. Their work (discussed more thoroughly in chapter Three) looks at the act of regulation as a staged encounter that can have huge emotional drain on the key players. Not all of the staff interviewed during the research had direct contact with regulators. In some instances, regulator contact was achieved mainly over the telephone, and sometimes through letter or email. Judgements of regulator competence were therefore expressed differently across the sample depending upon the specific circumstance of the firm, and there was not enough information or experience within each SME to provide comparable responses across the firms interviewed. The analysis that follows is intended to highlight the particular issues SME managers have with regulation as a process, and how (and whether) they feel regulators are sensitive to the needs of their business.

The following transcript is taken from a discussion between an Environment Agency inspector and the environmental manager of a turkey farm in East
Yorkshire. Active in the meeting were the EA inspector, the environmental manager, and the general manager of the farms. The inspection was primarily concerned with nitrate run-off from the animal feeds and wastes, into watercourses and local aquifers. Although the meeting was witnessed first-hand by the author, the encounter was not recorded - the conversation is from field notes taken on the day.

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EA: 'The drainage channels are my main concern here. They're all appropriately dug out but the ones running to the south of the site empty into a ditch in the farmer's field. There's been some attempt at damming it, but there is still discolouration in the water.'

MG: 'Well that's what we were told to do by MAFF, they said that was sufficient.'

EA: 'It will need some further work to bring up the height of those end sections. Everything else seems to be okay with that, it's just that leakage will cause real problems when we get heavy rain.'

MG: (annoyed, looking at his manager) 'Look, we can only do what we're told here. The people from MAFF said what we had was sufficient; it just seems like you people are all working to different rules.'

EA: 'I can't really comment on that. It isn't really a matter for MAFF to get involved with...'

MG: (interrupting, clearly annoyed) 'It isn't really that much of a problem, and I think you know it isn't. Is it a case of just not wanting to give us 100% all clear?'
The Agency inspector involved said that this kind of direct confrontation was uncommon, but that frustration was a regular component in inspections of this kind. Frustration, he suggested, could occur for a number of reasons. The firm may have been trying to put off investing money, they may genuinely feel that the issue in question is irrelevant, or they may be aggrieved that an external body is directly influencing their actions. The environmental manager at this site was the manager for the whole operation, which included some three other farms, and was obviously unhappy with what he saw as the triviality of this infringement. When the inspector suggested that improvements were necessary, there was frustration that the Agency's view of the matter seemed at odds with those of MAFF, and that a situation deemed okay by one official body had been picked up by another. Later, back at the offices, there were more heated exchanges on the topic of compliance more generally – the environmental manager questioning why there were time-frames for the implementation of changes.

MG: '...You see, this is where it doesn't make any sense to me. You say that there's trust and that you believe we'll make these improvements, and yet you're contradicting that by telling me there's a time limit on it. And that you have to come again to check we've done it. Where's the trust there?'

EA: 'That's just the way the procedure works; we have paperwork that has to be in place, that's all.'
MG: 'In that case, I'll ring you when it's in place and save you the trip.'

EA: 'I appreciate that really, but I've still got to see it at some stage. You needn't be inconvenienced at all. I'll come and look at it then come and find you if you're on site.'

MG: 'No (angrily) ... what that means is you don't trust me to do it.'

In this case the damage had already been done during the earlier part of the visit, and the manager was just venting accumulated anger at the inspector prior to his departure. As the inspector commented after leaving site, there is a no-win situation in some instances like these. The firm may have been agreeing to the changes purely to get the inspector off site, and reduce the risk of further infringements being noticed. In this case, the likelihood of immediate compliance would have been slim. Alternatively, the firm may have been completely up-front about such issues and taken its responsibilities seriously, in which case the inspector's insistence on a return visit would serve to foster a sense of distrust, and thus damage the relationship on these grounds. The inspector suggested after the meeting that what can frustrate managers more is that someone who does not actually work in the industry is questioning their authority and knowledge, and, as was the case in this example, does not necessarily understand the process as well as the manager. The same frustrations are evident in several interviews:
‘You could laugh really, they come down here (Environmental Health) and tell us that the system is unsatisfactory. They’re only kids – we’ve been doing this since before they were born! At least get people involved with a bit of experience, people who’ve worked in the industry.’

(Interview 12: Small-medium veg processor)

‘At least when you deal with Yorkshire Water, you’re dealing with people who’ve worked in the industry. They’re engineers, technicians. Nothing irritates me more than getting some desk jockey on the phone telling me what I can and cannot do.’

(Interview 21: Small oil processor)

‘I know you shouldn’t make judgements, but I get a bit irritated when you get younger inexperienced people down here from Yorkshire Water or from the EHO. They’ll walk in and you say to yourself…fresh out of college!’

(Same)

Regulatory inspectors who have worked in the industry clearly have more credibility with SME managers than those without. In one way, this can be interpreted as a reaction to the fact that regulators are in a position to place direct pressure on companies to spend money if any of their operations breach regulatory requirements. This is a position of power that makes managers uncomfortable, and twenty of the thirty-eight SMEs interviewed expressed this discomfort by commenting on the suitability of the regulatory staff charged with inspecting their premises or operations.
‘I’m naturally distrustful of people coming on site inspecting things, but I suppose it’s a fact of life. I don’t like bods who clearly don’t know their right foot from their left, and believe me you get ‘em.’

(Interview 15: Small-medium sized brewery)

‘Yes...I’m quite happy with the fact that we rarely see anyone, but I have to say...some of the people who do come over here to inspect various things ...(exhales) ... they’re bloody useless. They don’t know what goes on here – it’s all from their manuals.’

(Interview 19: Medium-sized processor)

Experience in the same industry gives managers the sense that they are being judged by someone familiar with the routines and recognised problems specific to the sector. Consequently, managers felt they were more likely to develop good working relationships with regulatory inspectors if they had the necessary experience and ‘time served’ in the industry. Although face-to-face contact was not that frequent, eight managers (from the two larger size bands) admitted to feeling more comfortable communicating (by letter or face-to-face) with inspectors that had held technical or production related positions in industry.

‘The guy from Yorkshire Water is a good bloke. We usually end up having a brew and a chat when he comes. Last time he was here there were a few things he noticed with the drainage that he hadn’t seen before – he brought them up with me and I said “no problem, we’ll sort it out.” That’s the sort of relationship we need, not just: do this, do that, do the other.’

(Interview 25: Medium-sized meat processor)
'It goes back to what you said before about providing specialised help. A big part of that has got to be from regulators I think. If they're sending the wrong kind of people down here, it sends the wrong message.'

*(Interview 13: Small-medium sized drinks producer)*

With most aspects of regulation, SMEs managers expressed a preference for brevity and conciseness: the simpler and quicker the better. However, with the enforcement of regulations, more of a human touch is needed, and managers seem to respond favourably to inspectors who make some kind of effort to know the company, its managers and its problems. Where regulators merely cite regulations in black and white, and dictate what is and was is not acceptable, managers comment that there is no real motivation to become involved, as decisions have already been taken and the firm is beyond any kind of participation. Some went further than this, claiming that they were positively irritated when they received demands for improvements to be made.

‘Our MD is extremely old fashioned about these things. He believes there’s a way to do everything, and that goes for regulators as well: if they turn up here and just tell us to do certain things, he’ll tell ‘em where to go! He thinks there should be more give and take.’

*(Interview 31: Small confectionery producer)*

These observations suggest that familiarity and rapport are important base conditions for more effective regulation. In an ideal situation (such as that proposed in the single audit, last section), each firm would deal only with one appointed inspector, and this familiarity would be developed over a series of months. The
realities of staff rotation and multiple agency involvement mean that SMEs can be seeing number of different inspectors with differing understandings of industry procedures and operations. And, because SMEs themselves seldom have one point of contact for environmental issues, there can be two, three or more staff members in contact with regulators.

6.8 Chapter conclusions

Regulation and regulations, while to a large extent vital components of the business and environment agenda, clearly pose significant challenges to the SMEs in this sample both on a conceptual and practical level. There are areas in which the presence of mandatory regulations seems to work against the entrepreneurial freedom enjoyed by SMEs in other areas, creating a disharmony between state and industry. The comments of managers interviewed suggested that the regulatory regime is in need of overhaul, and structures more sympathetic to the needs of small businesses developing.

- Environmental regulation is a nebulous area for managers, and is frequently grouped together, and even confused with, other strands of regulation. Unlike other regulation, however (such as that pertaining to Health & Safety and traceability, for example), it is only the major pieces that are immediately recognised – the rest being paid scant attention, and in some instances being ignored. The environmental regulations affecting business
need classifying more effectively, and simplifying so as all are seen as equally important.

- Regulation is not the subject of a clear learning or training requirement within SMEs. Why such regulations are in place is rarely questioned, the result being that firms are less inclined to move beyond compliance. Like the awareness of environmental issues more generally, it is only select members of staff who are included in 'the loop' of regulatory affairs.

- Managers of smaller firms interviewed believe that, as they stand, environmental regulations do not fairly reflect the impacts and needs of smaller companies. The regulatory framework should be two- (or more) tier, to affect companies with different impacts and capacities to act in more suitable ways. The Food and Drink sector believes regulation should be scaled down, as it does not pose a major environmental threat.

- Although total amounts of regulation and legislation affecting the sector are small, interviewees are of the opinion that saturation point has been reached, and that the cumulative effect is greater than the sum of individual parts. Environmental regulation is not seen as a regulatory system in itself, but as acting in conjunction with other regulatory systems, the results therefore being more damaging.

- The encounters many staff have with environmental regulation is predominantly negative, and is therefore a poor motivator for change in other areas. Because it is built around legal mandates, and operated on the
basis of threat, regulation is not inspirational in any way, and does not act as the first step towards more widespread, voluntary change.

- Regulation is described as fragmented – both in the nature of regulations, and the number of organisations controlling the sector’s environmental impacts. Firms called for a more unified regulatory framework, possibly with one body monitoring all impacts.

- Regulators, while often seen as harmless, external contractors, have the power to disrupt ‘normal’ operations and impose penalties on those firms falling short of regulations. There can be frustration, annoyance and even anger brought into the equation when SMEs interact with regulators, and firms showed a preference for regulators with ‘time served’ in industry conditions.
7.1 Introduction:

The process of organisational learning (OL) is becoming recognised by progressive firms as a mechanism through which multiple facets of their operation can be improved. Training, innovation, marketing and sales have all, over the last ten or so years, been singled out as areas in which the 'learning organisation' can make significant competitive ground on the non-learning, or static organization (Nonaka, 1996; Levitt and March, 1996; March, 1996; Chaston, et al., 2001). But although the benefits of learning may seem obvious, many companies, both large and small, have either failed to see any potential in promoting systems thinking, or have simply refused to commit resources to developing a learning culture.

The understanding of environmental issues as a collective threat, involves the recognition of causes and impacts at a variety of different scales. Learning is the primary mechanism through which these disparate issues are forged into a more compete picture of environmental awareness on which managers act. In order to make more informed choices about where and when to commit resources, therefore, SMEs need to connect these individual areas of concern with the appropriate parts of their business. Senge (1990) has suggested that OL involves the utilisation of interrelationships rather than independent systems, and seeing patterns rather than static snapshots – essentially the understanding of 'interconnectedness' within
business thinking. Learning is the only mechanism through which SMEs can increase their environmental awareness and subsequent performance. Perhaps as importantly, it is the process that enables firms with inaccurate or incomplete knowledge to understand how their thinking may be improved to the benefit of the environment.

More importantly than this, learning encourages the development of structures within the organisation that promote future learning, and an ongoing learning culture. Because environmental legislation and stakeholder concerns are subject to frequent shifts in direction and intensity, continuous learning and mechanisms for organisational adaptation are essential. As Petts et al. (1998) suggest, theories of organisational learning are crucial to corporate greening because they stress systems thinking within the company: ‘They give individuals a shared responsibility for the problems generated by the system as a whole; they advance individuals as equally important as the management team; and they encourage corporate structures that support learning and reject functional divisions’ (p. 715).

7.1.1 - Learning and systems thinking

Richard Welford (1996) suggests effective environmental management be based on this kind of logic, and stresses the importance of learning all through the firm from top to bottom. Put simply, it is argued that systems thinking can help internalise environmental concerns, and encourage all levels of employee within the firm to
contribute to environmental goals. As this chapter will suggest, the systems thinking referred to by Petts et al., and the inter- and intra-organisational learning/sharing of knowledge required, are as yet either not fully recognised in many areas of business, or are dismissed as irrelevant (Kolb, 1996; Coopey, 1996), thus remaining largely unfulfilled ideals. Learning is a secondary, and very much reactionary mechanism that does not involve the individual specialisms of many of the SME staff.

The remainder of this chapter seeks to understand how and when individuals learn about the environment, and whether that learning is transferred into positive outcomes for the company. To do this, it is critical to first understand the motivational factors at work within SMEs, and how these are played out alongside other requirements for action within the food-sector. What stimulates learning in the people who control SMEs? What do they do with this learning? It is equally important to throw light on how this learning takes place: the people concerned, the basic concepts, modes of communication and action. Indeed, is there any such thing as organisational learning, or is all learning by definition individual? Early OL literature has much to say on these issues, and as Chapter 2 illustrated in more detail, the last twenty years have seen a rapid increase in the study of all things organisational, with the concepts of learning and change perhaps the most rigorously explored.
It is important to point out at this early stage that previous OL literature (March, 1996; Levitt and March, 1996; Nonaka, 1996) has been concerned primarily with learning that is centred on new ideas, new technologies, and the advancement of companies’ competitive and innovative capacity – that is, learning centred around an easily definable end goal. As such, the seminal texts (Cyert & March, 1963; Argyris, 1964; March, 1996; Levitt and March, 1996; Nonaka, 1996) have tended to treat the objects of organisational learning as rather an abstract set of concepts and ideas, and are theoretical and non-specific in nature. This is most probably to broaden their applicability. Flexibility, discovery, adaptation, exploration and exploitation are made the focus of learning theory rather than the more practical concerns to which these ideas apply. There is thus a paucity of learning literature directly related to developments in production, marketing and sales, and consequently on the environmental concerns such activities create.

7.2 OL and environmental issues

Learning about the environment and environmental impacts is somewhat different to other kinds of company learning in that it involves all of these abstract ideas, and yet, is a concept that is in essence greater than the sum of its parts. It presents a learning challenge that reaches beyond these individual components and into areas that, potentially at least, threaten to disrupt those basic concepts of right and wrong, and acceptable and unacceptable behaviour business usually assumes as concrete. Indeed, this challenge to conventional ways of looking at business is one of the
reasons why an environmental awareness is increasingly being 'sold' to business very much as a competitive and innovative mechanism. By approaching environmental issues through familiar business concepts such as the supply-chain, input-output models and management systems, this new and, for some, threatening agenda is made to seem more business-friendly and not as far removed from normal routine.

Although environmental learning is different to other aspects of company learning in several ways (detailed later in this chapter), the following sections will propose that this is not the reason many firms fail to learn about environmental impacts, and how they can be approached. Learning itself, and the limited capacity many SMEs have for developing a 'learning culture', prevents them from absorbing information on a range of different issues, and in ways that can be utilised to the benefit of the firm. It is argued that, while information providers must carry some of the responsibility for fostering a climate non-conducive to learning, SMEs also need to recognise the advantages – to their economic performance and also their worker commitment – active and ongoing learning can create.

7.2.1 A need for learning

The growth in importance of environmental issues and legislation presents new challenges for companies of all sizes, and accordingly, for the models of learning that have traditionally been applied to other aspects of firms' operations. As well as
posing an economic uncertainty for many small businesses, the inclusion of environmental issues is tied into the moral and ethical beliefs of company managers, as well as into the complex legalities of legislation and regulation. Fiona Tilley’s (1998; 2000) research into the ethics of small firms in Leeds, West Yorkshire, has suggested that despite sympathy for their environmental impacts, an environmental ethic, as such, was non-existent (See chapter 6 for more on ethics). The demands of the market economy in which firms operate set the parameters of what is ethically acceptable for the SME. Tilley’s research seems consistent with responses from this study where managers argued that environmental ethics were less important than ethical responsibilities to the workforce. Similarly, the requirements to meet legislation, while in some ways a driver of learning, may also act as a disincentive for managers to go above and beyond what is required by law. Through its coverage in the media, the environmental agenda is frequently perceived as overtly scientific in nature, and therefore outside the scope of what are normally considered regular business education issues.

How the learning and operationalization of environmental issues is achieved by SMEs, and whether this process can be understood using current OL approaches, is brought into question by considering these factors. Psychological responses, socialisation, and business-culture may in fact play a larger part in affecting the learning capacity of the firm, than in other product innovation- or promotion-centred aspects of company development. These factors may drive or inhibit companies to become involved in environmental initiatives and affect their learning potential.
7.2.2 Difficulties in accepting learning in business

In learning about environmental impacts companies are learning about principles and priorities that are not – at least initially – seen as explicitly business-oriented. Despite the potential economic benefit of environmental improvements, managers initially resist any suggestion that learning is a core requirement that can be used to the economic benefit of the firm. As interviews in previous chapters have suggested, environmental issues tend to be regarded as quasi-scientific. Over three quarters of the managers interviewed found this reason enough to distance the environment from other important areas within their operation. The other main reasons for not actively pursuing environmental information were:

- Issues too complex
- Environment not relevant or suitable for inclusion with regular issues
- No time to do it
- Learning handled by another body (i.e. trade association)

To confront environmental impacts is to confront scientific issues (and it should be said, scientific uncertainties) - a merging of interests that is often seen as untenable at the basic level. Any suggestion that learning is necessary is treated with scepticism.
‘I’m not quite sure what you’re getting at there (learning about environmental issues) – the environment is something that concerns us all certainly, but I wouldn’t say we consciously sit down and say, “right...among this week’s jobs are...” you, know, in that kind of way.’

(Interview 37: Small-medium veg processor)

‘I wouldn’t be quite sure how the firm would approach that one. It isn’t the kind of thing that fits well with the other things we’re concerned about that’s the only problem insofar as learning goes. It’s like, okay what do we need to know then?’

(Interview 33: Medium-sized processor)

‘I think that you have to differentiate there. Our trade organisation learns about what we need to know, then they tell us. Is that the same as us learning? There are people better qualified to handle that kind of issue – I mean to do the digging and such – I’m not sure how good we’d be at it.’

(Interview 19: Medium-sized processor)

SMEs are faced with the prospect of having to internalise many of the functions they have previously considered as externalities (waste issues, emissions, recycling targets, etc.), and place the environment more centrally as the subject of continual improvement. As these quotes suggest, placing the environment at all seems to be a dilemma for the managers interviewed. There is considerable inertia surrounding these issues, and reluctance to accept that there is even a need for learning.

Because environmental issues are perceived as being ill defined, a nebulous set of ideals even (see Purvis et al., 2000), there is the prospect of becoming bogged down in ‘fringe issues’ and never actually getting to grips with the issues that matter. As
an operations manager for a fish-processing firm pointed out, time spent educating
the company about environmental initiatives is time that could be more profitably
spent with sales training, performance appraisal and other activities directly related
to bottom-line. His comments suggest an implicit belief that environmental
improvements — and the prerequisite learning — do not fit in with the firm’s idea of
‘time well spent’.

The reluctance of SMEs to become involved in learning, is a trend well documented
in previous research (for example, Easterby-Smith, 1997; Fryer, 1997). Smaller
firms seldom have the structural requirements to make learning a regular activity in
any area. Management structures are ill suited to research, and as Bent et al. (2000)
have suggested, poorly adjusted to distributing new information around the
workforce. Continuous self-monitoring and improvement are key components of
environmental management systems, and companies have to become fluent in
monitoring, evaluation and reflective assessment. In other words, they have to learn
how to learn on a continual basis. The ways this may be achieved are discussed in
the following sections.

7.3 Types of learning

Despite these barriers, there are companies that have embraced environmental
learning, and in ways that fit with the models of OL put forward in Chapter 2.
Some organisations clearly see environmental initiatives as just another way of
reaching customers and satisfying a market demand. To this end, engaging in learning and discovering the potential for cost-reduction or the cleaner image such learning can deliver, is viewed merely as a means to an end, and is no more challenging than other areas of product development. But what does learning actually mean within the firm? Can we make any kind of distinction between individual members of the organisation learning, and the firm as a whole learning? As Chapter 2 suggested in more detail, much of the OL literature has grappled with this polarity in some form or another, and although it is difficult – and perhaps even unproductive – to suggest a clear distinction, it is useful to consider how environmental learning may span these two approaches to the theory.

7.3.1 Technical (individual) learning

One of the major distinctions within the OL literature centres on whether learning is classified an individual or social process. The difference in these two positions can be defined as the relative importance given to individual and collective learning capacity. Technical learning assumes that OL is the effective processing, interpretation of, and response to information, both inside and outside the organisation (Easterby-Smith and Araujo, 1999). By definition, this learning takes place by individuals. Huber (1991: 89), one of the leading proponents of the ‘technical school’ suggests that, “An entity learns if, through its processing of information, the range of its potential behaviours is changed…an organisation learns if any of its units acquires knowledge that it recognises as potentially useful to the
organisation." The emphasis is placed on the independent nodes functioning within the organisation, or in other words, the thinking abilities of the individuals making up the whole.

In the interviews, learning, however defined, is considered the responsibility of individuals. These individuals then act on that new knowledge by either instigating change themselves (the purchase of new equipment or change to processes, for example), or by the circulation of that learning to other staff members (this could be other managers or much larger portions of the workforce, such as an efficiency drive). In some instances, of course, learning by the individual does not culminate in any action at all.

The following examples suggest that where learning occurs, it is the duty of one person or department to 'acquire' the knowledge and then action it as they see fit. More than this, it is higher management who are seen as the ones best placed to perform this role, and other staff members simply to act on their findings.

"Learning...the people in the management positions are the ones who tend to do that because they are better placed to get information, and judge whether we can use it. If we learn about something we need to do or change, the production or technical managers are the ones who learn and then advise everyone else."

(Interview 9: Medium-sized fish processor)

"That's difficult to answer because it's not something we're conscious of really. I suppose we learn every time we come across something we can utilise in some
way – new equipment, new laws, etc. Only certain people are placed to do that
though.’

(Interview 14: Medium-sized oil processor)

‘I’m not sure how that happens if I’m honest, but if you’re asking me who gets
involved it’s really just management positions. They are the ones who are in the
best positions to learn about anything that could benefit us I think.’

(Interview 25: Medium-sized meat processor)

In this individual context, learning can theoretically occur at many different levels
within the firm, and at any point in the organisation’s management structure.
Crucially, however, it is only select individuals who are involved. The responses
suggest that the hierarchical structure of SMEs seems always to place those near the
top as most likely to learn new information and share it, if they see fit. Managers
interviewed do not speak of learning as an interactive process, in which knowledge
flows are bottom-up as well as top-down, and no recognition of group learning is
suggested. This fits with suggestions made in the previous chapter where
environmental knowledge is usually seen as being the responsibility of a minority in
the SME, and supports suggestions that management prefer to keep these kind of
issues closer to senior levels. In contrast is the social, or interactive learning, in
which the human resources of the firm are actively engaged in the creation and
distribution of knowledge.

Interviews also suggested that learning was mainly triggered by singular episodes in
the company’s development (see 5.3.3), and as these episodes were normally the
responsibility of one staff member, it was this person who invariably learned how to
overcome it. The SME ‘switched’ into its learning mode as and when circumstances required, and there was no suggestion that position extended to ongoing learning:

‘That’s part of the idea of line managers isn’t it? If there is a need for something to enable staff below them to do there job, they’re responsible for getting that something – whether it be information, more staff…’

(Interview 26: Medium-sized drinks processor)

‘We are on the lookout for things, certainly. If a problem or opportunity reared its head in Production say, we’d obviously want our Production Manager to learn how to deal with it or exploit it, or whatever. I wouldn’t say that we’re a learning company all the time though.’

(Interview 12: Small-medium processor)

‘I don’t think you can learn about environmental things in the same way as other stuff, can you? If somebody from one department tells you there’s a problem, you assume they’re right. They act to sort it out, then you carry on.’

(Interview 1: Small ice cream manufacturer)

This idea of individual learning is deeply embedded in all organisations, due mainly to the accepted logic that requires separate divisions/departments in an organisation to be managed by individual expertise. The comments of the three managers above underline this clearly, and implicit in their views is the assumption that, ‘if it isn’t in our department, it’s someone else’s job to sort it out.’ This kind of reasoning, while common amongst the managers interviewed, does little to foster any sense of shared responsibility, and the notion that four or five minds may be more effective than
one. Interactive learning models reject this top-down approach, and look to greater participation from people across the organisation.

7.3.2 Social (interactive) learning

Social learning approaches do not reject the idea of individual learning, but place greater emphasis on the sum of shared experiences and insights. So while managerial positions may still be charged with much of the SME's learning, it is done alongside and between learning at different levels of the firm: shop floor, consultancy, purchasing, engineering, for example. In this way, as Nonaka (1996) suggests, knowledge is created within the firm, rather than simply 'learned' from an outside source.

Nonaka's work (detailed more extensively in chapter 2), and indeed much of the theoretical literature on learning organisations (for example, Senge, 1990; Weick and Roberts, 1993; March, 1996), relates to large Japanese and American multi-nationals, which seem initially to have little in common with small food-sector enterprises. Interviews suggest, however, that the same employee insights and tacit knowledges are available (for example, skills and procedures developed by years of service, ideas generated by interaction with other staff, etc.), and even recognised by management level employees.
‘We support an open-door policy with regard employees. They are free to offer whatever suggestions they have. We encourage it because there are staff out there (points to factory) who’ve been doing this longer than me.’

(Interview 26: Medium-sized drinks firm)

‘I’m sure there are workers who have their own ideas on how we could improve efficiency and other things. It isn’t always practical to get everyone together to discuss it though.’

(Interview 11: Small-medium fish processor)

‘The employees could probably run this operation as well as we do – they’d say better – there’s lots of good practical knowledge on the shop floor.’

(Interview 10: Small potato processor)

‘Just because someone drives a fork truck all day or packs boxes doesn’t mean they don’t have opinions on how other parts of the business work – in fact, it may be even more so.’

(Interview 13: Small-medium drinks firm)

These quotes show recognition of the latent expertise in levels of the firm other than senior management. They also suggest that, potentially at least, managers are prepared to look at experience, local knowledge and familiarity with routine operations, as important ingredients for more widespread adaptation and change. Managers appeared aware of this largely untapped resource, but, as other material highlighted, were either unable or unwilling to utilise these skills to become a learning organisation, in the way suggested by Nonaka.
'In an organisation like this, it’s all very well to talk about that (employee involvement), but how can we realistically bring everyone together to pool their ideas? It’s just unrealistic.'

(Interview 5: Medium-sized fish processor)

'There’s too much tension between management and shop floor to make that work practically (laughs). I can see where there may be advantages certainly, but traditionally, management and shop floor have occupied very different spheres, and they’re not meant to work side-by-side in that way. I don’t mean they couldn’t contribute, but...it’s just a bit awkward expecting a smooth join like you’re suggesting.'

(Interview 20: Small bakery)

'...It’s not a practical solution. We always ask for contributions from the workforce – ideas and the like... but there couldn’t be any breaking down of the boundaries. The whole idea of management and non-management relies on the fact that there are decision-makers and non-decision-makers.'

(Interview 12: Small-med meat/veg processor)

Section 5.3 discusses employee participation and motivation in more depth, and suggests reasons for this reluctance, but at a basic level, management display a largely myopic attitude towards the learning capacity of the workforce. Regardless of which OL theory is employed, the SMEs interviewed were all more heavily drawn to the consistencies and guarantees of ‘old management’ styles, rather than using the workforce in less traditional and potentially innovative ways. Argyris and Schon’s (1978) ideas of single and double loop learning (see chapter 2) suggests that for long-term change, an organisation needs to address corporate strategy, personnel and entire systems in its learning goals. Using their model, many of the interviewees’ responses can be interpreted as single-loop, as they rarely look deeper
into the problems or issues, and fail to see the potential of using more socially inclusive/participative approaches in their operations. One of the causes and symptoms of this shortfall is that learning is not an ongoing process for many SMEs, and occurs only when the firm identifies a clear need to learn. Interviews suggest that learning is mainly triggered by singular episodes, and SMEs 'switch' in and out of this state as and when circumstances require.

7.3.3 Learning as an episodic process:

To explain the absence of a learning culture, it is necessary to identify the 'learning demands' on SME management, and which pressures, if any, encourage the firm to learn. It has been suggested in chapters 4 and 5 that environmental action is primarily regulation driven, and that little happens without the push of regulatory demands, or specific market requirements that the firm believes will affect business. It would seem reasonable to assume that the same holds true with the process of learning in the smaller firm, since learning precedes action. Firms were responsive to questions of learning on a general basis, but more vague on the specifics of environmental learning. The recent traumas of the farming and food production industries were at the heart of these comments.

'We have learnt a lot over these last few years let me tell you! It's the big things that make you really...you either learn or get left behind.'

(Interview 31: Small confectionery firm)
‘I think there are several times over the last year where we’ve really sat up and though, “We need to know more about this or that.” It’s happened mainly as a consequence of the BSE and GM issues. You wouldn’t think those things affected us but they do in subtle ways.’

(Interview 23: Medium-sized drinks firm)

‘If someone comes along and tells us that we’re doing something wrong...something that is against the law, then we’ll obviously take whatever steps are required to rectify it. We’ll do what they tell us, or at least find out what we need to do. Other than that, what can you do but just get on with things?’

(Interview 12: Small-medium processor)

With all the companies interviewed, environmental learning was not considered a distinct, or indeed important issue in its own right, regardless of company size and structure.

**Drivers of SME learning (about any issue):**

1) Legislation/regulation requires more knowledge

2) Health and safety scares

2) Feel we can achieve more by learning more

3) Parent company requires us to learn more about specific issues

4) Market demands us to take on more knowledge to compete

Table 7.1: Drivers of learning in companies interviewed (Ranked)

As Table 7.1 indicates, the primary reasons for learning put forward by management are episodic events, and are not part of a continuous learning programme. All 38
companies admitted that what they considered to be active learning (that is, acquiring competencies or knowledge not previously possessed) only took place in response to a singular event or threat – that is, a legislative shift, a new law or some other immediate pressure. These observations seem to support criticisms put forward by David Kolb regarding the perceptions of learning in an organisational environment. Kolb (1996) identifies what he terms a kind of fatalism about learning, in that an entity either learns or it does not. The switch only has two positions, and when a company finds itself in a situation where knowledge is required, the learning period is typically short, involves a minimum of company staff, and is restricted to information that goes no further than immediate requirements.

7.4 Denial and company image

Companies learn about environmental impacts and obligations from a number of external sources (more details are provided in Chapter 4), and for a number of contrasting reasons (legislative requirements, supply chain pressure, company image). But with all firms, the process is initiated and maintained very much as a preparatory mechanism to counter what are commonly seen as disruptions to ‘normal operations’ in the firm. Environmental improvements required to comply with legislative demands or supply-chain pressures are considered as being ‘outside’ reasonable demands if they have no obvious benefit to the company, and thus learning is not actively pursued.
‘There isn’t much you can do about it really…if the law changes and we’re required to meet new standards we have to learn about them and carry them out sure. What it really boils down to is being able to carry on producing without disruption.’

(Interview 30: Medium-sized bakery)

Previous literature exploring firms’ failure to learn has suggested that the ‘It couldn’t happen to us’ argument is the one most frequently used by companies when confronted with their lack of learning structure and capacity for dealing with change (Elliot et al., 2000). When confronted with potential crisis or risk, managers are more likely to deny their firm’s susceptibility to the effects than confront and deal with them. These arguments are usually based around the fears of one-off environmental incidents however, and as such are not intended to account for the cumulative and longer-term effects of companies’ environmental performance. Although there is awareness of environmental issues on a general level, current impacts are not considered immediate or threatening enough to elevate the environment to a level where learning is automatic and ongoing.

‘It comes down to time as well doesn’t it? I’m sure there are firms out there who are clued up about environmental things, but we can’t really justify sending people on courses for things that at the end of the day don’t affect us that much.’

(Interview 27: Small-medium food processor)

‘Subscribing to specialist publications and sending staff on courses would be one way (of learning) I suppose, but we neither have the time or finances to do that. We just watch for the things relevant to us, environmental or otherwise.’

(Interview 29: Small meat processor)
'There's not what I'd call much urgency in some of the arguments I've seen for more environmental initiatives to be fair. For us it would have to reach out and grab us if we were to reach a stage where the environment was always a priority issue for learning.'

*(Interview 21: Small oil processor)*

SMEs are thus learning about environmental impacts and requirements only when confronted by potential crises or threats, which in the context of food-sector enterprises, take the form of legislative penalties, or more rarely, supply-chain delisting and community pressure. On a sample-wide basis, these kinds of factors do not form a cogent or sustained threat that creates the need for learning above what has been declared. Pressure is seldom applied consistently to SMEs, and in many cases, it is local environmental incidents that have driven learning, more out of a desire to avoid future incidents that to equip the firm with more general environmental knowledge

'...You learn the hard way, don't you? We had a nasty spill of solvent a year ago – we managed to stop any getting off site and into the river, but it was all over the place, here...there... Management hadn't experienced anything like that before, so it was a case of ringing people up, asking what to do, where to put it, and all the rest. We learnt!'

*(Interview 12: Small-medium veg processor)*

'We've had one or two incidents where the locals have complained about odours. We weren't actually sure where the smells were coming from at first or what they were, so we investigated and found the cause. It hasn't been a problem since.'

*(Interview 37: Medium sized bakery)*
The managers who had taken action because of a complaint treated these incidents as very much an inescapable fact of business life. Being caught out once or twice was seen as an acceptable price, even if it meant paying a fine or facing community pressures. Again, these instances suggest that the SMEs interviewed were single-loop learners, and while they rectified the problems at hand, did little to integrate the learning into their operations for future reference.

7.5 Differences in small and large firms

The form of this learning is found to differ, however, according to the institutional complexity of the firm in question. Smaller firms without multiple layers of management (for example, those in the 3-70 bracket) see risks to their future more clearly than larger operations, and while in general their knowledge is not as developed, their attitudes to learning are more positive. The buffering effect of several management tiers, and in some instances the security of public company ownership, seemed to make the larger firms less interested in developing a learning culture, and putting into place mechanisms to monitor learning requirements. There is an assumption implicit in many larger firms’ responses that things will be taken care of by someone else, and that if a threat is large enough, it will present itself to the company.

'We have trade associations there to look after these things for us – there’s not a lot of point in repetition.'

(Interview 8: Medium-sized potato processor)
‘We’re reasonably confident that everything big is covered. If there are other things we need to know there are people we pay to sort it out for us, and I suppose at the end of the day if we get it wrong we get fined.’

(Interview 26: Medium-sized drinks firm)

‘I think everything we need to know we know – there are people in the administrative department whose job it is to see to those things. As a line manager, all I can do is assume we’re in line…’

(Interview 25: Medium-sized meat processor)

In contrast, smaller SMEs and micro-enterprises were a lot more aware that a failure to take on board the correct information could have serious and potentially terminal effects on the company’s future. The Environment Agency’s packaging waste officers claim that it is invariably the smaller firms who contact them with queries about compliance, and questions about what will happen if they are found in violation (EA inspector, pers. comm.).

‘The worry for us is that if we don’t keep our eye on the ball so to speak, we might get a knock on the door a few months down the line with someone saying we owe them money, or worse they want us in court. It’s happened to other firms I know.’

(Interview 17: Small craft bakery)

‘I don’t have much time to be honest because I tend to do everything myself, but one thing you are conscious of is that if you miss important things it could spell big problems.’

(Interview 3: Small fish processor)
'We tend to get a lot of material coming through on a lot of different issues really, and I'm always keen to see if any of it can be of use. Most of it's trash, but it doesn't hurt any to look through it to see if we can learn something new.'

(Interview 20: Small bakery)

These differences present a paradoxical situation where the firms with greater capacity to act are in general the ones who direct the least resources towards active learning, while the smaller firms seem to have the necessary impetus and drive to learn more, if not the resources. This raises questions both about the provision of environmental information in general terms (discussed more in Chapter 4), and whether smaller SMEs are placed at a disadvantage in terms of their learning requirements. As many managers have pointed out during interview, the penalties for lack of compliance are equal for all firms, but can affect smaller companies with a limited cash flow to a greater extent. Restrictions placed on smaller firms, and warning notices for non-compliance tend not to take into account capacity to act. Trade bodies have called for a more equitable system where these kinds of restrictions are more fairly based on firms' capacity to learn and capacity to take action. In some instances, however, learning is not a powerful enough motivator to bring about change; the following section examines instances where learning takes place but is not followed by positive action.

7.6 Learning without acting

In the example of the bakery used earlier, the learning leads to a positive outcome for the company - the dough mix being stabilised through procedural action enabled
by either single- or double-loop learning. Huber (1996: 126) points out however that, "learning does not necessarily have to result in an increase in the learner’s effectiveness or even potential effectiveness." The implication in much writing (for example Argyris and Schon, 1978; Fiol and Lyles, 1985) is that increases in operational effectiveness are a prerequisite condition for OL to have occurred. It is possible for organisations to learn without changing behaviour, however; learning need not precipitate action. Friedlander (1983: 194) suggests that this is often the case, and claims that, "Change resulting from learning need not be visibly behavioural. Learning may result in new and significant insights and awareness that dictate no behavioural change." These are the kind of changes to which Huber alludes when he cites learning potential rather than direct learning outcomes. In this instance technical learning is not measured simply by what the organisation has achieved, but by what it is capable of achieving as a result of learning.

Again, however, it may be naïve to assume that just because an organisation learns it goes on to utilise that learning. The interviews suggest that, in many cases, firms have learned about specific environmental issues, but have subsequently remained inactive. Table 7.2 gives some examples of environmental work mentioned by SMEs during interview, but not yet actioned. It suggests that information has got through to the firms, but has as yet remained latent. Knowledge required to make improvements is in place, but because the knowledge is not perceived as being important, or because circumstances dictate, other matters come first.
<table>
<thead>
<tr>
<th>Area of env. improvement</th>
<th>WATER MANAGEMENT</th>
<th>ENERGY EFFICIENCY</th>
<th>WASTE MANAGEMENT</th>
<th>RAW MATERIALS</th>
<th>ENV’MTAL MANAGEMENT</th>
<th>ENV’MTAL POLICY</th>
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<tr>
<td>SME size band</td>
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<tr>
<td>1-70</td>
<td>• Gun triggers for hoses</td>
<td>• EE lighting</td>
<td>• Recyling of organics</td>
<td>• Use of thinner packaging</td>
<td>• Use of posters in plant</td>
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<td></td>
<td>• New water meters</td>
<td>• New oven</td>
<td>• Special waste skip</td>
<td>• Use of low conc. cleaning fluid</td>
<td>• Training of staff</td>
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<td></td>
<td>• Movement sensors</td>
<td>• Movement</td>
<td>• Splitting of waste stream</td>
<td>• Use of low conc. cleaning fluid</td>
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<td></td>
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<td>sensors</td>
<td>• Use of thinner packaging</td>
<td>• Use of low conc. cleaning fluid</td>
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<tr>
<td>71-150</td>
<td>• Return of unused water to borehole</td>
<td>• New motors for conveyers</td>
<td>• Splitting of waste stream</td>
<td>• Use of low conc. cleaning fluid</td>
<td>• Training of staff</td>
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<td></td>
<td>• New water meters</td>
<td>• Variable speed motors for belts</td>
<td>• Splitting of waste stream</td>
<td>• Use of low conc. cleaning fluid</td>
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<td>151-250</td>
<td>• Installation of multiple water meters</td>
<td>• Replacement of freezer storage gear</td>
<td>• Attempts to use less pack material</td>
<td>• Appointment of Env manager</td>
<td>• Publication of first policy</td>
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<td></td>
<td>• Reuse of wash-down water</td>
<td>• Variable speed motors for belts</td>
<td>• Replacement of freezer storage gear</td>
<td>• Recovery of parts of packaging</td>
<td>• Consultation with staff</td>
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<td></td>
<td>• New pipework</td>
<td>• Variable speed motors for belts</td>
<td>• Replacement of freezer storage gear</td>
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<td>• Movement sensors</td>
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<td>Others</td>
<td>• New water meters</td>
<td>• Variable speed motors for belts</td>
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Table 7.2: Sample of environmental improvements planned/discussed but not yet implemented in a range of SMEs
'We've had information packs through from the Trade Association, from the ETBPP, from a load of people actually, and if I'm honest then no, we haven't done much about it. There are areas where we could do a lot more but aren't doing.'

(Interview 13: Small-medium drinks firm)

'In an ideal world then yes, there are plenty of things we could do around the plant to improve environmentally: lighting, leakage of pipes, that sort of thing. But it doesn't always follow that we act on what we know...we can't.'

(Interview 8: Small-medium crisp manufacturer)

'I think at heart we all (meaning firms) know we can do more, but it's the economic argument again.'

(Interview 21: Small oil processor)

There was no pattern evident among the firms displaying these attitudes, and companies from all three size bands showed equal reluctance to get involved making improvements. Water management and energy efficiency were the most common areas of awareness, and also of inaction. Environmental impacts surrounding waste management and raw material use were less clearly articulated and also acted upon. So while companies learn in response to threat or opportunity, they also learn about the environment and their environmental impacts at times that are not necessarily when they are ready to act.

The following example illustrates the case in point, and suggests that in some instances, firms may simply feel more comfortable possessing the knowledge with which to make the improvements, even if they never really intend to use it. The
Baxter Foods Ltd., based in Hull, provide a good example of this under-utilised learning. Baxter are a medium-sized operation employing 220 people on site; their main produce are Yorkshire puddings and dough-based products. Eddie Barnes, the company’s site services manager, has recently completed an environmental management diploma as part of his personal development appraisal. As Site Services Manager, Eddie’s responsibilities include service engineering (compression, water treatment and refrigeration), waste disposal and other environmental issues. The company thought it would be a good idea to have someone based on site who had understanding of the regulatory process and be able to deal with customer requests for technical or environmental information. During the diploma, Eddie learned about the various aspects of environmental management but also some of the more technical details involved in energy reduction as applied to refrigeration and compression equipment.

'The course was quite technical in places, and some of it was over my head to be honest. We covered stuff on EM – ISO 14000 - but there were sections more practically orientated at various technologies and newer advancements....'
In terms of utilising Eddie's skills and learning, Baxter are using only a small amount of what they have paid for him to learn. Should regulatory irregularities or customer requests be raised, the firm now has the learning to deal effectively with these, but they have no plans to put the bulk of Eddie's knowledge to work within the firm. Eddie says he has become aware of several areas in which the company could invest to become more environmentally active, and save money in the longer term. The company are using old, inefficient motors on their product conveyers which could easily be replaced, and are being wasteful with both fresh and used water throughout the plant. Eddie says that the company is now aware of these inefficiencies and how they could be rectified, but that there are insufficient funds to use at present.

'It's a shame really, because they spend money sending me on courses and then only use what I know as and when it suits them. I'm not an expert now or anything, but there's so much they could do around here.'

Baxter, as an organisation, now have the knowledge to achieve much more environmentally, but choose not to act on this learning. This could be for a number of reasons, but as has been the case throughout the thesis, finance was put forward as a major issue.

Baxter are a major supplier to several supermarkets, and for one, they are sole supplier for frozen Yorkshire puddings and pudding mix. During the interview Eddie confessed that one of the senior management's real fears is of not being able
to meet supermarket demand, which has risen steeply over recent years. Given Baxter's financial success in the market place, this could be a more pressing reason for the firm's reluctance to act on what it knows, and implement environmental initiatives. Even with a trained staff member on the management team, and specialised knowledge in place, there is still significant disruption risk to normal routine in acting on environmental knowledge.

Learning, Swieringa and Wierdsma (1992) suggest, is as much about the will and courage to act, as it is about acquiring skills and knowledge. This is an important distinction because, while companies may acquire new information from a range of different sources – for example, regulators, trade associations, or as in the previous case study, training courses – some would argue that they have not learned as an organization until this information is operationalized to change, and presumably improve, their companies' processes and operations. With Baxter's case, the learning is in place, as, so it is claimed, are the finances to act. The only restraining factor, therefore, is the belief that changes cannot be brought about successfully without compromising the firm's production capacity. Another firm interviewed admitted to having learned about environmental improvement, but also of having to put any action 'on hold' until it fitted more comfortably with existing priorities, procedural realignments and even times of the year. The threat of disrupting current operations can often be a more cogent issue to firms than optimising environmental performance, even when there are financial payoffs available. Again, all names used are fictitious.
Tony Alfrezi, the owner of Yorkshire-based Marshall's Ice Cream, commented that he was well aware of his company's environmental impacts and obligations. Marshall's have been producing ice cream on the East Coast of Yorkshire since the 1950s, and during summer the plant doubles as an ice cream parlour open to the public. The plant produces all year, but during the spring and summer months there is a large surge in demand, both from wholesalers and holidaymakers at the resort town. His own interest in environmental issues, coupled with the information fed to him by the Ice Cream Alliance (the ice cream trade association), give him what he describes as a 'complete picture' of what needs to be done to at least improve his firm's environmental standards and meet legislation. There is, he continues, a considerable gulf between his knowledge - what he had learned about what is environmentally beneficial - and what he can practically achieve, however. He is aware, for example, of the 'massive amounts of power' used during the heat treatment, pasteurization and refrigeration stages of his operation - a result of largely outdated and inefficient equipment. He is also aware that much of his cleaning - the wash-off of machinery and floors - requires the flushing of limited ice-cream components into the foul and storm drain unfiltered.

'It isn't so much that I don't know that this can be improved upon, it's just that we operate to such a tight schedule around here that if I were to even consider new equipment, even aside from the cost there would be huge disruption to my
In this instance, the will and courage to act are present, as are the competencies referred to by Swieringa and Wierdsma. The learning is clearly present, but Mr. Alfrezi does not believe that putting this knowledge into action will benefit his business in terms of customer satisfaction. The environmental improvements needed by his firm to cut back on energy use and reduce the amounts of effluent going to drain are seen as disruptive to the supply continuity of his operation, regardless of the financial savings they would make in terms of electricity and water bills. In this instance the current situation, while by his own admission not ideal, is viewed as more beneficial to the logistics and cash flow of his micro-enterprise. He acknowledges the potential for financial savings and environmental improvements, but refuses to put at risk valued custom by shutting down his operations for the time it would require to implement changes. If the supply chain were equally aware and sympathetic to the needs of the environment, he argues, then that would give him the opportunity to make changes, although he admits that the financial aspect may still present a problem.

'At the end of the day, my customers aren’t bothered what goes on here so long as they’re getting what they order when they want it – and that the quality’s okay… I can’t believe that if I said to them, “Get your supplies from so and so for a few weeks while we do such and such at the plant” that they’d all come back when it was done. That isn’t the way our market works; you lose a customer, you lose them for good.'
Marshall's Ice Cream is environmentally knowledgeable in that it is aware some of its activities can be improved to the benefit of the environment. Through the owner's interest and general awareness of environmental problems, and through information provided by his trade organisation, sufficient learning has been undertaken to enable changes in the production process, and improve the overall environmental performance of the company. In an ideal situation, this learning would be operationalised immediately and put to work in the company. In reality, the company is 'sitting on' information they feel is not in their immediate interest, or practically achievable, and there is thus a substantial lag-time between learning and acting. During this lag, it seems that the benefits of immediate action, the real impetus for environmental improvement, are substantially 'watered down'. It is clearly difficult to challenge the SME directly in this area, as the firm will have its own priorities for action and varying amounts of money to spend.

Other companies showed similar hesitation in putting learning to work, the primary reason for which can best be described as timing. The collection of quotes below suggests that, as has already been illustrated, learning about the logic and practicality of environmental improvements is a different issue to learning about their importance alongside other production issues. Indeed, it is their importance that is often the determining factor in their uptake.

'...As I said earlier, there are things that we could do here environmentally and I've mentioned them to the senior board - lighting, metering and some materials...
reduction. They don’t want to know at the moment even though they make sense...and even though we could afford them...I guess it’s just timing.’

(Interview 19: Medium-sized processor)

'We looked at our efficiency a few years ago now, and came up with a list of things that needed doing...and some of those had environmental sides to them I suppose. We’ve tightened up on our water use certainly, but the other things are still to be done – it’s just that with so many other things to worry about we’ve had to wait.’

(Interview 12: Small-medium processor)

'Many things we do here are mainly about priorities. I’m a bit of a yes-man! I tend to do whatever I’m told, and that goes for all processes and impacts we have on site. The policy comes from three people, and no one else has much input into that – I guess that would be the thing to change if you wanted priorities to change.’

(Interview 12: Small-medium meat/veg processor)

The final quote of this collection makes an interesting point about the flows of learning within the company. The manager suggests, implicitly, that the closed circle of learners and actors within the firm, closes off any possibility of newer issues and priorities coming to the fore within the SME. The following section looks at internal communication of information, and employee participation in the learning process. It is suggested that at present, learning is a restricted practice confined to those members of staff perceived as being able to deal with its outcomes. The model of learning currently seen and used in many firms is outlined before proposing a more inclusive system of knowledge sharing and creation. The traditional management hierarchy that was seen to operate in all SMEs taking part in
this study, is partly blamed for the exclusion of many employees whom, potentially at least, have much to contribute to the environmental learning of the firm.

7.7 Communication of learning within SMEs

Diffusion of learning within an organisation is important if all members of that organisation are to contribute to the potential benefits. Elliot et al. (2000) suggest that what they term the 'centrality of expertise' is one of the major barriers to more effective organisational learning in the firm. Over 90% of the firms interviewed in this study (and 100% of the small-medium and medium sized firms) admitted to operating an internal system of communications that restricted the diffusion of environmental knowledge (although other areas of corporate knowledge were mentioned) to all but senior and mid-management personnel. Staff are kept informed on a 'need to know' basis, and it is invariably personnel higher up the management structure who are deemed more in need of knowing. Thus, the information gathering members of the firm – who are invariably the owners, MDs, technical or quality managers – tend to circulate this knowledge within their own spheres of influence, and act on, or reject information according to their own interpretations of law or points of view. The majority of the workforce – including many employees who work in the environmentally sensitive operations of the firm – are left out of the learning loop, and therefore have no input in company policy.
Environmental management literature has increasingly called for full participation of the company's workforce (Welford, 1996). The practicalities of achieving this are not always clear-cut and are discussed more in Chapter 2, but very few commentaries discuss the potential for company-wide environmental learning, and the benefits of cross-company participation usually go unaddressed. To some degree, discussions of environmental management include employee learning, but learning here is usually just defined as what management tells the workers. There is a still unanswered question of how employees can contribute to wider firm learning.

7.7.1 Employee participation

Interviewees were asked if they encouraged members of their workforce to contribute ideas to a company 'pool', or if they offered any kind of bonus scheme for involvement of this kind. Only three firms from those interviewed had experimented with suggestion boxes, but they claimed that responses had been poor, and suggestions made thus far impractical or expensive. This supports earlier suggestions that learning is top-down only, and very little capacity for upward transfers of learning exist. Figure 7.1 outlines a model detailing SMEs' normal methods of communicating information within the organisation (based on interview response), and suggests that firms operate within a very narrow framework of information flows, usually uni-directional in nature. Information learned typically passes through two or more stages before it reaches the shopfloor or 'action' stages.
And, as the diagram indicates, although there is feedback between the early stages, communication from the shopfloor stages back up the chain is limited.

**Figure 7.1:** Schematic flow of learning in SMEs (including normal pathways [solid], and missing pathways [dotted]) derived from interviews
What this suggests is that while there is communication of progress or problems between the higher management tiers, those workers contained in the bottom tier — that is, the majority of the ‘hands-on’ staff — have no voice or means of input in the learning cycle: they are recipients of information only. In many instances, these are the people who are most directly involved in the physical activities of the firm, and whom can comment with greater accuracy than higher management whether a process is working efficiently or inefficiently. No non-management staff were interviewed during this research, but comments by several managers indicated that SMEs were well aware of the expertise ‘locked away’ on the shop floor.

‘...They are the people you’d need to talk to in all honesty, they get involved in all the policies we make...’

‘...For all the management experience up here, it’s at the dirty end of the business where it really counts. I’m sure there are people out there with their own views on how these things should work, what we should change, etc.’

(Interview 5: Medium-sized fish processor)

‘There are about 170 people out and about on the factory floor, and all of them have their own insights about how the firm should operate. Mainly if you talk to them they’ll have a good moan about this and that, but underneath all that there are some real suggestions about how to make things work better...and why wouldn’t there be? We really should be tapping that.’

(Interview 36: Small-medium bakery/processor)

These comments feed back into Nonaka’s ideas of tacit knowledge discussed in Chapter 4, and suggest that knowledge may be present in SMEs, but in less accessible and articulated form than information learned through regular channels.
Authors such as Grasse (1982), Miller (1983) and Goldsmith (1989) have long argued that entrepreneurial firms are more likely to secure competitive advantage through innovative processes and worker participation. Mabey and Salaman (1995) connect this directly to learning and suggest that the way the firm learns can directly influence profitability. But in order for this worker-knowledge to be utilised by the company, staff need to be appropriately organised and motivated to feed that knowledge back into the collective and benefit the operation. Making employees feel valued, and encouraging them to see value in sharing insights with others is a matter of motivation.

7.7.2 Motivation

Recent work on staff motivation (Bent et al., 1999, 2000; Bramham, 1994) has suggested close links between worker involvement and commitment, and achieving an organisation's goals. Locke's (1991) research on organisational behaviour proposes a 'motivational sequence', which can be followed through from initial idea to conclusion. She suggests that motivation 'fires' further motivation, and through this staff develop sufficient momentum to see a project through to completion. Determining the motivating factors behind worker commitment, and whether this model is in any way accurate, is a subject for more dedicated study, but current levels of worker involvement suggest that SMEs may be missing out on a potentially important learning resource.
Having acknowledged this, however, several SMEs have attempted to involve the experiences of their staff in the learning process. One of the recurrent criticisms firms have of environmental initiatives is that they work for a short while and then grind to a halt. This is usually put down to insufficient benefits, a lack of visible payoff or financial considerations, but in light of these observations on learning and the communication of knowledge internally, it is possible that gaps in the learning process may be as much to blame.

"We've had a few attempts at it (energy efficiency), but the last time we did it we put posters on the walls, had little seminars...the works...but it just petered out after a few months. People seemed to get bored of it."

(Interview 32: Small-medium bakery)

"There was a worker suggestion box for a bit. We'd encourage people to write things down if they had an idea and stick it in the box. There were a few for a month or so, then ideas dried up."

(Interview 7: Small-medium processor)

"People don't stay interested for long enough. We opened the suggestion box one month and there were two crisp wrappers in!"

(Interview 13: Small-medium drinks firm)

Based on what managers have said regarding the involvement of shopfloor staff generally, higher management are receiving very little feedback on the success or failure of environmental initiatives. As the schematic in Figure 7.1 illustrated, the feedback link between staff involved in environmental initiatives and staff financing or planning them is poorly maintained, and negates any possibility of ongoing improvement to initiatives. As well as giving management information on the
success of environmental and other policies/initiatives, providing a forum for communication may be a strong motivational factor for worker satisfaction. Bent et al. (2000) have suggested that with the aggressive nature of the food sector, which is still highly labour intensive, successful staff motivation/satisfaction remains one of the major issues for competitive advantage. They go on to observe that in a study of 144 SMEs, despite the size of the firm, poor communication and a lack of appreciation were two of the most common demotivators amongst workers. Early work on motivation (Maslow, 1954; Herzberg, 1966) has suggested that self-realisation and the appreciation of one's own potential create a heightened sense of empowerment in workers. There is clearly scope for a detailed study of staff motivation in environmental initiatives to more accurately account for the role of workers in achieving higher environmental standards. From the SME perspective, however, there are surely obvious benefits to be gained by at least listening to the opinions of workers on a range of issues.

7.8 Chapter conclusions

The extensive literatures in organisational learning focus mainly on the question of individual versus collective learning capacity. Primarily they ask: to what degree is learning in the organisational setting the product of individuals learning side by side, or the result of some emergent social learning ability that is accomplished by a group. This thesis has suggested that, with environmental issues, a small select group of employees – usually senior managers – assume the role of learners, and
restrict that information to those individuals deemed best able to act on the new knowledge. With many other important issues to consider, however, learning about the environment does not translate directly to acting on the environment. In addition, SMEs interviewed conformed to outdated paradigms in relation to whom in the firm was seen as being able to learn, and pass on that learning.

- Internal communication of learning in SMEs is underdeveloped. There is at present a 'centrality of expertise' (Elliot, et al., 2000), which excludes from participation all but the senior management of firms. Employee participation in developing environmental improvement is not widely encouraged, and there is poor feedback of information from those instigating environmental improvements to those designing and funding environmental improvements. Learning in this sense is little more than employees doing what their line manager tells them to do, and represents a top-down approach only.

- Learning about the environment is 'fired' by specific events such as regulator pressure, the supply chain and community pressures, etc., and is best described as episodic rather than continuous and incremental. In relation to OL theory, learning is 'single-loop' and threat-driven, providing the basis of a defensive or preparatory mechanism to counter change.
Smaller SMEs in the sample see risks to their future more clearly than larger operators and their attitudes are therefore more positive towards learning. Larger SMEs with more complex management or outside ownership believe themselves to be at less risk, and rely on others (trade groups, MNC owners, etc.) to do their learning for them. The 'It couldn't happen to us' argument is frequently used by larger companies to avoid the necessity of becoming involved in continuous learning.

Learning does not necessarily result in action. Interviews suggest that, in many firms, there is at least some 'latent' knowledge not used. Disruption to the supply continuity of the operation – particularly supermarket trade – is a major worry for all size SMEs, even if the knowledge and finance to act is in place.
EIGHT: ENVIRONMENTAL ACTION

8.1 Introduction

This chapter looks more closely at some of the advances food-sector SMEs have made, or planned, in areas of environmental improvement. The tenor of the argument put forward so far suggests generally negative attitudes on the part of small firms towards any kind of engagement with environmental initiatives, or active learning towards environmental improvement. While many small firms are clearly still uncomfortable with the idea of environmental improvement, for either their cost or perceived disruptive effect on business, about a quarter of companies interviewed had integrated environmental measures into their operations, and some of these initiatives went beyond compliance, to compliance-plus and even proactive measures.

This chapter seeks to build on some of the theoretical and practical scenarios put forward in the previous chapters on knowledge and organisational learning, and examines environmental improvements - made or planned - in the field. It attempts to establish whether knowing more actually leads to doing more, and in addition to detailing some of the improvements actually made by firms in the region, the chapter then assesses the extent of this activity, and the environmental benefits actually made as a consequence. By examining the reasoning behind these decisions to act, a typology of environmental improvement that may be applied to
other firms or sectors in the region is proposed. The second half of the chapter looks at environmental management, policies, and the extent to which SMEs in the food-sector are employing these tools to address their environmental impacts. It is suggested that Total Quality Management (TQM), while offering the potential to address environmental concerns, poses a number of difficulties for smaller firms not acknowledged in previous studies.

The following section looks at some practical examples of improvements made in the region. Before doing so, however, section 8.2 looks at the influence of the supply chain, and whether SMEs are experiencing pressure 'from above', or being allowed to dictate their own standards where environmental improvement is concerned.

8.2 The supply-chain: pressures and motives

Previous work has suggested that environmental improvements in small firms are primarily regulation-driven (Post and Altman, 1994; Robinson and Clegg, 1998; Tilley, 2000; Petts, 2000), and supply chain pressure, while offering large potential, has as yet not stimulated any real change. A number of commentators have proposed that over the next several years, pressure from customers and suppliers will become at least as important as the pressure currently exerted through formal legislation (Charter, 1992; Holmes, 1992 – cited in Hill, 1997). As legislation only outlines the framework of measures required legally, however, and does not place
any real pressure to go further, whether the supply chain can stimulate behaviour that exceeds legislative requirements is as yet to be seen.

As the influence of the major retailers on food-sector SMEs continues to grow, so too does the potential for delivering positive environmental improvements through this kind of influence. However, Hill (1997), whose research looks specifically at the Yorkshire and Humber region, suggests that with the exception of chemical firms and a minority of others in the consumer-goods sector, supply-chain pressure is at present inconsequential to the environmental performance of the manufacturing sector.

The reasons for this can be explained on one level by firms’ doubts as to whether investing in environmental improvements will significantly improve their market share, and consequently whether these costs can be recovered through market mechanisms. More fundamental, however, is the fact that as yet, there is no appreciable demand for environmental quality by the majority of domestic consumers. Price and convenience continue to be the motivating factors behind bulk purchase, and ‘green consumerism’ has not yet provided the kick-start for environmental improvement that many believed it would. Green et al. (1996) believe the potential for green consumerism in the household purchase market is insignificant when compared to the benefits that could be secured through intercorporate trade. Commercial buying is far higher than consumer spending, and ‘the opportunities for environmental considerations to be brought into play are much
greater than they are for individual consumers in the supermarket’ (p. 190). The attitudes displayed to environmental action are surprisingly black and white where capital investment is concerned, and the fact that SMEs are not being driven to change directly by the people who are ultimately consuming their produce is often seen as satisfactory rationale for not acting.

‘If we were asked for environmental improvements more by our customers then we’d have to do more I suppose, but at the moment…’

(Interview 24: Small-medium sized fish processor)

‘We have to follow the market demands with everything. We can’t afford to go second-guessing the market – if customers want more environmentally friendly products (I mean really want them), then the pressure will come through the supermarkets I reckon. There isn’t that pressure right now’

(Same)

‘I think the day will come, I honestly do, people are going to start wanting to know the procedures involved in all the food they consume…and rightly so if you ask me…but at the moment, nobody really cares how environmentally efficient the production of their Yorkshire puds is or how clean the rivers are after companies have put water back into them.’

(Interview 36: Small-medium bakery/processor)

As the major buyer of food-sector produce, the supermarkets are directly implicated in this process. However, no SME cited supermarkets as exerting any real pressure on their environmental performance. With the exception of four micro-processing firms (three fish and one bakery), all firms in the sample supplied directly to at least two major supermarket chains, and for several of the companies, supermarket trade accounted for 100% of their business. Supermarkets have been keen to stress the
mutual benefits of environmental improvement to their suppliers. In 2001 Sainsbury’s launched its *Raising the Standard* programme to assess the level of environmental management amongst its own-brand suppliers, and to raise environmental awareness more generally (ENDS Report 318). ASDA’s takeover by US retail giant Wal-Mart has supposedly lead to the incorporation of more rigorous environmental monitoring of its suppliers, and development of partnerships between supplier and customer (ASDA representative, pers comm.). Whether such promises have lead to raised standards or more rigorous monitoring is not yet evident, however.

Wherever such schemes go in the future, there has as yet been little in the way of direct pressure by major retailers to improve the environmental performance of their suppliers on a company-wide and multi-issue basis. A majority of retailers continue to address the environmental agenda on the basis of single issues, such as packaging and plastics, and appear reactive, rather than incorporating environmental issues into all aspects of business (ENDS Report 318: 27). Firms were asked whether supermarkets placed any direct requirement on them to implement environmental improvements in their processes.

‘Again, we do get an occasional visit but it doesn’t really amount to much. Just a quick look around the plant. It’s in no way an environmental audit, they’re more interested in health and safety to be honest.’

*(Interview 11: Small-medium fish processor)*
'Err...it has to be said that the majority of customers don't ask those sort of questions, err...if I had to put a percentage on it I'd probably say that about 10% do - the supermarkets don't tend to be that bothered.'

(Interview 7: Small-medium sauce producer)

'None at all.'

(Interview 12: Small-medium veg & meat processor)

There has been increased pressure on supermarkets - and on large firms more generally - to report on environmental management procedures. In 1999 the London Stock Exchange adopted the Turnbull Report on corporate governance, which required all listed companies to adopt a risk-based approach to management, and to report on their procedures. Companies must show they have systems in place to control all relevant risks, including environmental risks and risks to reputation (ENDS Report 305, p.40). These measures are part of wider steps to encourage greater transparency in the supply chain, and therefore emphasise total quality rather than single-issue preferences in supply chain dynamics.

In reality the situation is less impressive, and the only pressures SMEs talked of were those relating to price, product quality and capacity. Site audits from some of the major retailers (Marks and Spencer, Sainsbury's) did include extensive observation of the production lines and other processes, but none looked into the 'dirty' end of the business - the waste, pollution and effluent issues. As the production manager of one firm suggested, the majors are primarily interested in whether their suppliers can meet demand; consequently they need to check production, storage and dispatch capacity above everything else. Senior
management were, not surprisingly, comfortable with this arrangement, and stressed that at the end of the day, quality and quantity were the main things driving their business.

'Yes we get inspected by supermarkets now and again, but I can tell you straight away what they’re looking for. They want to make sure we haven’t got hygiene problems sure, but mostly they want reassurances we can deliver.'

(Interview 13: Small-medium drinks firm)

'We have site visits occasionally by the likes of ASDA, but I wouldn’t say they seem that interested in our wastes and things...so long as the facility looks okay they are quite happy. It’s hygiene they’re most interested in.'

(Interview 19: Medium-sized processor)

'The only time we see the supermarkets here is if they are worried about either quality or quantity. They sometimes get a bit edgy if they think for whatever reason that you can’t meet their quotas and you’re going to leave them high and dry!'

(Interview 6: Medium-sized processor)

All the companies supplying to major retailers (with the exception of four micro-enterprises) had accreditation under the EFSIS standard. EFSIS, the European Food Safety Inspection Service, is an international third party independent inspection service that provides retailers and manufacturers in the food-sector with inspection of their operations and suppliers. Although the inspection covers all areas critical to food safety, hygiene and quality, environmental issues do not feature independently in any of these functions. Principally, EFSIS accreditation enables firms to reduce
individual inspection costs by combining a variety of different inspections and assessments at the same time (EFSIS, 2002). Central to these inspections are:

**ISO9000**: Suppliers quality assurance – quality systems and documentation in management roles critical to the operation of the firm. Covers activities of production and product development operations.

**HACCP Certification**: Hazard Analysis and Critical Control Point. Enables management to maintain a cost-effective food-safety programme. Assessment of all steps involved in food production.

**Other Inspections**: Inspections against all key food quality assurance schemes (QAS); one accreditation covers all. Training of managers to conduct own inspections.

According to the testimonies of managers interviewed, major retailers were happy to accept EFSIS as a certification of environmental quality. Some of the individual quality schemes covered by the EFSIS banner do include limited environmental standards, but the quality checks central to the scheme do not require environmental management or auditing. Only where environmental quality and food hygiene standards intersect is the environment made a feature of EFSIS inspections.
Supply-chain pressure, while affecting certain aspects of company activities, has not yet had any appreciable effect on the environmental performance of SMEs interviewed in the fieldwork. This in turn seems to be the result of a lack of interest by consumers in the environmental credentials of food manufacturers. As several managers suggested, however, this could change very quickly if public awareness of business’s environmental impacts were increased – through, for example, extended coverage in the media.

8.3 Ethics and social responsibility

In the absence of any supply-chain ‘push’ mechanism to drive environmental improvements, and a regulatory framework that does little to foster improvement beyond that which is legally required, there is little in the way of direct pressure on firms to make environmental improvements. In the absence of this kind of pressure it is important to ask whether firms are prepared to make environmental improvements simply on the grounds of corporate responsibility, or a sense of ethics. Welford (1994: 100) has argued that what is really required to bring about widespread improvements to environmental performance is ‘a shift in paradigms towards an acceptance by industry of its ethical and social responsibilities.’ Commoner (1990) and Wheeler (1993) make similar observations, and claim that a more holistic approach, based on a clearer worldview is the important aspect as yet missing.
What does a paradigm shift actually mean however, and how will a more holistic approach and a clearer worldview precipitate environmental improvements? Indeed, will they precipitate environmental improvements? Such comments are based on a premise that industry is somehow capable of reorienting itself away from its primary objective, and sacrificing profit for the good of the environment. Arguing against this position, Milton Friedman (1984: 131) suggests that business has no social responsibility beyond that of increasing its profits ‘so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud.’ DesJardins (1998) makes similar observations, noting how the classical model of corporate social responsibility argues that economic efficiency and obedience to the law is sufficient for satisfying moral responsibility. In purely ethical terms, and as Hutchinson and Hutchinson (1997) have suggested, business has no business in considering questions of ‘good’ and ‘evil’.

But it is increasingly difficult for business to consider itself outside the ethical and moral orders on which organisations and individuals are judged. In acting unethically, or in ways that a majority considers to be unethical, a firm runs the risk of market discrimination, and in an age of media dominance, bad PR. By ignoring ethical requirements and focusing wholly on bottom line, companies could leave themselves open to possible legal action or other recriminations. The logic behind these views is evident, and no managers argued vocally that there was no requirement for firms to move in this direction. The ‘sticking point’ centres on where ethical responsibilities to environmental improvements come into conflict.
with the ethical responsibilities involved in actually being in business. Corporate ethics is not just a case of ethical responsibilities outside the firm, but to stakeholders inside the firm: employees, shareholders and customers.

In the fieldwork, firms were asked if they felt any social responsibility to make improvements not required legally, or without clear payback, and whether or not they had done so. Over half the responses sidestepped a direct answer and pointed out that, in reality, it was not really as simple as making a clear-cut choice: employees’ futures and customers’ business had to be considered as the driving force. None of the SMEs in the small bracket (1-70 employees) confessed to improving any of their procedures out of ethical or social responsibility. The margins were deemed too tight to consider that kind of ‘unprompted’ action. Social responsibility was not considered a strong enough reason alone to engage in environmental improvements. Reducing impacts because it is ‘the right thing to do’ is an attitude displayed by certain managers with a personal interest or understanding of the environment, but this seldom translates into a corporate response and a shift in company attitude.

'I'm a keen walker, and I like to think of myself as pretty green and all that, but what the firm does is a different matter - I can't impose my views on policy.'

(Interview 16: Small-medium sized feed producer)

'There are good arguments for firms to be more socially aware sure, but where do you draw the line with this... you know, we try and run a tidy ship - clean up
after ourselves and all the rest - we can't go so far as that we're affecting the bottom line though.'

(Interview 21: Small oil processor)

'I think protecting the environment is very important personally, and I'd like to see companies (including our own) do more in terms of energy efficiency, but if I overstepped the mark and started sanctioning all kinds of action, the directors would want to know what was happening. It isn't the kind of thing you can always do in business.'

(Interview 26: Medium-sized drinks producer)

Tilley (2000) has looked in depth at the ethical attitudes of SME management to environmental change, and has suggested that as the orthodoxy of profit maximisation as the sole purpose of business is challenged, it becomes more difficult for business to legitimise its behaviour on the basis of economic principles alone. As social awareness of the environment grows therefore, and along with it an understanding of the potential contribution made by industry, there is more pressure for business to deal with their impacts on a voluntary basis. This would seem to imply a company base more aware of its social responsibilities however, and more willing to take action on purely ethical grounds. While this has been witnessed to a degree with larger companies and MNEs - and consequently in the academic literature surrounding such action (Thompson and Smith, 1991) - the same has not been true of SMEs. Other research (Vyakarnam et al., 1997; Russell, 1993) has indicated that there is a lack of understanding more generally as to how ethical pressures operate on smaller firms, but as Russell (1993: 3) suggests, 'ethical codes
alone are insufficient to change either attitudes or behaviour because they have been notoriously difficult to implement.'

All of the firms interviewed spoke of an awareness of social responsibility issues, but cited responsibility to the workforce (in terms of employment), and the realities of business life more generally as more pressing problems. For several managers, taking practical steps towards environmental improvement on the basis of social responsibility was idealistic, unrealistic and not possible given the current business climate.

'Unfortunately, the reality of our situation dictates that we can only go for things that pay us...things that have a pay-off in the short term.'

(Interview 9: Medium-sized fish processor)

'It would have to be something either very cheap, or something we could exploit in other ways. You'll find that the majority of firms in this sector take that attitude – it's not that they're not bothered, it's just that survival of the firm is the number one priority.'

(Interview 36: Small-medium bakery/processor)

'Companies that say they are doing things for the benefit of the environment, or for the community, or whatever, are covering up I think. There's always something in it for them, even if it's just good PR.'

(Interview 32: Small-medium sized bakery)

The final quote makes an interesting, if cynical, observation about the value environmental improvements may hold for SMEs in more indirect ways, and
suggests that for some firms, there may be no such thing as social responsibility, just the idea of it. One of the examples used later in this chapter draws a similar conclusion, and the interviewee openly admits that a programme of improvements undertaken at the plant were designed primarily to get the local community on board, and enhance the firm’s standing in the locality.

The following section looks at measures taken or planned by participating SMEs, and tries to build a simple typology of environmental action.

8.4 Environmental measures

With the exception of regulatory requirements, environmental action taken so far has not been a ‘pressed response’, and management has had time to consider the decision to invest money. The nature of the interview situation, and the interviewer’s declared interest in environmental improvements did place a certain amount of pressure on the interviewee to ‘come up with the goods’. Thus, when asked if the company had implemented any improvements, the respondents always stressed the positive aspects of their action even when arguably, the environmental benefits were either non-existent or circumstantial. The remainder of this chapter looks in more detail at some of the steps taken by firms in the region to either mitigate or remove environmental impacts. As well as describing the action and the environmental concern it addresses, the interview sought to get some feel of the
entire process through from idea to completion, and the staff involvement in the process.

Environmental improvements are normally considered as falling into two main categories: reactive and proactive. These kinds of classification certainly help differentiate between firms with environmentally active staff members and those without, but they do little to explain why in some instances these beliefs are acted upon while in others they are not. Categorising firms as being either proactive or reactive in their attitudes towards environmental improvement - and attributing characteristics to each - may not be a particularly helpful way of accounting for the differences in environmental improvement across different SMEs in the sample, as it can over-simplify the issues in a number of ways. Firms tend to define the advancements they may have made to suit their own ideas of environmental responsibility, and these may be incomparable with other externally defined notions. For example, some firms that had taken steps to bring their operations in line with existing legislation believed this action to be proactive purely by virtue of the fact that they had identified the need rather than being told by an external body. Other companies spoke of making changes that had not been made by their competitors; these were considered proactive on this basis. In other (the majority) instances, firms fulfilled criteria for both reactive and proactive action as defined in earlier studies. Some firms reacted to legislative pressures in certain areas while seeking financial savings and good PR in others.
8.5: States of anticipation

The reality is that many firms exhibit elements of what other authors have labeled proactive and reactive thinking in their environmental behaviour, and it is difficult to compartmentalise a firm into one or the other on the basis of one response or one issue. There are elements of forward thinking and elements of reaction contained in all the improvements discussed in this chapter, and no firm made a decision to act based solely on future gain, social responsibility or reactions to external pressure. Cramer (1998) makes a similar point when she observes that in many discussions of environmental management, authors refer to companies as moving through an evolutionary process from 'beginner' to 'pro-activist', where in practice there are many feedback loops that can stunt progress and take a firm back stages. Her criticism suggests that in reality, a company cannot be classed this easily into a category, and firms may adopt a defensive strategy for one issue and an offensive strategy for another.

A more workable approach, therefore, is to consider all firms as exhibiting different degrees of anticipation, determined by their access to and understanding of environmental and regulatory knowledge. In this way, a firm is neither reactive nor proactive as such, but anticipates the risks and/or opportunities created by regulatory pressure, bad or good PR, the supply-chain, and so on. The firm is then able to act as it perceives these variables to affect its operation. Environmental improvements implemented on the basis of such knowledge are done so because the firm believes
that in so doing, it places itself in a more favourable position to deal with the effects of different kinds of pressure. The same general principle may also be applied to organizational learning (see chapter 5). A company learns in response to various stimuli, and anticipates the benefits such learning can bring the firm. They cannot be classified either a learning or non-learning company per se. This idea is consistent with that put forward by Roome (1994), who suggested that the greater the environmental challenge accepted by the company, the more far-reaching the change process. Knowledge and information access – not just of environmental and regulatory issues but of other matters central to SMEs – will define the size of the environmental challenge taken on by the company, and the cost burden required.

In considering firms' environmental improvement in this way, it is easier to understand and account for the differences not only in levels of knowledge, but also in why some firms seem more prepared to act than others. The following examples are used to demonstrate this, and are taken from five different sub-sectors in the food industry. They suggest that, while environmental improvements are evident in each, there can be no straightforward classification of the firms involved into proactive or reactive groupings. The actions taken by each firm are the result of different kinds of pressure being interpreted differently by management with contrasting attitudes to the environment.
8.5.1: Water reduction

Smiths are a medium sized fish processor based in Hull employing approximately 250 people. They are engaged in both primary (filleting, boning) and secondary (portioning, freezing, flavouring) processing activities, and trade under a number of subsidiary brand names. The company sells to the major retailers, the food service sector, and a small number of wholesalers both at home and abroad. Smiths recognised that there were large savings to be made by managing their demand for fresh water more effectively - less fresh water used in their processes invariably meant less trade effluent going to sewer. With the EU designating the Humber Estuary an inland water, the Urban Waste Water Treatment Directive added significant cost to trade effluent charges in the Humber region. After a board meeting in 1997, the company decided that water minimisation should be placed high on the agenda, and appointed the firm’s cost accountant to manage water demand.

Twenty water sub-meters were installed at key points across the factory, as were basic improvements such as manual triggers on hosepipes and filleting equipment. Meter readings are taken twice daily, six days a week by appointed staff who are encouraged to raise awareness of water consumption during their regular checking of the health and safety of the production line. The results of the monitoring are fed back directly to the management, and are available on the firm’s computer network to anyone with access as a series of usage graphs. In addition, information on the
water usage of different departments is displayed in the communal areas of the factory for all staff to inspect.

As well as aiming to save the firm money, water efficiency is now being used as a key performance indicator for staff evaluation (DMB, 2002). For line managers in charge of water intensive processes, consumption targets are set on a monthly basis, and appraisals are conducted frequently by the senior management. Due to the success of the project, the company now factors in efficient water use to the purchase of any new equipment.

8.5.2: Flash condensate

Jones Ltd are a wholly owned subsidiary of the Cadbury Trebor-Bassett group, itself part of the worldwide Cadbury-Schweppes organisation. Jones have been trading from their premises in Cleckheaton, West Yorkshire for just under 100 years, and while they enjoy the benefits and security of belonging to a MNC, the production manager is keen to stress that the firm operates very much independently on a day-to-day basis. Approximately 200 people are employed on site, the majority fulfilling manual roles in production and dispatch. Products are mainly boiled and soft sweets - hard gums and Midget Gems being the main produce. The company's primary customers are the major supermarkets and independent stores in the north and northwest of England.
Mike, the production services manager, agreed to participate in this research mainly because his job role recently changed to take on board environmental protection and responsibilities. Cadbury-Schweppes as a group have recently started reporting to the City on their environmental performance, and therefore all group companies have had to train personnel to manage environmental impacts on site. Mike has overall responsibility for the environment, and it is his job to collect and collate information relating to environmental impacts, and 'sell' it to the board as and when necessary.

A few months before the interview, the technical department became aware of a relatively new piece of equipment called a flash condenser, which could be used in conjunction with existing equipment to optimise boiler efficiency and reduce gas usage. Previously, the boiler was refilled using room-temperature water from the mains that had been held in a refilling tank near the boiler. The firm had been looking for a way to reduce gas usage for a while, and they realised that by refilling the boiler with heated water, they could reduce the amount of energy required to maintain optimum boiler temperature. Excess, or 'flash' steam from the boiler, instead of simply being vented, is fed into a jacket that surrounds the refilling tank. The steam and water are not in direct contact, but as the water is at a much lower temperature, the steam starts to condense in its jacket through the heat transfer across the tank walls. The apparatus monitors the temperature and pressure in the jacket ensuring that it is kept high, and when sufficient steam has condensed, a
valve releases the condensate and allows more steam in. By keeping the jacket full of steam, and the water in contact with the jacket, the room-temperature water is heated up to approximately $90^\circ$ when it is fed back into the main boiler. The process has a high efficiency, and has enabled Jones to reduce their gas usage significantly. Mike was uncomfortable discussing cost, but early estimates suggest that the project will pay for itself in under a year.

The company's directors took little convincing that the flash condenser was a worthwhile piece of equipment to invest in. The quick payback was obviously a key issue, together with the fact that after this period the equipment would be saving the site money. But as Mike pointed out later in the interview, Jones only met part of the outlay costs for this equipment; their parent company came up with the rest. As part of a massive organisation like Cadbury Schweppes, capital expenditure is often part subsidised from central budgets depending on the amount needed, and what the investment is for. Because environmental issues are high on Cadbury's agenda at the moment, capital funds are being made available for schemes yielding environmental improvements. Jones, and Mike in particular, are keen to be seen as enthusiastic to the cause, and as he pointed out, towing the line in one area paves the way for further subsidies in the future if that investment is seen to be beneficial by the parent company.

As well as saving on energy, and reducing on-site environmental impact, Lion saw other benefits and future pay-offs in this kind of action. Environmental
improvement was a way for the firm to access otherwise unavailable financial resources, or matched funding by their parent company.

8.5.3: River clean up

The Richards Group are a privately owned company specialising in the production of oil-based margarines, spreads and lards. The firm employs approximately 130 people on site: 30 in management and administration, 100 in production. Last year output was up to 50,000 tonnes, and turnover reached a record high of £15 million. Over the last five years the company has been streamlining its operation, both in terms of produce and management structure. From producing a wide range of food products, the new managing director has redefined the core of the firm's business, and expects further growth during the next few years.

The company place high value on the idea of total quality, and when a management buy-out enabled the new team to take over, Geoff explains that it enabled the firm to become more forward-thinking and less opportunistic. There is no clear environmental policy, other than that which makes sense and saves money for the firm. No specifics are given, but what Geoff says about the previous management and their policies suggests that odour and visual pollution may have been a problem for local residents at some time in the past. Recently, Richards have been working with Yorkshire Water on a joint scheme to improve a stretch of the River Calder at Ossett, West Yorkshire. Primarily, the project has involved extensive clean-up
work on a stretch of the river running at the rear of their factory on Butter Road. The land was originally used as a receptacle for motorway construction wastes when the M621 was built several years earlier. The environmental improvement of the site has taken two main strands. The first is aesthetic, and involved the removal of hundreds of tonnes of waste material from the floodplain. Material was cleared from the water – bricks, construction materials, metalwork – and also from the banks – shrubbery, fly-tipped waste and assorted wood. Richards landscaped most of the area, planting trees and providing benches along a walkway near the river.

The second aim of the project, in conjunction with Yorkshire Water, was to develop a renewable energy source. An area of the floodplain has been sectioned off as a willow plantation; the costs incurred maintaining this, and in harvesting the trees, are met by Yorkshire Water. In return Richards receive publicity in Yorkshire Water publications and praise from the local community for providing a service.

The project is a service beyond the call of duty in many ways, but as Richards’ Operations Director implied during interview:

‘As I say, the landfill development was expensive and I don’t think Rob (MD) would have committed to it just for environmental reasons. We realised that it was important to have certain people...how to say it... ‘on board’ if we were to have a real future here (laughs).’

Later in the interview the Operations Director expanded on these implications when he admitted that a reason for the improvements was to feather their own cap, both with Yorkshire Water and the local community. The factory had come in for
criticism recently for some of the smells it produced, and the management, not surprisingly, decided work of this nature would go towards softening the criticism. In terms of money, the Ops director would not go into specifics but gave assurances that the improvements carried ‘significant’ cost.

This environmental improvement is different to the others described in the chapter because it has nothing to do with either the product or the production process – environmental work takes place off-site and the company has had no hand in causing the problems. The managing director is described during interview as quite a shrewd businessman, and somebody who will exploit a situation to the maximum if he believes there are either short- or long-term gains to be had by the company. The operations director believes that the MD weighed up the costs and benefits of the scheme and acted for the positive PR the scheme would have locally. Environment does not carry much importance to the firm in other ways, and the opportunity for working with Yorkshire Water gave the firm a chance to ‘rubber stamp’ its environmental credentials with what carries all the signs of ‘proactive’ environmental improvement.

The Operations director believes the work was a way to re-establish good community relations however, and move away from the dirty image the firm had created during previous management.
Based in Bradford West Yorkshire, Krispy Crisps are a privately owned company specialising in the peeling, baking and flavouring of potatoes, for crisps and a small number of other products. Although not having the same national coverage as other major brands, Krispy have been making steady inroads into the crisp market, and hope for deeper penetration into supermarkets in the south of England over the next few years. The firm employs 230 people on site. No details were available as to annual turnover.

Krispy’s board takes a largely ambivalent view of environmental issues, and as their head chemist suggested, tend to pretend such worries don’t exist. They are compliant with all legal requirements, but do not approach their production with any specific environmental concerns in mind. Asked whether the firm had taken any un-required environmental action, the head chemist mentioned the GM issue. Genetically modified produce and ingredients were not issues covered during any of the other interviews, but Krispy’s reasons for acting were unusual.

When the GM ‘scare’ took hold a few years back it caused concern in a great many food sub-sectors. The media were central to this, and such was the extent of media fascination with the issue, the public were left unsure of what was and was not safe, where genetic and non-genetic modification differed, and indeed, what genetic modification actually meant. At present firms are free to use genetically modified
ingredients in their products, so long as they indicate on the labeling. Krispy had received a number of inquiries regarding their position on this issue, and although there was no pressure for them to remove GM ingredients, the board considered a number of options before making a decision.

The directors were concerned that somewhere down the line the Government would decide that GM ingredients were unsafe and require all companies to remove them from their products. The firm did not want to be caught out, and so decided to work with all their suppliers (oils, potatoes, flavourings) on certifying the end produce GM-free. This was a time-consuming process, but because there was as yet no mandatory requirement, they could spread the task - and the cost - over a number of years. The flavourings used in the crisps were the hardest part, and in some instances it took ten or fifteen attempts to obtain the same flavour using non-GM materials.

The GM removal programme took a number of years, and as the head chemist suggested, cost a lot of money in terms of trial and error in new ingredient mixes. There was no immediate regulatory pressure for the action, and as customer pressure amounted to little more than a few inquiries, the action was taken on a voluntary basis. Krispy made an informed choice based on their expectations of market preference and Government intervention, that the GM debate would eventually result in mandatory requirements to remove all GM ingredients from their produce. In the long term their action places them at an advantage over their
competitors because it will mean no rushed action if and when the requirement arises. In the shorter term, the company can use their forward thinking attitude as a means of differentiating themselves from their competition – GM removal can be used as a symbolic gesture to represent quality and care in other areas.

8.5.5: Wastewater recovery

Lantern Drinks are a medium-sized drinks manufacturer based in Featherstone, West Yorkshire. The firm specialises in lemonade, sparkling waters, and an assortment of other carbonated drinks. Lantern have been producing drinks on the site for over 100 years, and have always been a major local employer in Featherstone, an economically depressed area with high unemployment. 1997 was a pivotal year for the firm, when heavy investment in new technologies and much larger sales pushed their turnover up towards £25 million, where it has stayed ever since.

The current managing director is ‘hands on’, and tends to get involved with as many operational issues as possible. Glen, the technical manager, thinks the MD treats environmental issues as peripheral, mainly because he believes there is no real money to be made that way. He is strict on regulations, and any environmental regulation that affects the firm is treated seriously and complied with fully. When asked if the firm would take any steps that were not required by law, Glen thought
for a moment and then described a process that had been introduced a few years prior to interview.

Lantern Drinks, like many large soft drink manufacturers, blow their own plastic bottles on site. Health regulations stipulate that when the bottles have cooled, before they can be filled with product they have to be washed thoroughly with clean water to remove particulates from the inner surface. Mains water is not of sufficient quality to conduct this washing as it can leave its own particles in the product, so the firm treats water to the same quality as that used in the drinks to wash the bottles out. This 'wash-down' water is then directed to sewer. The technical department realised that, with some secondary treatment on site to remove the particles, this water could be returned to the produce tank and reused in the drinks at a later stage. The volume saving to the company is in the region of 40,000 litres a day.

The company is aware that, in supplying several supermarkets, they will invariably come under increasing scrutiny for quality standards, health issues, and possibly even environmental credentials. Modifying the factory to support this water reuse scheme has not been cheap, and Glen indicates that there have been significant investments in new piping, valves, tanks and as he indicates, 'lots of other stuff.' In addition, the treatment and monitoring of the washout water had required investment in computer equipment and chemical analysis hardware, which were very expensive. The actual savings the company is making, therefore, are negligible. It was considered worthwhile to make these investments not for the
direct financial pay offs, but as Glen suggested, because of some of the indirect benefits. He goes on to expand on what indirect actually means in this situation. Less water going to sewer means less water lying around on the floor, looking unsightly for visiting buyers, and less of an accident risk. But it is clear that a more important reason so far as the firm is concerned, is that if asked about their environmental credentials by anyone, this scheme goes a long way to certifying the company as environmentally friendly.

8.6: Classifying reactive and proactive change

It is important, first of all, to recognise that there can be no direct comparisons made between the five firms selected for these examples. One of the SMEs is a wholly owned subsidiary of a multinational food company, while the others have various degrees of independence; one has implemented environmental improvements that have nothing to do with its core functions, while four have made changes that impact directly on their daily operations. In many ways, however, it is this incomparability that highlights more acutely the problems in straightforward classification of reactive and proactive environmental change. Table 8.1 summarises company specifics and maps out the stated reasons for making environmental improvements, but it is difficult to accurately demarcate reactive change from proactive change in any of the examples used.
<table>
<thead>
<tr>
<th>Company</th>
<th>Subsidiary/Private</th>
<th>Environmental Improvements</th>
<th>Reasons for Acting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiths</td>
<td>P</td>
<td>Waste water reduction</td>
<td>Reactive</td>
</tr>
<tr>
<td>Jones</td>
<td>S</td>
<td>Flash condensate (energy efficiency)</td>
<td>Cost Policy from Parent company</td>
</tr>
<tr>
<td>Richards</td>
<td>P</td>
<td>Local river clean-up (With Yorkshire Water)</td>
<td>Image &amp; PR</td>
</tr>
<tr>
<td>Krispy</td>
<td>P</td>
<td>GM removal from all produce</td>
<td>Anticipatory &amp; Planning for Future Leg.</td>
</tr>
<tr>
<td>Lantern</td>
<td>P</td>
<td>Reductions to fresh water use</td>
<td>Cost</td>
</tr>
</tbody>
</table>

Table 8.1: Proactive & reactive environmental change
(> > > = Indicates moving from a reactive to proactive state)

Smiths cited cost as the primary driver behind their attempts to reduce wastewater emissions. However, whether these initiatives are classified as a reaction to unacceptable overheads or a more proactive way of distributing responsibility for costs across departments is difficult to ascertain. Because he was directly involved, the cost accountant stresses the reactive aspects of the improvements – most probably because by so doing, he is underlining his role in saving the company money. But by fitting the water meters across the plant, and involving management in the monitoring and checking of meter readings, the improvements become more proactive in that they encourage participation in environmental issues by more of the workforce, and stimulate learning by making the issues more visible across the company.
Richards Group made their environmental improvements as part of a drive towards 'total quality', cleaning a section of a nearby river and floodplain. The interviewee explained how the work was expensive, and went beyond anything the firm was required to do by law. Upon further questioning, however, it became evident that these changes may not have been driven by a clear-cut sense of social responsibility at all, and instead had their roots in the firm's desire to ingratiate themselves with the local community. The managing director of the firm was quite open about the need to 'have people on board', and considered the improvements proactive in that they were designed to ease relations with the local residents, who, it transpired, had complained in the past over foul odours. These improvements were clearly not required of the company, but although proactive in the eyes of the senior management, were still reactive in that they were a response to pressure applied from the outside.

Even Krispy, who instigated their environmental improvements in anticipation of future legislative requirements, cannot be classified proactive in any meaningful way, as their efforts were by admission a preparatory move to save themselves time and money in the future.

Proactivity and reactivity seem, therefore, not only to vary in definition from firm to firm within the sample, but also in the way they are used to justify any action taken. All firms seem reactive in that action taken in some way responds either to threats to
future operations (GM removal), or perceived changes to operating climate (GM removal and river clean-up), and proactive in that their improvements go beyond what is legally required, and require active participation from the workforce. Another interpretation would classify all action discussed in the previous examples as reactive, in that measures taken were driven by stimuli. Improvements made from social or ethical responsibility alone, seem not to play any part in these examples, or in the sample more widely.

The arguments surrounding reactive and proactive responses are important in their own right, but take on new significance when viewed in context of environmental management. The following section looks at EM, considers its strengths and weaknesses for SMEs, and assesses how improvements and issues put forward thus far could be managed under the broad heading of environmental management.

8.7: Environmental Management & Systems

Environmental management (EM), although possibly a more distinct operation for some larger companies (Merritt, 1998; Gribble and Dingle, 1996), is not a concern given any real currency by the owner/operators of SMEs interviewed. The concept is unfamiliar territory, and three managers in the smallest size bracket were distrustful of what they referred to, implicitly, as bureaucratic complexities designed to detract from sound business management.
‘It’s another of them terms you hear a lot nowadays - environmental management. Don’t know if anyone knows exactly what it means, but you can be sure it adds extra work to our jobs.’

(Interview 16: Small-medium processor)

‘The Trade Associations talk a lot about environmental management at the moment, but I think it’s just flavour of the month. You get a lot of different themes in the food-sector – different ideas that some and go. I don’t think EM offers anything particularly new so it will probably fall by the wayside.’

(Interview 38: Small bakery)

‘What it boils down to is just good management...so why call it something else? There’s too many things in this industry made over complicated – if folk want you to save water or electricity, just call it tightening the purse strings or something,’

(Interview 31: Small confectionery maker)

This is perhaps not surprising given the generally low awareness of environmental issues exhibited by the managers taking part in this research. Without comprehensive knowledge and understanding of environmental issues, it is unlikely that a firm will consider these issues worthy of dedicated management. This reality seems in stark contrast to the views of Stoner et al. (1995), who put the environment top of the list of issues that are set to frame the workplace for the twenty-first-century manager. For Stoner et al., ethics, social awareness, quality and entrepreneurship are all of lesser importance to managing the environment. Even amongst some of the more environmentally active firms interviewed, this is perhaps wishful thinking, because at best, companies invariably use the environment to their ethical, social and competitive advantage.
Although progress is being made - in that SMEs are starting to consider themselves as posing environmental threats in some areas - improvements made thus far, some of which are described earlier in this chapter, have not been precipitated through the effects of any integrated EM, and have their origins in either cost-cutting, anticipatory measures taken on an ad hoc basis, or regulatory burdens. As such, individual environmental impacts are managed, but this falls a long way short of environmental management on a company-wide basis. The remainder of this chapter looks at the strengths and weaknesses of EM, and asks whether there is scope for more widespread uptake by SMEs in the region. It considers whether company-wide and ongoing EMSs are a more effective tool for securing improvements than the simple environmental ‘patching up’ that represents progress to date.

8.7.1: Environmental Management

EMS are now put forward as one, and perhaps the most important, of a series of environmental management tools available to businesses to improve their environmental performance. At the heart of EMS is the systems approach, and as Welford (1994) suggests, effective environmental management pulls together the different strands of management that can impact upon the environment into a single strategy. Many firms would recognise at least some aspects of their routine management that could be used for more effective EM, but in most cases the potential gains are never realised because managers do not have the impetus to forge
these different tools into an EMS. During the early 1990s the International Organisation for Standardisation (ISO) recognised the need for standardisation of these tools (Starkey, 2000), and in 1993 set up a technical committee to produce standards relating to the following:

- Environmental Management Systems (EMS)
- Environmental Auditing
- Environmental Indicators
- Life Cycle Assessment (LCA)
- Environmental Labeling

This formalisation was an attempt to make environmental management more approachable for the individual manager, and easier to fit into the routine management of the firm. Since then, EMSs have become possibly the most discussed and contested organisational instrument for tackling corporate environmental damage. Discussed because of the potential benefits they can, at least theoretically, deliver; and contested because of the idealism implicit in the business environment to which they are applied. Several commentators have suggested a range of different environmental practices that can affect how a firm operates (Shrivastava, 1992; Hanson, 1995; Fischer and Schot, 1993), and which can be approached through EM. Broadly, as Levy (1997) suggests, these include efforts to reduce pollution at its source, marketing efforts to identify green consumers and thus develop tailored products, and the use of LCA to assess the full cost of the product from inception to disposal. Environmental management is seen as a way for the firm to integrate these practices into a single system commensurate
with existing management routine. Advocates of EM emphasise its similarities with newer philosophies in management, and claim that it may be possible to integrate EM and ideas of 'total quality' on a wider basis in the firm.

Essentially, EM is 'sold' as way of managing environmental impacts without moving too far from normative management techniques. As Cramer (1998) suggests, in theory EM involves the study of all technical and organisational activities that can adversely affect the environment, and how these activities can be mitigated. As she goes on to add, however, this 'mission-driven' approach leads to problems of demarcation, and suggests that to be considered part of an environmental management plan, improvements must be intentional and fall within what has been established in the plan's aims. Philosophically, EM is designed as a mechanism through which companies can take control of the environmental 'threat' internally, but despite a growing theoretical interest, it has not yet generated the levels of interest expected as environmental legislation and regulations increase.

8.7.2: Problems with EM

There appears to have been limited uptake of environmental management systems by SMEs in the food-sector - both internal and external. As O'Laoire and Welford (1999) rightly suggest, such management is not seen as a priority by smaller firms. One of the key barriers, of course, is that many managers have never encountered environmental management, and as such are unfamiliar with its requirements.
SMEs rarely appoint dedicated environmental staff, and as such lack a 'champion' to oversee the system's uptake. There are enough challenges in the day-to-day running of the small firm without introducing what is invariably seen as more clutter. Estimates suggest that in the UK, only 17 SMEs are registered to EMAS, and 254 accredited to ISO 14001 (Hillary, 2000).

The pressures of competition frequently mean that business must consider short-term gain rather than the longer-term planning suggested in EM and sustainable development more generally. The Brundtland Report identifies one of the key conditions for sustainable development as 'futurity' – that is, economic planning along much longer time-scales. Environmental management seeks to achieve this by emphasising to business the benefits of long-term gain, and the costs of inaction. This has proved difficult, especially in the food-sector where short-termism still defines the way many firms look upon business, and where, in many cases, two years down the line is too far in the future to plan.

Welford (1994), in earlier work, has accused small firms of burying their heads in the sand when it comes to recognising the challenge posed by the environment. He has been critical of the way firms have not recognised the advantages of environmental improvement, and have shied away from managing the environment. This has certainly been the case in certain instances, and some managers will always find it easier to turn their back on the whole issue rather than acting. But while EM may not be a priority, these findings suggest that managers are not so much running
away from the issues, but seeking assurances that environmental management *can* deliver in the context of their own operations – both financially and practically.

‘You talk about environmental management, you see…but I bet you can’t tell me where I’d be three years down the line with all that in place can you? …No, I thought not! Seriously, it’s an undertaking I’d have to consider carefully before acting.’

*(Interview 1: Small ice cream manufacturer)*

‘…It’s a paradox really because you’re not going to know how it will work for you unless you’re prepared to make some serious changes to how you work. I’m kind of interested, but there’s no way I’d take that gamble at the moment given the market.’

*(Interview 20: Small bakery)*

‘I’ve read a lot about it certainly, but I’m still not sure it would be worth getting it all set up…what would it really achieve that we haven’t got already – other than saving a few quid here and there?’

*(Interview 12: Small-medium processor)*

As Garrod and Chadwick (1996) have observed, EM is best received where it can be demonstrated that environmental and economic interests coincide. The majority of business literature on EM is policy-centred, and has taken the form of manuals and self-help guides designed to help companies improve on a continual basis (Brezet and van Hemel, 1997; Kolk *et al.*, 1995). Lacking, however, is any real assurance that EM works, and how ‘real’ companies use environmental management practically. Companies interviewed made a distinction between their own operations and those promoted in such literature, and suggests that individual managers do not consider the scenarios and examples described realistic.
'With all respect to these people (in this instance, Business in the Environment), things don't come at you one at a time like they try to suggest. It's bam bam bam...all at once, and you've got to pick up the pieces.'

(Interview 17: Small craft bakery)

'I think that environmental management's all very well, whatever it is exactly, but in reality what you've got to try and achieve is just good all-over management - whatever that is exactly!'

(Interview 12: Small-medium processor)

8.8: A need to manage environmentally

Some of these comments reflect a general ignorance of what EM sets out to achieve, and indicate nothing more than a lack of awareness of specific criteria – for example, a holistic approach, integration, monitoring and evaluation, etc. On another level, however, managers' comments can also be seen as a critique of the normative logic in which business and the environment is predominantly discussed. Assumed above all else is SMEs' desire to correct 'wrongs' in their operation, using the doctrine of EM as a basis. Welford's approach to environmental management is symptomatic of this, and what some critics have labeled as the 'evangelical' nature of many writings, and seems to simplify greatly the process of integrating environmental management into the firm. Newton and Harte (1997), for example, have noted that many green business writers seem content to promote technical solutions to environmental problems – for example, audits and management systems – and assume that such organisational change will precipitate wider ecological
benefits. Such literature (for example, Hutchinson and Hutchinson, 1997; Wheeler, 1992) promotes the conversion to environmental management as largely unproblematic, and describes the process as a series of sequential steps which, while looking impressive on paper, do not look into the practicalities and individualities of different companies working in different areas of the market. In the more 'messy' world of imperfect knowledge and mixed motives, Starkey (2000) suggests, firms are rarely the efficient cost minimisers portrayed in neoclassical economic models. Environmental management is also presented in such a way as to suggest that managers will have to act because it is the 'right thing to do', and it is simply a matter of how best to achieve it. The assumption contained in much of the literature is that companies inherently want to protect the environment, EM being the logical way in which this can be achieved.

During interview, all managers accepted that there was more their companies could do to minimise impacts, but rejected any formal way of doing it. SMEs showed a clear preference for protecting the environment on their own terms, and not 'signing up' to prescriptive models that are perceived as being too binding. The following examples make this point.

‘If we decided to do more on the environmental front, and we may well do that this year, I don’t think I’d want to be governed on how we went about that. I wouldn’t want to make a three year plan highlighting what we’d spend and where…’

(Interview 31: Small confectionery firm)
'It's got to be when we're ready in reality...that might not be for years. We'd got to retain control over what we choose to do. An environmental management programme might not be best for us if we're uncertain of monthly sales, and need to swap priorities frequently.'

*Interview 23: Medium-sized drinks firm*

'That would be too constraining (referring to EM); I like to decide when and where we act.'

*Interview 14: Medium-sized oil processor*

Even where EM is implemented, there are still issues involving how the company absorbs the changes required. Jørgensen (2000) has suggested that organisations' ability to change is crucial in establishing a dynamic EMS, but, as has been suggested, change is problematic for smaller firms where unknown quantities are concerned. Historically, as Cramer (1998) observes, companies have tried to find the appropriate 'fit' between their business operations and environmental standards. In other words they have tried to make their operations fit into loosely defined environmental best practice without any significant changes. As environmental demands become higher, however, this policy may need adjusting to one of 'stretch' where firms actively seek to change their routines to accommodate environmental standards, and continuously adapt to future changes.

A new British Standard, 8555, now offers small firms the possibility of working towards ISO14001 in more manageable stages. This phased approach has been developed through the recognition that SMEs keen to work towards an EMS may be put off because of the workload and commitment of the ISO series targets. All the
stages of BS8555 are third-party certified and are valuable to a company in their own right. The six phases of BS8555 are:

**Phase One** – Securing commitment and establishing a baseline

**Phase Two** – Legal, customer and market requirements

**Phase Three** – Developing environmental programmes

**Phase Four** – Implementation and operation of an effective EMS

**Phase Five** – Checking, audit and management review of EMS

**Phase Six** – EMS Acknowledgement (ISO14001 or EMAS)

### 8.9: Environmental management and total quality

Environmental management shares many of the same qualities and characteristics as Total Quality Management (TQM), and the last decade has seen attempts to apply the same quality ideals of TQM to managing the environment (James, 1994). TQM requires managers to look further than the symptoms of problems and at their causes, thus helping organisations ‘move beyond a compliance mentality’ (p.1). These goals are broadly consistent with those underlying the ‘polluter pays principle’ and the EU’s IPPC regime, and suggest that there may be a mutual benefit in incorporating overall quality issues with environmental protection. Indeed, Robinson and Clegg (1998) suggest that for a company with a TQM system in place, the introduction of an EMS should not be difficult. There is an extensive literature championing the cause of TQM in smaller firms, and yet, as Ghobadian
and Gallear (1996) note, compared to large organisations, SMEs have been slow to adopt total quality ideas. Gale et al. (1985) have suggested, for example, that higher relative quality and market share can lead to substantially higher return in sales, while Peters (1982), drawing on empirical evidence, shows that improving quality reduces operating costs. But firms in the Yorkshire and Humber region have been reluctant to consider the benefits of a more holistic quality assessment (Hull City Council, pers. comm.), and seem content to focus on single quality issues, predominantly those concerning produce and delivery.

'Quality-wise, it would be a waste of time us pushing anything other than product quality because as I've said earlier, the quality and the price of the product are the only things that matter commercially.'

(Interview 25: Medium-sized meat processor)

'We have a strict quality-control procedure in place that governs all produce that comes off the lines, and all communications we have with our customers. We manage to combine those fine...that would be out total quality issue I suppose.'

(Interview 10: Small potato processor)

Why then have SMEs resisted embracing TQM as part of their operation? There are a number of structural differences between SMEs and large companies that have been put forward as central to this shortfall: these include policy-making procedures, utilisation of resources, management structure and corporate culture (Ghobadian and Gallear, 1996). Welsh and White (1981) underline the gulf between small and large when they claim that a small business is not a little large business. But when the core requirements of TQM are laid bare, structural
differences alone should not present SMEs with serious problems in participation. At its heart, total quality stresses the importance of continuous improvement, the identification of root cause problems and the involvement of a majority of employees in the quality issues of the firm. These areas should be equally important to smaller businesses as to larger ones – in some ways even more so. But in terms of EM, or Total Quality Environmental Management (TQEM) as it has been termed, these very characteristics seem to cause their own kind of problems that have acted as barriers to a more widespread uptake of total quality ideas.

8.9.1: The core requirements and shortfalls of EM & TQM

In his extensive work on the topic, Welford (1994, 1998) has suggested that successful EM requires three key components: it must be comprehensive, i.e., cover all facets of the business; it must be understandable to everyone involved, and by definition involve everybody; and there must be a commitment to continuous improvement – that is, the system must be open to review. James (1994) includes similar requirements in his discussion of quality and the environment where he suggests that TQM must demonstrate a belief that quality is everyone’s responsibility, must show continuous improvement, and must address the root causes of all problems. These are clearly areas where the concept of total quality can be applied to environmental management, and indeed, other aspects of a company’s business. Interviews suggest, however, that these core areas may be problematic for SME managers because they create areas of conflict and uncertainty.
within the firm not encountered with other issues. SMEs obviously want to tackle root cause problems, and they clearly want to continuously improve their performance, but approaching these issues as a totality in the way TQM requires is not always conducive to the way their market requires them to operate.

8.9.2: The need for continuous improvement

EM's requirement for continuous improvement places on management a demand for frequent internal assessment and audit of all functions with an environmental impact. Integrating a formal EMS means that the firm is committing not only to the environmental action required on the day, but also for many of the requirements in the future, whatever they may be. Financially, this could mean significant investment, as one set of improvements may well highlight other areas in need of improvement. These costs are unquantifiable for management, and cannot be factored into a year's budget easily.

'We don't have an environmental management system at the moment no...it's a commitment isn't it? In for a penny in for a pound, that sort of thing. It would be unwise for us to commit to something we may not be able to see through - if things were to tighten up over the next few years...?'

(Interview 30: Medium-sized bakery)

'We played around with EM a few years ago. It was okay, but the management got scared when they realised just how much work and reviewing were involved. And on top of that we found that it's difficult to know where to stop with it...one thing leads to another.'

(Interview 27: Small-medium meat & veg processor)
Several firms who claimed to have tried a limited form of environmental management (although the specifics of the system were not discussed) said that committing to continuous improvement was difficult for them — in any aspect of their business - because of financial considerations. Finance has traditionally been a problem area for small businesses (Yusuf, 1997), and cash flow constraints usually restrict firms in their financial planning. This means that only limited funds are available for non-essential work.

'Our finances are wrapped up pretty tight. We're not short on funds, but what we've got has to stretch a long way — it's all spoken for so to speak.'

(Interview 27: Small-medium meat & veg processor)

Continuous improvement may also commit a business to projects that detract from other work seen as necessary to the competitive nature of the industry. Interviews with several managers revealed that, while money was a worry, they were more concerned that 'proper' EM would unearth systemic problems that, potentially at least, could disrupt the profitable areas of the business.

'It's a bit of a double-edged sword isn't it? You try and do your bit by making environmental improvements, but you find that in doing so, there are half a dozen other things come to light that need doing...that you can't afford. What do you do then? Pretend they aren't there or invest more time and money sorting those as well?'

(Interview 5: Medium-sized fish processor)
8.9.3: The need for a holistic approach

Environmental management takes a holistic approach to environmental impacts, and a systemic approach to dealing with all issues. Indeed, this is one of the reasons why TQEM is being put forward as a favoured approach over single-issue management. While tackling environmental impacts in this way is a more effective and, in terms of management, efficient way of working, SMEs are often not geared to this kind of improvement. Those companies interviewed that expressed a preference, claimed that they would rather tackle environmental issues on a single, step-by-step basis rather than as part of an integrated system.

'We have said we'd like to improve our environmental impacts, but it's something we'd like to do in our own time if you know...? Right now we're looking at more efficient ways of saving energy, after that it may be something else...'

(Interview 11: Small-medium fish processor)

'When we are in a more favourable position financially we might look at that yes (emissions), but at the moment we can't invest in anything. An environmental management plan would sort of put you on a conveyor belt that you had to stay on 'til the end wouldn't it?'

(Interview 37: Medium-sized bakery)

One of the reputed strengths of SMEs' management, is that they are more able to make fast decisions and react to rapid market changes without the complexity and time delays experienced by large organisations. Management systems, as opposed to management, are perceived as threat to this kind of freedom, as they tie up
resources and limit operational responses to a range of predetermined areas. In terms of environmental management, companies would much rather invest their finances and expertise in one central area of environmental concern rather than tackle 'the environment' as a single issue. Essentially, avoidance of an EMS, or even an environmental plan, permits the firm to remain non-committal with regard to its environmental impacts, and act as and when the company sees fit. All the firms taking part in the research experienced peaks and troughs in demand throughout the year, which means that cash flow is itself uncertain.

'Turnover is up and down in the food sector depending upon all kinds of things: the weather, national holidays, sporting events... we obviously have greater financial freedom when there's spare cash around.'

(Interview 33: Medium-sized processor)

'...I couldn't really say about that (having an EMS), those things cost money don't they? Before you know it you're committed to spending money on things you can't really afford.'

(Interview 38: Small bakery)

8.9.4: The need for multi-employee involvement

Welford's (1994; 1998) vision of EM is one in which participation is not limited to senior management, but involves employees at all levels of the firm. He suggests:

In arriving at decisions, the calibre and personal integrity of staff are of fundamental importance and each person in the organisation needs to understand their role in decision-making and the consequences of their actions. Decisions are often of a
higher quality when they are participative and systems need to avoid giving single individuals too much power.

By incorporating the views and ideas of workers 'further down' the hierarchy, the system benefits from the input of people working on the cutting edge of the business – that is, closer to where the environmental impacts of the firm are generated. Company-wide involvement of employees also makes more staff aware of the firm's environmental policy, and more aware of other people's responsibilities.

Questions to senior management about the participation of 'shopfloor' workers in management decisions have suggested that they are uncomfortable with the idea of widespread involvement. A number of reasons were suggested for this. For some SME managers, employees did not have the necessary expertise and training to become involved in management decision-making, and were more profitably used simply 'following orders', so to speak. Again, the need for company-wide participation can be linked to the suggestions made in Chapter 5 regarding the need for better education of decision-makers - and within the firm itself, more efficient distribution of knowledge and learning.

'We always have an "open door" policy to all the staff yes, and they're free to come in here whenever they want...within reason, but we wouldn't encourage everyone trying their hand at running the firm if that's what you're suggesting! At the end of the day there are people who're trained to be managers and people who're trained to be operatives...respectfully.'

(Interview 35: Small-medium sized processor)
‘I don’t think that kind of system is practical in the kind of business we have here. I don’t see how we could involve a majority of the workforce in decisions about the environment. The way we do it now is if there’s a problem, we’ll fix it and expect everyone to toe the line.’

(Interview 6: Medium-sized processor)

A stage on from this is the belief of some managers that because the environment and its management are perceived as complex issues, many employees will not have the necessary skills or understanding to contribute in significant ways. In some instances the workers’ assumed class upbringing was used as justification of their unsuitability to involvement in decision-making.

‘I’m not being funny here or anything, but a lot of the people who work in our factory on the manual side are from pretty working-class backgrounds...the area’s not that well educated. I think it would be asking a lot to expect them to have understandings of environmental issues...’

(Interview 38: Small bakery)

The logic behind this thinking was that because employees work in manual capacities, they would not have the necessary skills to contribute to what are seen as more complex issues.

8.10: Redefining environmental management

Without exception, managers interviewed expressed varying degrees of concern over the idea of environmental management. Their concerns centred on the fact that EM was either superfluous to their needs, or too structured and rigid to be viable in
a practical way. These are issues that, through the more comprehensive learning and sharing discussed in Chapter 5, can be tackled on a practical level. Interviewees see EM as inflexible and out of step with normal management when, ironically, in step with daily management is what it is designed to be. The problem, therefore, is in what managers understand the requirements of EM to contain, and whether they believe their current structure can accommodate its scope.

Where better education can help, is in encouraging staff to see EM and EMS as more than simply a two-way switch, where they are either on-board or not. Nor should they believe that by having an environmental management system, they are committing either time or resources in an irreversible way. A more sensible approach would be to promote EM as a way for the SME to: a) become aware of its impacts, and then: b) set targets for itself based on projected growth, and informed by this new learning and awareness. Critics would of course suggest that such an approach essentially permits a firm to achieve nothing if it so desires, and this is of course a possibility. But at least in this manner there is scope for all firms to achieve something, rather than the current, counterproductive position where a small handful act and the rest simply follow the compliance culture of minimal action.

The best way of encouraging more direct environmental action from SMEs across the region, is to promote EM in such a way that it is not seen to clash with the daily requirements of those who will invariably be running it.
8.11: Chapter conclusions

As well as looking at specific environmental programmes, this chapter has considered the motivating factors underlying environmental initiatives implemented or planned in firms across within the sample. Although previous chapters have suggested that knowledge on environmental issues is thin, and action limited, there are a number of examples from across the region that highlight the potential for improvement on a wider scale. Discussing environmental improvement as either proactive or reactive is considered, and critiqued as overly simplistic. In general, however, although learning takes place and knowledge increases within some firms, there is seldom any corresponding action as a result.

- Supply-chain pressure is not the driving force behind environmental action in the sector, despite the coverage it has received in many texts. SMEs will listen to the market if it speaks, but at present there is no incentive coming from major retailers for firms to engage in environmental improvements.

- The majority of environmental initiatives implemented are done so under the basic premise of housekeeping and cost cutting. Environmental action is thus not a 'pressured response' to calls for improvement from outside, but the result of routine company activities designed to improve efficiency.

- Environmental improvements are usually considered as falling into two main categories: proactive and reactive. In reality the distinction is not that clear cut. Proactive measures are themselves based on management reaction to
future risk or opportunity. A more helpful way is to consider firms exhibiting different degrees of anticipation, determined by their access to and understanding of environmental and regulatory knowledge.

- Environmental management, while offering SMEs a way of dealing with the environmental challenge using familiar management techniques, has not been embraced in the region on a wide scale. Environmental management requires long-term commitment to change and monitor, and many firms are reluctant to embark upon a programme of change that, potentially at least, has no end.

- SMEs in the sample fail to include the environment in their descriptions of total quality. Despite the possibilities for incorporating environmental protection under the wider auspice of Total Quality Management (TQM), companies prefer to approach quality issues on an ad hoc and individual basis.

- It is suggested that environmental management has a poor image among those firms who expressed an opinion. Managing environmental affairs needs to be promoted as flexible and responsive to individual SME’s position and finances, rather than as a prescriptive series of measures for all firms.
NINE: CONCLUSIONS

9.1 Introduction

Using thirty-eight (38) food processing/producing enterprises across the Yorkshire and Humber region, this thesis has looked at how environmental issues affect small businesses, and how businesses are responding to the new requirements for learning, environmental knowledge and action. Through a close-up study of managers' views, opinions and value judgments on environmental issues, it has suggested that, while the literatures on business and the environment, learning and management provide a starting point for understanding company behaviour, there are more complex processes at work that can only be understood by considering sector-specific pressures and the emotional involvement of decision makers.

The thesis focused on four areas: knowledge, knowledge and/of regulation, learning and action. Working in this order, it was the intention to move through the stages a firm itself moves through when working towards environmental improvement. Chapter 5 (Knowledge) considered the kinds of knowledge a firm works with and how, and where, such knowledge is sourced. As well as suggesting alternate designations of knowledge – tacit as well as rigid conceptions – the chapter also looked at issues of confusion, overlap and trust in the provision of such knowledge. Chapter 6 (Knowledge and Regulation) then looked at one of the most important areas in which firms need to be knowledgeable – that of regulation and legislation.
The chapter explored what firms understand of their regulatory obligations and their attitudes to an increasing regulatory load. Regulation as a motivating force was considered, before moving on to look at the process of regulation itself, and how managers react to the loss of control implicit in this process. Learning is perhaps the most important activity this thesis covers, and chapter 7 looked in detail at the process of organisational learning and how this impacts upon environmental improvement. Types of learning were considered, and the differences between large and small firms examined. The second half of the chapter looked at learning without acting, and then considered how and when learning is communicated within the firm. The final empirical chapter, chapter 8, looked more closely at environmental action, and actual examples of work implemented by firms in the sample. This chapter summarised five examples of different kinds of environmental improvement, and looked at the motives for each. It then went on to look at the difficulties of classifying these actions as either proactive or reactive. The problems of ‘selling’ environmental management to SMEs were discussed, as were ways of approaching environmental management though the broader vision of total quality management.

This ultimate chapter therefore has two aims. It seeks firstly to bring the different empirical findings and discursive content of chapters five through eight, to a more substantial and solid conclusion. In so doing, a number of positions on environmental awareness and action are suggested which, while drawn only from the firms used in the sample, may be used as templates or scenarios for other
empirical studies of small businesses and environmental issues. Secondly, it offers space to position the findings of the research within the wider literatures discussed in chapter 3. The theoretical material used in this research draws on the now well-established business and environment literature, organisational learning, knowledge creation and SMEs training and development work. These conclusions acknowledge the important contributions made by this material, but also seek to expand on previous work in ways the empirical material has indicated. In addition, the thesis, where applicable, makes a number of broad recommendations - for business and regulatory agencies - as to how the various conclusions drawn might be operationalised into positive and environmentally beneficial responses.

9.1.1 Knowledge

The chapter has considered in very broad terms the question of knowledge: its acquisition, its handling, and SME responses to their growing need to incorporate environmental knowledge and information into their operations. There is, however, no directly causal relationship between higher levels of environmental knowledge and increased environmental improvement. Although possessing some level of environmental knowledge is a necessary precursor to environmental improvement, a great many factors influence the decision making of company managers, and as is suggested during the chapter, seeing the environmental challenge as important in relation to other company issues is key. At the root of this challenge lie the definitions of knowledge that have pervaded organisational learning theory for
decades – definitions that Nonaka's (1996) work on the knowledge-creating company has sought to redress. Where traditionally knowledge was seen as 'hard' information, Nonaka has suggested that informal, tacit knowledge (such as employee skills, beliefs, understandings, etc.) is equally important for the development of the firm. These rigid conceptualisations of knowledge inform much current business and environment thinking (for example, Welford, 1994; 1998; Elkington and Burke, 1987; Elkington et al., 1991; Friedman et al., 2000), and while clearly important in the context of technological development, have stifled newer approaches that have sought to situate the workforce in models of knowledge creation. The thesis has tried to challenge these narrow conceptions of knowledge by suggesting the way forward lies in greater participation, not only by the workforce in general, but by a more representative cross-section of management.

In reality, however, it is difficult to see from the interviews conducted how SMEs in general – and the food-sector specifically – can move past their very linear and basic attitudes to knowledge acquisition and use. While theorists may call for a more holistic definition of knowledge (Blacker, 1993; Cook and Yanow, 1993), and a rethinking of how knowledge is sourced and created, it is likely that management will continue to seek prescribed fixes to their problems, and will continue to be at best predictable, and at worst myopic, towards problem solving. While part of this problem is attributable to the confusion and misinterpretation bound into environmental issues within a business setting, the fieldwork has highlighted that change itself is a powerful inhibiting factor. Orthodox management structures, and
in particular their reliance on hierarchies of control, stifle non-conventional forms of action and innovative thought. And while solutions to environmental problems may exist in-situ, traditional views on who should/should not contribute to problem solving prevent these solutions becoming procedure. The SMEs managers interviewed were more comfortable with bringing knowledge into the firm on their own terms, rather than fostering what Nonaka (1996) has termed tacit knowledge.

The chapter has also raised questions about SMEs' willingness and desire to embrace the growing requirement for new knowledge. The 'If it ain't broke don't fix it' mentality seemed to dominate in the SMEs interviewed, and accepting that new expertise and competencies are required is a major barrier in its own right. The academic literature is in general agreement that change be welcomed as part of continuous innovation. Murphy (1996) has suggested that change is a necessary component of successful development, while in the logistics management field, Wiele and Brown (1998), McAdam et al. (2000) and Lefebvre and Lefebvre (1993) all agree that innovation cannot occur without some form of change. Within the food-sector, and more specifically in the highly competitive conditions of the Yorkshire and Humber sub-region, embracing new skills and knowledge not seen as directly beneficial to bottom line is problematic. The Federation of Small Businesses (FSB) (2001) estimates that the vast majority of SMEs believe their own skills and capabilities to be the most important factor in their business success, and while external sources are important to them, 'homegrown' knowledge is vital.
On one level, these findings support observations made in this fieldwork, and reinforce the view that SMEs tend to 'close off' to knowledge that does not fit within their paradigm of growth or development. On another, developing and exploiting such homegrown knowledge is precisely the platform that Blacker (1993), and later Nonaka (1996), speak of in their discussions of employee interaction and learning. It is reducing the reliance on externally sourced, 'hard' information, and encouraging more internal, discursive problem solving that may enable SMEs to utilise more of their human resource.

To this end, the thesis suggests that SMEs reassess what knowledge means to them, both in its definition, and the accepted mechanisms for bringing it into the company. The OECD (2000), for example, sees knowledge as a crucial input to competitive economic activity and the generation of economic growth, while Sparrow (1998) has suggested that knowledge is that thing 'organisational participants' have in order to perform their jobs. But to be more innovative, it will be increasingly necessary for SMEs to utilise the strength of their employees, and the latent knowledge and understandings contained therein and encourage greater cooperation and communication in the pursuit of problem solving.

The managers interviewed are aware of this need, but in terms of operationalising environmental knowledge, risks are seen as just too great to justify time and expenditure. Risk is one of the principal factors governing attitudes to the environment and subsequent action, and as has been suggested in this thesis, is
closely related to commitment and environmental improvement. While the perception of environmental threat is influenced by risk, the risks involved in environmental action/inaction are themselves important in steering perceptions. Where SMEs are faced with an environmental challenge, a number of risk positions are created. Firms experience this in two ways: risk of environmental damage as a consequence of certain activity or inactivity, or the risks to their own operation as a result of either non-compliance or ignorance.

The fact that risks exist at all, or rather, that they take on the definition seen with environmental issues, is bound into more widespread trends throughout society, and its growing need to distribute and monitor risk. Ulrich Beck (1992; 1994) used the Environment to highlight these trends when he suggested a transition from normal society to risk society. With mounting legislation, supply chain pressure and recent calls for greater corporate social responsibility (CSR), it is easy to see how these risks take on financial and legal importance for businesses. Many firms, however, seem unwilling to admit that practiced aspects of their business are capable of generating risk that falls outside that which they are normally used to dealing with.

Part of this problem is down to ignorance, and a short-term vision of the important role business can play in securing environmental improvements. More worrying, perhaps, is the unwillingness many firms show in considering the ‘knock-on’ or cascade effects of ignored risk years down the line. Clearly, ignored legislative demands will result in tangible financial penalties, as will failing to comply with the
environmental purchasing policies of larger customers, but SMEs must also take notice of risks that do not carry the same clearly marked consequences – such as CSR. Again, this suggests that firms must broaden their understandings of environmental issues, not just in terms of the direct impacts of their operations, but also their obligations in a wider social context.

Consequently, these risks are downplayed and are not seen as being great enough to prompt widespread action. Again, interviews suggest that the incomplete picture many managers have of environmental improvement programmes may be responsible for this. It is growing increasingly important for the knowledge that informs SME management to be tailored more directly to the specifics of what they produce on site.

In terms of direct causality, SMEs doubt that that their processes are causing as much of a problem for the environment as many bodies suggest, because there is no tangible or immediate proof for them. Climate change and ozone depletion, for example, are seen as issues a long way removed from the realities of business life in the Yorkshire and Humber region. The knowledge required to deal with 'regular' business problems (i.e., those relating marketing, sales, purchasing, for example) is real and definable, whereas environmental issues come across as cloudy and uncertain. Such uncertainty raises issues of credibility among managers, and in the absence of clearly defined knowledge on which to act, companies believe
themselves justified in pursuing minimal action. Environmental issues as thus seen as peripheral to the main functioning of the firm.

While firms interviewed blamed the structure of information provision and the content of environmental help, the low uptake of environmental knowledge among SMEs is also the product of the sector’s response to longer-term change, and new information more generally. The Government has been keen to promote the advantages of a knowledge-driven economy, and the benefits knowledge acquisition can have for competition. However, taking on board this kind of knowledge requires strategic and long-term planning by a company, especially in terms of finance. This thesis has put forward evidence to suggest that this need for longer-term thinking may be responsible for the resistance SMEs put up when presented with learning opportunities or new knowledge. Taking on board such ‘new knowledge’ for environmental improvement requires strategic and long-term planning by the SME, in terms of finance and implementation. Interviews suggest that SMEs in the region, due mainly to the uncertain nature of the food market, operate with quite short-term vision in much of their decision-making. This short-termism is reflected in the planning strategies of the firm, and this is difficult to reconcile with the longer-term vision needed to successfully implement, and observe benefit in, many environmental programmes. The food-sector is perhaps more accustomed than most to rapidly changing market conditions, and as such is reluctant to plan (and invest in) initiatives that are essentially seen as bottomless pits where finances are concerned.
9.1.2 Organisational learning

The now extensive literatures on organisational learning (for example, Senge, 1990; March, 1996; Levitt and March, 1996) focus in contrasting ways on the question of individual versus collective learning capacity. Primarily they have asked whether learning in the organisational setting is the product of individuals learning side by side, or the result of some emergent social learning ability that is accomplished by a group. Chapter 7 suggested that, with environmental issues, a small select group of employees – usually senior managers – assume the role of corporate learners, and take on information in an unstructured and largely reactionary manner, restricting that information to those individuals deemed best able to act on the new knowledge. A defining feature in the academic literature over the last few decades has been the growing tendency towards social content in learning approaches. Earlier work (Cyert and March, 1963; Argyris and Schon, 1978; Duncan and Weiss, 1979) placed emphasis on individual action in the workplace. More recent work (Levitt and March, 1988; Huber, 1991; Weick and Roberts, 1993) has started to acknowledge the interrelational aspect of organisations, and looks to link learning theory in with this.

The first point to make here is that, while these newer directions in organizational learning research represent a progression from earlier work, they are similar in that they assume a need or desire to learn in the organizations they study. Focusing
mainly on large organizations, there is an implicit assumption that learning and the import of new ideas and knowledge is the natural, and even logical way forward for positive companies.

This fieldwork has shown that this assumption cannot always be made, and the examples taken from the two smaller size bands of SMEs suggest that some managers are content to simply use the knowledge they currently have, regardless of the existence of newer ideas. This can be placed in wider context by considering some of the comments of managers regarding growth and future profitability. Learning in the business setting is implicitly linked to increasing efficiency, and from there profitability. New ideas and concepts are brought into the company to reduce wastage, cut operating costs, promote the company more effectively, or indeed any other outcome to increase competitiveness. For some owners or managing directors, these benefits simply do not offer the attraction or make the kind of business sense taken for granted in many learning models. The unpredictability of the food-sector within the Yorkshire and Humber region make any kind of risk-taking – learning included – an avoidable action.

It may also be an unnecessary action. The comments of several managers suggest that they are happy with the profit margins they are currently experiencing, and to embark on a programme of organizational learning would, given this satisfaction, be a waste of time. This was not a common view, but it suggests that to make generalizations about learning is problematic, as is the assumption that all business
learning is designed to support financial growth or expansion. The findings of chapter 7 suggest are more unstructured and inflexible approach to learning that can best be described as reactionary. Where learning occurred, interviewees were honest enough to admit that it was where there was a clearly defined regulatory or market requirement to do so.

Despite the obvious need to out-perform their competitors in the food-sector, the SMEs interviewed showed little tendency towards this more inclusive form of learning, and were content to appoint key members of staff to do this on behalf of the firm. This behaviour reflects what Elliot, et al. (2000) refer to as a 'centrality of expertise', and does little to encourage the majority of employees in the workplace to become active in thinking and learning about environmental issues. The models of organisational learning put forward in the chapter (single- and double-loop) are shown, therefore, to be applicable only in the sense that managers interviewed consider one issue or problem at a time, and direct resources into correcting it. More holistic problem solving, at least in regard to environmental issues, is seldom considered. When challenged on this need during interview, managers admitted that the workforce could be utilised in more inclusive ways, but that the pressures of production and other logistical issues prevented such advances.

These observations support Fryer's (1997) suggestion that, while there may be the desire, companies lack general help on how to become a learning organisation – particularly in the way suggested by Nonaka (1996). Nonaka’s view of learning
(described as the knowledge-creating company) sees all employees - management and others - working together to actually produce knowledge in situ. In its specifics, this theory is ill-suited to the companies interviewed, where management and shop floor staff are separated not only physically, but also in terms of what their prescribed roles and capabilities are seen as being.

Empirical observations from this fieldwork run counter to organisational learning theory that challenges linear, traditional modes of working. The newer, socially situated approaches that look to integrate sociological and psychological approaches into learning would see these environmental problems as challenges ready made for their more inclusive modes of learning. Orr (1990) and Brown and Duguid (1991), for example, are critical of 'individualistic' notions of learning, and favour more grounded approaches that look at cultures and ways of life of employees and firms. For these authors, the solutions to problems are just as likely to be located within the human resources of the firm than in any technical or best-practice manual. These models of learning are clearly some way distant, and Weick and Robert's (1993) ideas of 'heedful interrelating' in the workplace seem at odds with the well-established culture of hierarchical control and line-management prevalent in the sector. Indeed, the organisational learning approaches that place the subject of learning anywhere but with the individual (Huber, 1991; Fiol and Lyles, 1985) seem to have no practical significance in relation to environmental learning in this setting.
This static vision of learning reflects many of the comments made in the previous section regarding knowledge—namely, that as a business or organisational issue, active or ongoing learning is not a priority area for management. Where modern OL theory fails to account for what is happening in the sample is that managers need to be able to translate learning quickly and visibly into positive solutions. Hamed and Prahalad (1994) accurately sum up the situation when they suggest that at some stage, learning must enable the firm to better meet customer needs. Environmental goals, such as the development of an EMS or policy statement, are not yet understood in the context of customer needs, and the impetus for learning is therefore lacking.

This is not to say, however, that the firms interviewed did not take a structured approach to problem solving when required. Firms showed adaptability in their responses to problems, even if those responses were the product of minimal consultation and development within the firm. This short-term approach to learning can be observed in the tendency of firms to adopt prescriptive, end-of-pipe measures to dealing with their environmental problems rather than longer-term preventative measures.

Learning about the environment, by any process, is currently ‘fired’ by specific events such as regulator contact, occasional supply chain involvement and on rare occasion, community pressure. It can best be described as episodic rather than continuous, and this may thus explain the absence of a developing and ongoing
learning culture in the SMEs interviewed. In relation to OL theory, learning is 'single-loop' and threat-driven, providing the basis of a defensive or preparatory mechanism to counter change. This is true not only of environmental learning, but other aspects of corporate activity, where there is direct pressure for change. Management scientists have been critical of SMEs' laissez-faire attitude to developing continuous programmes of improvement, of which organisational learning is part. Kinni (1995) and Gunasekaran et al. (1996), for example, have suggested that SMEs need to readdress the basic aspects of their operations, such as people, culture and processes. In so doing, it is possible to connect parts of — and people within — the operation that previously had no connection, and therefore expose new combinations of expertise and different ways of looking at environmental problems. OL literature (for example, Orr, 1990; Brown and Duguid, 1991) follows the logic of this argument and suggests that learning may be considered action and interaction, and embedded in the processes of discussion, argument and negotiation. Businesses interviewed were not completely ignorant to this kind of reasoning, but claimed that the pressures of maintaining constant production output for large customers acted as a strong deterrent for tampering with the proven and tested dynamics of the firm. Thus, while approaches to OL make valid claims as to the importance of learning, they also make little accommodation for the demands and production targets most manufacturing firms have to meet, and the time limits these impose. Realistic learning and training targets for SMEs — including environmental targets — must therefore be based more around the available
time company personnel have, and the key areas managers see as important in the short term.

The availability of information was also an issue. In terms of pathways for learning, SME managers believe that more should be done to bring knowledge to the company rather than the company to knowledge, which has implications for the mechanism Government uses to distribute environmental information to businesses. Learning structures are seen as poorly developed, and if the Government wants business to be greener, managers believe they should do much more to facilitate this change by way of information provision.

Smaller SMEs in the sample see risks to their future more clearly than larger operators, and their attitudes are therefore more positive towards learning. Larger SMEs with more complex management or outside ownership believe themselves to be less at risk, and rely on others (trade groups, MNC owners, etc.) to do their learning for them. The 'It couldn't happen to us' argument is frequently used by larger companies to avoid the necessity of becoming involved in continuous and possibly costly learning. Many smaller SMEs, while lacking the financial resources of larger firms, see environmental issues as a clearer threat even though they are arguably able to do less about them.

Learning does not necessarily lead to direct action. Interviews suggest that, in many firms, there is at least some 'latent' knowledge not used. Disruption to the supply
continuity of the operation – particularly to supermarket trade – is the major worry for all size SMEs, even if the knowledge and finance to act is in place. Timing is cited as the important factor where marrying the need to act and the ability to act is concerned. More than half the firms interviewed claimed that they were worried that by disrupting the continuity of their operation to implement environmental improvements, trade would be adversely affected. This suggests that to enable those firms able to act, a greater sense of security is required.

9.1.3 Environmental action

Chapter 8 considered the motivating factors underlying environmental initiatives implemented or planned amongst firms in the sample. Although previous chapters have suggested that knowledge on environmental issues is generally poor, and learning limited, there are a number of examples from across the region that highlight the potential for improvement on a wider scale. In general, however, where learning takes place and knowledge increases within firms, there is seldom any corresponding action as a result. Learning more and knowing more do not always lead to doing more.

Supply-chain pressure is not the driving force behind environmental improvement in the sector, despite the positive coverage it has received in many commentaries. The majority of environmental initiatives implemented are done so under the basic premise of housekeeping and/or cost cutting, and are not responses designed first
and foremost with the environment in mind. Environmental improvements discussed by the SMEs interviewed are therefore not pressured responses from the supply chain, but the result of routine company activities designed to improve efficiency—usually in response to legislative pressures. Managers claim they will listen to the market if it speaks, but at present there is no incentive coming from major retailers for firms to engage in environmental improvements.

This suggests that the supply chain pressure that has proved effective in the automotive and chemical industries, for example, has yet to act as a positive force for environmental improvement in the food-sector. The reason can be found in the competitive and highly fickle nature of food retailing, where tastes and trends shift regularly making quantity and quality of produce the most important factors for SMEs supplying major retailers. And, while supermarkets use food-standards as an index of quality, there is as yet not the same emphasis placed on environmental quality standards or environmental management systems. The major retailers can themselves play a role here by more aggressive marketing of the environmental standards of their products. Such labeling could stimulate the supply chain to take up such environmental guarantees as standard, although whether there is the necessary stimulation to do so is still questionable.

Environmental improvement, and awareness more generally, is usually considered as falling into two main categories: proactive and reactive. This chapter has suggested that in reality the distinction is seldom this clear cut. Proactive measures
are frequently based on management reaction to future risk or opportunity, and are not, therefore, proactive in any ethical or moral sense. A more helpful framework for explaining action is proposed, whereby firms involved in different kinds of environmental initiatives exhibit varying levels of anticipation or readiness, determined by their access to and understanding of environmental and regulatory knowledge.

Environmental management, while offering SMEs a way of dealing with the environmental challenge using familiar management approaches such as reporting and input-output analyses, has not been embraced in the region on a wide scale. Environmental management is seen as requiring long-term commitment to change and monitor, and many firms are reluctant to embark upon a programme of change that, potentially at least, has no clear end. SMEs in the sample thus fail to include the environment in their projections of total quality. Despite the possibilities for incorporating environmental protection under the broader auspice of Total Quality Management (TQM), companies prefer to approach quality issues on an ad hoc and individual basis. A number of reasons are suggested for this, most notably firms' concern that continuous improvement programmes commit financial resources that may be needed elsewhere should the emphasis of the market change suddenly.

Supermarket pressure for environmental improvement amongst their suppliers is only likely if there is complementary pressure from the general public on supermarkets. SMEs suggest that until such pressures act in unison, there is little
point in them investing time and resources in environmental improvement on these grounds alone. A small number of firms believe that it may be possible to 'jump start' the supply chain into greater environmental awareness, however, if enough manufacturers start implementing and advertising their environmental credentials. As more and more manufacturers and their products become certified with environmental best practice, so the logic runs, this kind of activity will gradually become the sector standard, and firms not participating in such guarantees will be discriminated against by the consumer. It is doubtful that this will become a reality in the foreseeable future simply because of the practical difficulties in establishing cross-sectoral quality standards that will be understood by the public at large, and because at present the public are largely unconcerned with technicalities of the production. With the exception of GM foods, customer demand for any environmental quality guarantees in the production chain is extremely rare. Improved regulatory controls thus seem to be a more realistic option for increasing the environmental awareness and activity of food-sector SMEs across the region. As the final section suggests, despite its fundamentally restrictive nature, environmental regulation could play a more enabling role in the development of environmental best practice.

9.1.4 Regulation

Chapter 6 looked more closely at regulation, and the way managers accommodate the regulatory process, from the legalities of regulations, to the process of
regulation. The chapter sought to understand what, if anything, managers feared or disliked about regulations, what they knew of their legal obligations, and how they felt about the regulatory process itself – including the role of regulators. Many food-sector enterprises fall outside the scope of established regimes such as IPC and IPPC, and are policed by several independent bodies responsible for the different environmental impacts the sector generates. Based on comments put forward by management, a more business-friendly, although arguably expensive, system of regulation is proposed, whereby the interests of the sector are more fairly represented.

In the traditional sense, regulation involves the checking and monitoring of industrial activities, sometimes involving the use of legal powers. In that it represents a means of control or interference, SMEs interviewed had largely negative associations with regulation as a whole. Indeed, dissatisfaction with all aspects of legislation and regulation were high across the Yorkshire and Humber region during recent years (FSB, 2002). A more immediate worry from an environmental perspective is that many firms (50% of the sample) knew there were more specific regulations of which they were non-compliant, and used ignorance as justification for this inaction. Responsibility lies with company managers to ensure their firms' activities fall within all applicable regulations, and as such they must take whatever measures are necessary to ensure they are informed of all relevant law. But while this is important in itself, there also needs to greater understanding of regulations: why they are in force and what purpose they ultimately serve.
Managers go along with regulation because it is required, but few actually articulated any clear understanding of the environmental benefits underlying these requirements, or related them to the application of cleaner technologies.

Management of all SMEs interviewed, but in particular the smaller businesses, believe that at present, the scope of regulations affecting them is unfair considering what they believe to be the insignificant impacts of their sector. Managers argue that the framework of environmental regulations currently in place is designed to meet the impacts of big business, and the significantly higher environmental threat these firms pose. The case is made for a more tailored set of regulations proportionate to the impacts of SMEs, and in particular ‘low risk’ SMEs. Such suggestions seem to be made in ignorance of the large cumulative impact of SMEs’ production processes, however, and managers rarely view their own firm’s impacts as being part of a larger-scale problem. It is likely that part of this problem lies in the fact that managers have a very narrow idea of what regulation is there to achieve. Regulation ensures the public interest is served, its context being established by the wider policy framework (Gouldson and Murphy, 1998). Regulation therefore supports policy and is a system of controls designed to legitimate political decisions. Seen in this light it is hardly surprising that businesses often reject the fundamental goals of regulation, and look to either ignore aspects of it, or comply with minimal action. The problem regulation has within the context of small firms and environmental issues, is that it is not perceived as being in the public interest. Regulation is amalgamated with legislation, predominantly
European legislation, and to this end is seen as distant and remote from the realities of business in the region – and the interests of the public.

It is unlikely this will change, given the EU’s agenda for environmental reform over coming years. The important work now lies in recasting regulation in a more positive light, and rather than using a language of enforcement and penalty as a threat to SMEs, use the considerable scope and content of environmental regulation as a learning resource. Regulators need to do more to encourage small businesses to approach regulation, and the personal contact this entails, as a forum for learning and advancement. Although the Environment Agency now sees its role as much more of a provider and partner to industry, the profile of this body is still steeped in mistrust. The Agency, the two water suppliers in the region, and to a lesser degree the local authorities, together form a vast environmental knowledge resource that needs to be exploited by business wherever possible. Drawing on SMEs’ observations regarding the sourcing of environmental knowledge, and the preference for ‘one stop shopping’ for information, there is surely a case for closer cooperation between all regulators to project a more united front, both for regulatory activities and as for the provision of information.

Although contact time between environmental regulators and food-sector SMEs is relatively small, managers tend to make their judgements of regulator competence, and the regulatory system as a whole, on the basis of very limited communication. The process of regulating business by necessity entails close contact between
regulator and regulated, whether that be face-to-face or any other form of communication. Such contact is often taken to be unwelcome, as it challenges the autonomy of the firm, and represents a form of control that can be read as intrusive. Stephen Fineman's work emotions and control in the workplace is instructive in viewing the process of regulation as give and take - that is, not a unidirectional flow of control from regulator to regulated. Managers, however, whether or not there is any room for maneuver in the regulatory exchange, are still under pressure to comply. Developing trust and reciprocity are important base conditions in the eyes of many managers, and while regulation with a regional bias seems more acceptable, national bodies come in for more criticism as they are seen to be overly bureaucratic and out of touch with regional or local issues.

Over the coming years there seems certain to be an increase in the scope and depth of environmental regulations. These will affect all businesses, large and small, but with so many UK businesses classified as SMEs, more research is needed to understand how the management of these companies will handle such regulation. The hope is that control by the state - and various private sector interests – will kick start the business sector into more environmentally friendly behaviour. Through so doing, regulation thus becomes the platform from which many firms will take forward their own environmental management or best-practice programmes. As the thesis has suggested, however, there is currently insufficient knowledge about how the people owning and operating smaller enterprises think and act in response to this regulation. An increased regulatory load may not be the best way to promote the
environment to a largely skeptical audience, and may only serve to strengthen the
resolve of managers already resistant to the new challenges of environmental
management. The academic community has a lead role to play in broadening this
understanding, and illuminating ways that regulation can perhaps be applied in a
more productive manner. More work is needed in exploring alternative delivery
mechanisms for regulation, and different ways of policing such measures.

9.2 Final comments

Environmental improvement and efficiency are increasingly being portrayed as the
right way forward for businesses both large and small. Government and its agencies
use several different approaches to justify this, the most wide-ranging and forceful
being the economic, or win-win argument. By integrating environmental
improvements, SMEs can save money on energy bills, raw material costs and waste
disposal charges, at the same time reducing their environmental impact. These costs
impact significantly on profitability. This message is not lost on managers of all
size companies, and as select case studies have shown, improvements have been
made on the strength of this argument. There is still not widespread acceptance of
this logic, however, and this thesis has suggested that SMEs only go down this road
where time and finances are optimal - a situation that is seldom encountered in the
food-sector.
The message that all chapters of this thesis have sought to communicate in some form is that there is a complex, even chaotic element to the acceptance of 'the Environment' in the region's SME base. Predicting when and how environmental improvement becomes the favoured option is difficult, and to isolate a clear set of base conditions that can be applied to other companies or sectors is problematic. The now widely accepted work of Shrivastava (1996), Welford (1993) and Elkington (1994), who have championed the win-win logic of environmental management, can be seen to represent an over-simplification of issues in the Yorkshire and Humber food-sector. Their arguments assume managers working in optimal business conditions, and a workforce continually supportive of management decision-making. The evidence presented in this thesis suggests more uncertainty about the future, and policies designed to prioritise immediate issues at the expense of longer-term goals, even if they are potentially profitable. Decisions to act on the environment are often taken in response to criteria not necessarily in line with short-term planning or readiness.

Where the real challenge still lies, is in convincing SMEs managers and owners that making the effort to implement such improvement is worthwhile as a longer-term commitment. The argument may make sense on paper, but management have more pressing uses for their often limited financial resources on a day-by-day basis, and making environmental improvements, for all their financial reason, are seen as low-priority actions. As interviews have suggested, companies are more likely to bow to market demands and appropriate their resources on activities that guarantee quicker
return, or that increase potential earning through product range and innovation. The customer base does not at present place any appreciable demands for environmental quality from their suppliers.

Ideally, environmental improvement needs to appeal more to the moral responsibility of company employees, which at present tend to extend only as far as to the continued employment of the workforce, and fulfillment of order obligations.


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APPENDICES
INTERVIEW SCHEDULE (Non-SME)

Short introductory discussion detailing reasons for research, aims and objectives, etc. Reasons for interview with this particular organisation.

"The reason for this interview is to…"

General

1) Can you tell me a little about your organisation?
   - What do you do?
   - How much contact do you have with SMEs
   - Do you have staff trained to deal with environmental issues?

2) Do you have a clearly defined remit with regards the help you provide SMEs?

3) Would you say that your contact with SMEs has increased or decreased over recent years?

4) Can you say a little about the availability of advice to SMEs across the region in a general sense?
   - Is there enough?
   - Are the right people providing it?
   - What else could be done?

Knowledge

1) Could you just tell me a little about what environmental issues mean to you?
   - How are they defined?
   - Is this view endorsed by the organisation generally?

2) In general, would you say that there is adequate information/advice available to the businesses you deal with?
   - Say a bit more about this if yes or no...

3) Where does that information come from?
   - What role do you play in supplying that information?
   - How often does this take place?
   - Define the relationship you have with SMEs
4) Is one of your organisation’s primary aims to supply information and knowledge to companies?
   - Could you tell me a little more about how this happens?
   - Do they come to you or do you go to them?

Regulation

1) How much do you understand about the environmental legislation and regulations that currently affect food-sector firms across the region?
   - How much legislation are you aware of?

2) Can you tell me a little about the most important/immediate pieces of legislation, and why this is the case?

3) Do you think compliance with environmental legislation is widespread?
   - If not, why? What inhibits this?

5) Do you get requests from SMEs to advise on legislation and regulation?
   - What kinds of advice do you get asked for?
   - Do firms look for ways to sidestep legislation?

Learning

1) What are your impressions about how the companies you deal with learn (not just about environmental issues, but anything)?

2) What would you say typically happens to information you impart to a company owner/director/manager?
   - Who do they share it with?

3) What is the reason for learning

Environmental Action

1) What activities have your company taken part in that could be labelled ‘environmental’?
   - How much money has the company spent on them?
2) Have there been any improvements/changes that have had environmental benefits that have been unintentional?