MANAGING SOLID WASTE IN SMALL WELSH HOTELS IN AN ENVIRONMENTALLY RESPONSIBLE WAY

By

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Thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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Wales, October 2009
Hatim R.I. Radwan
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<td>ARF</td>
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<td>B&amp;B</td>
<td>Bed and Breakfast</td>
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<tr>
<td>BERR</td>
<td>Department for Business Enterprises &amp; Regulatory Reform</td>
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<td>BPEO</td>
<td>Best Practice Environmental Option</td>
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<td>BRASS</td>
<td>Centre for Business Relationships, Accountability, Sustainability and Society</td>
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<tr>
<td>CEC</td>
<td>Commission of the European Communities</td>
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<td>CIPS</td>
<td>The Chartered Institute of Purchasing and Supply</td>
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<td>CRN</td>
<td>Community Recycling Network</td>
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<td>DSD</td>
<td>Duales System Deutschland</td>
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<td>EEE</td>
<td>Electrical and Electronic Equipment</td>
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<td>Environmental Technology Best Practise Programme</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GTBS</td>
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<td>IHEI</td>
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<td>ISO</td>
<td>International Organisation for Standardisation</td>
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<td>ITB</td>
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<td>LCA</td>
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<td>LTCS</td>
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<td>MRF</td>
<td>Material Recycling Facility</td>
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<td>MSW</td>
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<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
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<td>PCS</td>
<td>Producer Compliance Scheme</td>
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<td>Producer Responsibility Organisation</td>
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<tr>
<td>VAT</td>
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<td>World Commission on Environment and Development</td>
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<td>Waste Electrical and Electronic Equipments</td>
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DECLARATION

I declare that this work has not previously been accepted in substance for any degree and is not being concurrently submitted for any other degree. I further declare that this thesis is the result of my own independent work and investigation, except where otherwise stated (a bibliography is appended). Finally, I hereby give consent for my thesis, if accepted, to be available for photocopying and for inter-library loan, and for the title and abstract to be made available to outside organisations.

Hatem Radwan Ibrahim Radwan (Candidate)

Dr. Dino Minoli (Director of Studies)

Prof. Eleri Jones (Supervisor)
## CHAPTER ONE: INTRODUCTION

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1.1 Introduction

My name is Hatem Radwan, assistant lecturer at the Faculty of Tourism and Hotels, Suez Canal University, Egypt. I am currently undertaking a PhD study sponsored by the Egyptian Education and Culture Bureau at Cardiff School of Management, University of Wales Institute, Cardiff, UK. My research is on SWM in small Welsh hotels. It aims to provide recommendations to help the small hotel sector manage their solid waste effectively. This chapter introduces and clarifies my research in sections focusing on the study’s rationale, line of enquiry (aim, objectives and questions), scope, significance, methodology and structure.

1.2 Rationale for the research

There are several environmental, economic and academic reasons for investigating the topic of solid waste in small Welsh hotels.

Solid waste is regarded as one of the most adverse types of pollution. It needs to be managed in a sustainable way to reduce the overall burden on the environment (McDougall and Hruska, 2000). The International Hotel Environment Initiative (IHEI) (2002) reported that waste generation is one of the most visible impacts that hotels have on the environment. On average, every customer can produce 1 kg of waste a day in a typical hotel which accumulates in producing larger quantities of waste monthly, with much going to landfill. Carlsen et al. (2001) indicated that most small hospitality firms did not perceive the importance of changing their SWM practices.
Despite this fact, small hotels have been paid little attention by the hotel industry, policy planners and local governments in relation to promoting their responsibility towards the environment (Shaw and Williams, 2002). In this respect, Radwan et al. (2008) concluded that a fundamental review of SWM in small hotels is needed to offer them more sustainable SWM strategies.

SWM is the discipline that regulates the waste from the point of generation to the final point of disposal. The management of solid waste should be in accordance with the best principles of public health, engineering, economics and conservation of the environment (Wilson and Nair, 1992). However, Nicholls and Courtrey (1993) previously expected that SWM would be one of the most significant issues facing the hospitality industry in the future. Abu Taleb (2005:3) asserted that “the disposal of solid waste has always been a problem for the hospitality industry and for many hotel operators there is no route for recovery”. Indeed, the success of the hospitality industry worldwide depends largely on the presence of a clean natural environment (Manaktola and Jauhari, 2007).

Landfilling of solid waste from small hotels has a number of deleterious effects on the environment. Welford (1994), Kirk (1995) and Petts (2000) reported that the environmental impact of small businesses is cumulative, in which, the negative effects of their activities can build up and become a significant problem. On aggregate, small hotels, undoubtedly, generate extensive amounts of waste, much of which is handled with the easiest,
cheapest and the most accessible way of disposal (landfill) which threatens the sustainability of the environment (Carlsen et al., 2001; IHEI, 2002). The improper management of hotel waste can contribute to the emergence of local and global problems (e.g. global warming, ozone depletion and climate change) (Mensah, 2004; Chavan, 2005). Once the waste material is buried under ground (landfill) it breaks down and gives off landfill gases which often contributes to air pollution and adversely impacts on human health and the environment. The biodegrading process causes also the formation of a leachate which has the potential to pollute underground water (Becklake, 1991).

The cost of solid waste is not always recognised for business operators. The real cost of solid waste is not only the disposal costs but also includes other hidden costs (e.g. materials, energy and staff) which contribute to the production of waste materials. For a small hotel in the UK, waste disposal alone costs about £110 per tonne. There is also another significant cost occurred to the environment, with the disposal of 90,000 tonnes of waste generated by the hospitality industry across the UK yearly to landfill sites. The physical and environmental costs of solid waste escalate every year (Todd and Hawkins, 2007). Indeed, solid waste should be managed in a way that enhances environmental and financial benefits to businesses (Department of the Environment, Food and Rural Areas (DEFRA), 2000). The waste management hierarchy developed by the European Union (EU) revealed that waste “is not only a potential source of pollution – it can also
constitute secondary raw material” (Commission of the European Communities (CEC), 1993:89).

There are also academic reasons for doing this research. To date most of the work dealing with SWM has focused on the local authorities’ waste management plans (see Coopers and Lybrand, 1993; Read et al., 1997; Read et al., 1998b; Morris et al., 2000; Phillips et al., 2002). A range of other studies have targeted small and medium sized enterprises (SMEs) to explore and assess their response to the environmental agenda but little or no attention has been paid to SWM aspect (see Hillary, 1995, 2000; O’ Laoire and Welford, 1996; Petts et al., 1998; Robinson, 1998; Smith and Kemp, 1998; Revell and Blackburn, 2007). Moreover, the emphasis has been so far directed towards household waste and recycling (see Oskamp, et al., 1991; Gandy, 1993; Price, 1996; House of Lords, 2008). Yet, previous research has not provided insights into the precise challenges and/or factors that might influence the behaviour of small hotel operators to implement sustainable SWM practices.

1.3 Research aim, objectives and questions

The aim of this research is to identify the challenges of adopting sustainable SWM practices in small hotels and to provide potential solutions.

To reach this overall aim, the thesis has four specific objectives:

1) Undertake a critical review of relevant literature on SWM and small hotels to explore the different alternatives which small hotels could use to
manage their solid waste, the issues facing them in implementing sustainable SWM practices and to develop a conceptual framework to guide this research.

2) Investigate SWM practices in non-GDES small hotels in a Welsh local authority and explore the support available to them from the local authority and the private waste sector to manage their solid waste in a sustainable way.

3) Explore the attitudes of the owners/managers of GDES small hotels regarding the implementation of more sustainable SWM practices and comparing them to the non-GDES small hotels studied in the second objective.

4) Make recommendations in relation to SWM strategies appropriate to small hotels.

• In particular, this research sets out to answer six research questions:

1) What are the challenges of implementing sustainable SWM practices in small hotels?

2) How could public and private waste carriers support small hotel owners/managers in managing their solid waste effectively?

3) How do small hotels committed to GDES manage their solid waste? Does GDES support hoteliers in relation to SWM?

4) What could influence the behaviour of small hotel owners/managers to manage their solid waste appropriately?

5) What are the potential solutions to improving SWM practices in small hotels?
1.4 **Boundaries of the research**

Figure 1.1 shows the boundaries of the research. The issue of SWM in small hotels is investigated via a consideration of a theory (TPB), an environmental management standard (GDES) and several stakeholders (small hotels, public and private waste sectors), in Wales, UK. The reasons for this are explained below.

**Figure 1.1: Boundaries of the research**

SWM practices are investigated in small hotels as they dominate the hospitality industry in Wales (Morrison, 2002). For the current research, small hotels are defined as those having 30 rooms or less (discussed in details in sections 2.2.1 and 3.4.1.3). This category of small, family-run businesses often ignores the environmental impacts of their activities because of their
fragmented nature. Collectively, small hotels produce a significant amount of waste, which goes to landfill. The Environment Agency (2003b) has reported that the waste produced by SMEs in the UK (which small hotels are considered significant part) is extensive representing 60% of commercial waste.

Moreover, this research has focused specifically on SWM as a significant component of the environmental management approach in hotels, with the exclusion of energy and water management. This is because many small hotel operators have no intentions to undertake sustainable SWM practices believing that SWM activities such as recycling are very difficult, time consuming and often associated with lower financial savings in comparison to other areas of environmental management (e.g. energy and water management) (see Barlett, 1992; Knowles et al., 1999; Chan and Lam, 2001).

This research extends also to consider SWM operations undertaken by both public and private waste sectors in a Welsh local authority. The roles of both sectors alike are very critical to offering more sustainable SWM strategies for small hotels (Radwan et al., 2008) and enable them to implement all the sustainable options listed in the waste management hierarchy (prevention, minimisation, reuse, recycle and compost). Despite SWM is one of the most important concerns of the public sector in Wales, many Welsh local authorities continue to demonstrate poor recycling rates (Read et al., 1998a;
Welsh Assembly Government (WAG), 2002). In addition, many private waste companies are landfilling (Read, 1997).

This research is undertaken in Wales as SWM is considered to be a significant environmental problem in Wales and UK. Therefore, there is a great need for supporting/driving all commercial waste producers such as small hotels to undertake sustainable SWM practices. SWM in Wales has been shaped by adopting landfill as the main waste disposal route (Cohen, 2006a), landfilling about 4 million tonnes of waste every year (WAG, 2002). Overall, the rate of solid waste in the UK was rising at 3% per year which is higher than the Gross Domestic Product (GDP) and faster than most other European countries (Cohen, 2006b). In comparison to other European counterparts (see Figure 1.2) the UK is third only to Greece and Portugal in relation to the proportion of waste that it landfills (75%) (DEFRA, 2007a).
Figure 1.2: Municipal waste management in the European Union

Another factor considered in this research is eco-standards as they can potentially help ensuring the environmental quality of firms and at the same time assist customers to select environmentally-responsible firms. Hotels certified with a green standard (i.e. International Organisation for Standardisation (ISO) 14001, Eco Management and Audit Scheme (EMAS), Green Tourism Business Scheme (GTBS) etc.) adopt certain activities aimed to protect the environment, such as waste separation and recycling (Mihalic, 2004). Khanna and Anton (2002:409) stated that:

*Environmental management system (EMS) represents an organisational change within firms and a self-motivated effort at internalizing environmental externalities by adopting management practices that integrate environment and production decisions, which identify opportunities for pollution reduction and enable the firm to make continuous*
improvements in production methods and environmental performance

This research focuses on GDES as it is an environmental accreditation scheme designed to meet the need of small/medium and large businesses in Wales and implemented by many small hotels. It provides a stepped approach for environmental management. The standard is made up of five levels which certified organisations can progress through, including: commitment to environmental management; understanding environmental responsibilities; managing environmental impacts; environmental management programme; continual environmental improvement. However, businesses have the chance to enter the process and stay at whatever level they see that it is most appropriate for their environmental performance. It is worth noting that the first two levels are more suitable to the size of small businesses. The standard provides structured guidelines to help committed businesses to improve their environmental performance, achieve financial savings, comply with environmental legislation and increase competitiveness (Green Dragon, 2006).

ISO 14001, EMAS, Green Globe 21 and GTBS are outside the scope of this research. Both ISO 14001 and EMAS had been developed basically for larger-scale companies and were not appropriate to meet the needs of SMEs (Gerstenfeld and Robert, 2000; Holt et al., 2000; Kuhndt and Von Geibler, 2002; Pimenova and Van der Vorst, 2003; Chavan, 2005). The formal requirements and auditing systems of ISO 14001 and EMAS are too
complex, costly and time consuming to address by small business operators (Daily and Huang, 2001; Rajendran and Barrett, 2003). Similarly, the Green Globe 21 and the Scottish scheme (GTBS) were also excluded as they were not widely implemented by small hotels in Wales where the study took place. For instance, there were only two small Welsh hotels certified with GTBS while there were no small hotels accredited with Green Globe 21 in Wales (Green Tourism Business Scheme (GTBS), 2009; Green Globe, 2009).

The TPB is undertaken in this research as a theoretical framework as it gives a greater opportunity to understand both hoteliers’ attitudes and the barriers facing them to implement sustainable SWM practices rather than other theoretical models (e.g. Theory of Reasoned Action (TRA) and Ipsative Theory of Behaviour (ITB)). The TPB (Ajzen, 1985) supposed that people had a rationale basis for their behaviours. The model via its main constructs (Attitude, Subjective Norm and PBC) provides an appropriate theoretical framework to help explore and understand the factors which influence behavioural choices (Davis and Morgan, 2008). “A better understanding of small tourism firm intentions and behaviours in relation to sustainability and the beliefs (attitudinal and normative) that underpin these, will lead to a more incisive insight into the way(s) in which such behaviour might be most effectively influenced, for example by policy makers” (Dewhurst and Thomas, 2003:388).
1.5 The importance of the research

The small hotel sector contributes significantly to the degradation of the environment through the disposal of large quantities of waste to landfill collectively. Thus, this research will be of great value to small hotel owners/managers as it will help them to manage their solid waste effectively. Through exploring hoteliers’ attitudinal and control-based beliefs regarding SWM issues this study will identify the tools that can be used by the government to influence hoteliers’ attitudes and compel better SWM practices. It is envisaged that this research will assist small hotel operators in reducing waste disposal costs by preventing and/or minimising waste at the first place of generation. Furthermore, this study will partially contribute to reduce the over-dependency on landfill in Wales and the UK via better SWM in the small hotel sector. It will also help in filling the gap between council practices and strategies and shape the potential role of the public and private waste carriers to support small hotel businesses to manage their solid waste in a sustainable way. This will no doubt assist in improving the overall picture of SWM in both UK and Wales among other European counterparts regarding the amount of waste disposed into landfill.

Moreover, the problem of SWM is international in its scope; with many countries facing the same challenges and being exposed to the same dangerous effects of poorly-managed commercial waste, e.g. ground water pollution and emissions of gases. Therefore, this research will be of great importance to Egypt which is my nation as the problem already exists and
needs some potential solutions. It is recognised that Egypt and UK implement different waste strategies but the situation looks relatively similar from the perspective of small hotels, undertaking landfill as a primary SWM option. Abu Taleb (2005:2-3) asserted:

There are several constraints on proper waste management in Egypt ranging from problems with the collection process to the recycling and disposal of solid waste. Existing official dump sites are inadequate, being few in number and requiring rigorous management. Increased pressure for proper SWM is expected to arise in the future as the quantity of the waste that is generated rises. As a result, the recycling of waste is among the most challenging problems faced in waste management in Egypt.

Therefore, this research will potentially help in protecting the natural environment, which constitutes the most significant resource available for the tourism industry, from the negative impacts arising from burying waste in holes in the ground (landfill). It will add to the literature on SWM by providing recommendations to SWM best practices for small hotels and will enrich the researcher’s knowledge about the research topic.

1.6 The research approach

This research adopts a qualitative approach using the case study research strategy to accomplish the overall aim, objectives and questions of the study as it is characterised by its ability to get detailed information about the phenomenon being investigated, namely SWM in small Welsh hotels. A multiple case study of small Welsh hotels is designed which enhances the validity of this research and offers the opportunity to study SWM issues in two different incidents (GDES and non-GDES small hotels). The case study
allows the researcher to investigate the problem from different perspectives focusing on relationships and processes and using multiple sources of evidence, including: semi-structured interviews, direct observation and document analysis. Thus, any findings would be very accurate and persuasive (Yin, 2003). Data is analysed through the constant comparative method.

1.7 The structure of the thesis

The dissertation is broken down into eight chapters. Chapter one addresses the research problem of SWM in small hotels and provides the rationale for undertaking this research. It identifies the research aim, objectives and questions which this study seeks to achieve. It outlines the boundaries of the research, its significance, the research approach and then briefly explains the dissertation’s structure.

Chapter two provides the related literature on small hotels and SWM. It addresses SWM issues specifically in hotel operations and critically analyses all the SWM alternatives set in the waste management hierarchy, starting with prevention and/or minimisation throughout recovery by means of reusing, recycling and composting and finally disposal to either incineration plants or landfill sites. The chapter considers also the different theories which can be used to enhance the understanding of human behaviour. The literature review concludes with the development of a theoretical model of best practice for SWM in small hotels.
Chapter three identifies and rationalizes the research approach adopted in the current study. It presents the thesis’s epistemology, theoretical perspective, methodology and methods. The chapter provides justification for the research strategy, sampling procedures and the methods used to meet the research objectives. It also looks at the data analysis process and considers issues of research validity, reliability and triangulation. It finally discusses the potential for generalisation.

Chapter four explores SWM issues in a case study of non-GDES small hotels in a Welsh local authority. This chapter presents and discusses hoteliers’ attitudes and the barriers facing them in implementing the ranges of sustainable options listed in the waste management hierarchy, together with the potential use of PTB schemes. It highlights the potential support and the drivers needed for better SWM in small hotels and concludes with an initial model for SWM in non-GDES small hotels.

Chapter five similarly investigates SWM issues but this time in a case study of small hotels committed to GDES in Wales. This chapter highlights the environmental responsibility of GDES small hotels and identifies the motivations which led GDES hoteliers to implement sustainable SWM practices. It introduces a modified model for SWM in GDES small hotels capturing hoteliers’ attitudinal and normative beliefs towards the investigated SWM issues, along with their control based beliefs which influenced their behavioural intentions in relation to SWM.
As the role of the waste carrier is critical to support small hotels to manage their solid waste effectively, chapter six provides SWM operations undertaken by the public and private waste sectors in a Welsh local authority. This chapter highlights the capability of both public and private sector’s waste carriers to work with small hotels towards the implementation of more sustainable SWM practices. It concludes with an input/output process model for the government to drive the consideration of more sustainable SWM practices.

Chapter seven evaluates and discusses SWM practices across all cases studied (non-GDES small hotels, GDES small hotels, public and private waste sectors). It reinvestigates SWM practices in non-GDES small hotels 18 months after the initial interviews with them following the introduction of improved SWM system by the local authority for the support of commercial businesses. It develops a cross-case analysis towards the development of a best practice model for the public sector to encourage better SWM practices in small hotels. It also evaluates TPB as a theoretical model used to understand and explain the behaviour of small hotels in relation to SWM.

Chapter eight concludes this study on SWM in small Welsh hotels. It presents a review of the research objectives and outlines the research major findings. It also highlights the thesis’ contributions, limitations and opportunities for future research.
CHAPTER TWO

SMALL HOTELS AND SOLID WASTE MANAGEMENT

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2.1 Introduction

A variety of international initiatives addressed the problem of SWM and emphasized business’s responsibility to conserve resources such as the Brundtland Report via its definition of sustainable development in 1987 (Webster, 2000). Also, the Earth Summit in Rio de Janerio in 1992 set a number of objectives for SWM as a part of Agenda 21 (Read, 1999, Wright, 2006). However, Kirk (1998:34) reported that “global agreements, by themselves, will not induce change. Significant change will only result from local action taking by local government, local business and local pressure groups”. As a significant part of local community businesses, this chapter presents relevant literature on small hotels and SWM.

It presents different ways of defining small hotel and gives a brief overview of the hospitality industry in the UK which is dominated with small/family run businesses. The chapter highlights the extent of the environmental responsibility of small hotels and discusses the role of voluntary environmental management standards, focusing on GDES – a Welsh environmental accreditation scheme designed – to assist hotel operations to implement more environmentally-friendly practices. The chapter further gives a brief discussion of strategic approaches which business operators can use to respond to environmental issues. It explores the attitudes of small hotels towards the adoption of environmental practices and discusses the TRA, TPB and ITB in understanding environmental behaviours. It further looks at the barriers and the forces to implement environmental practices in small hotels.
It highlights the problem of SWM in Wales and discusses SWM practices in hospitality operations. The chapter differentiates between waste minimisation and waste prevention approaches and explores the role of green purchasing in minimising and/or preventing hotel waste at source. It explains the recovery of waste materials throughout reuse, recycling and composting. The chapter then looks at the producer responsibility approach and discusses PTB schemes in the UK in comparison to a number of other European counterparts, including: German (packaging) and Swiss (WEEE) take-back systems. It further covers the disposal of waste either through incineration or landfill and highlights the effectiveness of the landfill tax in reducing the amount of commercial waste disposed into landfill. It outlines the features of the local authority and private waste sectors to support commercial businesses to implement sustainable SWM practices. It concludes by developing a theoretical model of SWM in small hotels.

2.2 The hospitality industry and the environment

2.2.1 What is a small hotel?

The literature has showed a great debate in defining ‘small’ in relation to small businesses in the hospitality industry. A range of quantitative and qualitative measures can be used to define small hotels – these criteria related to employment, market share, size, finance, features of small business, ownership and management (Morrison, 2002). Morrison (1998:19) provided a descriptive approach and proposed that a small hospitality business is:
financed by one individual or small group, directly managed by its owner(s) in a personalised manner and not through the medium of a formalised management structure. It may or may not be affiliated to an external agency on a continual basis for at least one management function. In comparison to the largest unit of operation within the industry, it is perceived as small, in terms of physical facilities, product/service capacity, and number of employees.

The most frequently-used measure for classifying small hotels as being either small/medium or large is the number of rooms (Buick, 2003). Nevertheless, previous studies revealed great differentiation in defining small hotels using the number of rooms as the measurement. As Baker et al. (2000) classified hotels in respect to size and argued that small hotels had fewer than 100 rooms. Main et al. (1997) indicated that small hotels were those operations having less than 50 rooms and this category constituted about 90 percent of hotels worldwide. Glancey and Pettigrew (1997) identified small hotels as those having 40 rooms or less in their study of the entrepreneurial activity in the small hotel sector in Scotland. Kirk (1998) in his study of the attitudes of hotel managers towards environmental management in Edinburgh identified small hotels as those operations having less than 20 rooms.

Similarly, number of employees can be used as a significant measure to determine the size of the business. According to the European Commission (1996), small firms were defined as those operations that were independently owned/managed and employing less than 50 employees. In the UK, the Hospitality Training Foundation (2000) estimated that small businesses (those having less than 10 employees) made up 91% of hospitality
establishments in 1997 and employed about 33% of the total workforce. This study has undertaken the number of rooms as the main criterion to identify small hotels which defined as those having 30 rooms or less (explained and justified in detail in section 3.4.1.3).

2.2.2 Hospitality in the UK

The accommodation sector is considered one of the most important sub-sectors of the tourism industry worldwide. It is composed of a wide variety of establishments, e.g. hotels, bed and breakfast (B&Bs), guest houses and self-catering accommodation. This segment will no longer be able to ignore its environmental responsibility as it has to respond to a variety of pressures, the most powerful of which are legislative pressures (Brown, 1996). In the UK the hotel sector is dominated with small/family-run businesses with many of these businesses having no intention of reducing their impacts on the environment; they actually do not recognise the importance of taking up better environmental practices (Webster, 2000).

Middleton (1998) attributed such dominance and/or the easy access of small businesses to the hospitality industry to a number of factors, including: there is no professional experience or large investment required for joining the hospitality industry in comparison to other industries; small businesses can be certified or licensed easily; small tourism firms are normally family-owned and managed by family members where very little or no full-time job opportunities are provided (one or two jobs at most). Yet the improvements
which have been made to local and regional tourism policies have not paid any attention to the small hospitality sector (Baum, 1999). Moreover, a number of small hospitality firms do not classify themselves as being permanent hotel accommodation as they prefer to trade seasonally which creates difficulty in the coordination and control of tourism destinations (Scott et al., 2000).

The hotel sector in the UK has a significant impact on the environment (Brown, 1994). Moreover, it moves with too slow a pace towards up taking environmental initiatives as a result of the fragmented nature of the industry (Kirk, 1998). Indeed, the hospitality industry is dominated by small/family-run businesses which have no intention of allocating any resources, (i.e. time, money, staff) to the achievement of their environmental responsibilities because they are perceived as an unnecessary activity (Goodall, 1995). Revell and Blackburn (2007) has showed that a minority of small business operators acknowledge that their businesses have a significant impact on the environment as a result of waste disposal, water and energy consumption.

Lord (1990) indicated that there are different ways in which small firms can impact on the environment, i.e. through their purchasing of raw materials, production process and waste disposal. However:

*The small firms sector is ... ignorant of their environmental impacts ... oblivious of the importance of sustainability ... Cynical of the benefits of self-regulation and difficult to reach, mobilise or engage in any improvements to do with the environment.*

(Hillary, 2000:18)
Middleton (1998) suggested that small hospitality businesses must change their current strategies which are based on profit-maximisation. They have to show more commitment to environmental issues, support the natural environment and understand the real costs of not adopting sustainable practices. It is interesting to note that tourist boards in the UK, particularly the English Tourist Board (ETB) (currently known as Visit Britain) and Wales Tourist Board (WTB) (currently known as Visit Wales) have established environmental manuals and shown commitment to supporting tourism businesses to modify their performance and uptake environmental practices i.e. water, energy and waste management (ETB, 1991 cited in Hobson and Essex, 2001). For example:

*WTB and the Countryside Council for Wales have launched a greening your business’s guide aimed at encouraging tourism operators to adopt more environmentally-friendly business practices. Businesses receiving financial assistance from WTB receive a copy of the guide and an environmental appraisal visit by the Wales Environment Centre but there is no agreed mechanism to enforce compliance with environmental good practices*  
(WTB, 2000:76)

The tourism strategy for Wales 2000 sets two main actions for WTB to encourage businesses introduce more environmentally-friendly practices: firstly, increasing the awareness of the benefits associated with the implementation of responsible practices; secondly, restricting grants to businesses which comply with the environmental sustainability criteria. For the longer-term, WTB asserted that a statutory registration scheme must be introduced for the hospitality industry in Wales and also current hotel
standards should involve criteria to measure the environmental performance of a firm (WTB, 2000).

2.2.3 The extent of the environmental responsibility in the hospitality sector

The concept of environmental responsibility can be defined as:

*The practice of responding to environmental issues in a socially responsible manner*

(Murphy *et al.*, 1995:5)

The environmental responsibility of a firm can be seen as a significant aspect of its corporate social responsibility. In case of the hotel situation, the approach of social responsibility can be regarded as:

*The hotel’s consideration of, and response to, issues beyond the narrow economic, technical, and legal requirements of the hotel … (to) accomplish social benefits, along with the traditional economic gains that the hotel seeks.*

(Davis, 1973:312)

The environmental responsibility of a firm can take the form of different activities, including: reducing, reusing and recycling waste materials; reducing the emissions of pollutants; managing water and energy in a way that will have little and/or no impact on the environment (Schaper, 2002).

In general there was very little interest among hoteliers to reduce and recycle waste in the hospitality sector because they believed that these activities were costly and time consuming (Chan and Lam, 2001). According to a study by Knowles *et al.* (1999) to improve environmental performance in London’s hotels, the most common and frequently taken actions were related to
reducing the usage of energy followed by practices to reducing the consumption of water. Hoteliers had actually maintained strategies to conserve energy believing that it was associated with greater financial savings. Similarly, Barlett (1992) found that about 30% of Hong Kong’s hotels implemented environmental programmes, with most of these initiatives targeting energy management.

However, Horobin and Long (1996) in their survey to assess the level of awareness with sustainability issues and to explore any action taken to protect the environment among small tourism firms found that the majority of businesses were recycling various waste streams, reusing waste materials (e.g. bin liners, use refillable containers for soap and shampoo) and buying environmentally-friendly products (to a lesser extent). Trung and Kumar (2005) observed that the implementation of sustainable resource conservation (energy and water) and SWM practices in Vietnam hotels were mostly confined to housekeeping and low-cost measures, with payback periods of less than one year for small hotels and less than three years for larger hotels.

2.2.4 Environmental management standards

An environmental management standard can be used to assist organisations in fulfilling two broad outcomes:

First, it is a systematic method of identifying and managing the interaction between the ecological environment and the company. Second, it is a way to “prove”, via an independent agent, to stakeholder that the company is committed to
improving the quality of its interaction with that ecological environment.

(Holt, 1998: 206)

Environmental management standards have been developed to help businesses implement more eco-friendly practices by providing a structured way of working towards sustainability (Rivera and Deleon, 2004). Carter et al. (2004) reported that many firms participate in voluntary environmental programmes to promote beyond-compliance environmental behaviour. A variety of national and international environmental accreditation standards have been developed to promote businesses’ environmental responsible behaviour but until now there is no common standard for the hospitality industry (Mensah, 2004). Some examples of these initiatives, include: ISO 14001; EMAS; Green Globe 21; GDES; GTBS.

However, Rutherfoord et al. (2000) argued that the ultimate reliance on voluntary environmental initiatives and economic incentives in the UK will not be effective in making small businesses reach a standard level of environmental sustainability. A range of literature (Hoffman, 1999; Tilley, 1999; Cashore and Vertinsky, 2000; King and Lenox, 2000; Delmas, 2002; Rivera, 2002) has indicated that voluntary environmental programmes, that include performance-based standards and third-party certification, may be successful in enhancing small businesses’ beyond-compliance environmental behaviour particularly when they are supplemented with a strong regulatory framework and economic incentives.
Carter *et al.* (2004) ask what motivates a small tourism business to voluntarily participate in an EMS. Tszchentke *et al.* (2004) indicated that the decision to join an environmental accreditation scheme, like GTBS, was built mainly upon three main factors: the probability of attaining some commercial and marketing benefits, the belief that the standard was straightforward requiring little or no changes to current practices and also if the owner/manager supported the principles of the standard.

It is argued that the implementation of EMS is a challenge for SMEs (Ryan, 2003). Small businesses often lack the resources and expertise to set environmental policies and operate effective management and auditing systems (Hillary, 1998). Consumer recognition of the standard also has a significant impact on small businesses’ adoption of the scheme (Synergy and WWF-UK, 2000; Buckely, 2002). For most businesses, accreditation to an eco-standard is process-driven rather than performance-oriented as many businesses which have achieved the award still behave in a harmful way to the environment (Synergy and WWF-UK, 2000). Watson and Emery (2004) have shown that many assessors tend to approve the standard without undertaking an effective on-site investigation.

### 2.2.5 Green Dragon Environmental Standard (GDES)

GDES is an environmental accreditation standard developed specifically to target businesses in Wales, particularly SMEs. The scheme involves five levels for eco-certification (see Figure 2.1). Level One requires businesses to
commit to the environmental management approach. Level Two focuses on understanding the relevant environmental legislations and taking an action to comply with such legal obligations. Level Three is about understanding the business impacts on the environment and trying to develop some ways to reduce their impacts. Level Four requires the development of environmental management system and Level Five addresses the issues of continual environmental improvements (Green Dragon, 2006).

**Figure 2.1: The five levels of the GDES**

![Diagram of the five levels of the GDES](source)

It is important to note that Levels One and Two GDES are more appropriate to meeting the needs of small tourism businesses which require them to develop an environmental policy, identify their activities with negative impacts on the environment and try to find some solutions. Also both of these entry levels require hotel operators to be aware of, and comply with, the legislative requirements. Participating companies can gain competitive and economic advantages and ensure continual environmental performance improvement (Green Dragon, 2006). GDES intended to provide organisations with:

- the elements of an effective environmental management system that is appropriate to the nature and scale of their activities and operations; and/or
- an implementation tool for achieving ISO 14001:2004 and/or the EMAS and/or BS8555:2003.

(Arena Network and Groundwork Wales, 2000:1)

GDES integrates the main principles of environmental management, including: continual environmental improvement; compliance with environmental legislation; pollution prevention; communication of environmental issues. Moreover, the elements of planning, taking action, checking progress and reviewing achievements are properly incorporated within each level of GDES to ensure continual environmental performance improvement (see Figure 2.2) (Arena Network and Groundwork Wales, 2000).
2.3 Small hotels and environmental practices

2.3.1 Strategic approaches to environmental performance

A business’s response to environmental issues may be expressed as a reactive and/or a proactive process. Reactive environmental strategies imply that the organisation responds to the environmental issue when it is actually pressurized to do so. For example, if there is a legislative or market pressure an organisation will have no choice rather than to change their current practices otherwise it will face a legal penalty and/or lose market share (Roome, 1992). Small businesses inclined to adopt a reactive approach to environmental issues and preferred to undertake ad-hoc solutions in
responding to environmental issues. Most small firms are unlikely to make significant changes in production processes and/or management operations. Therefore, the implementation of reactive green strategies may not represent a sustainable business policy for environmental management in the long-run (Hutchinson and Chaston, 1995; Andrew and Palmer, 1997; Rowe and Enticott, 1998; Hillary, 2000).

Proactive strategies indicate that the organization responds to environmental issues through the development of EMS and continual support to organizational change (Roome, 1992). Companies undertaking a proactive stance start to identify their impacts on the environment (i.e. solid waste disposal) and also take actions to reduce and/or prevent their impacts in advance of regulations (Rondinalli and Berry, 1997). With proactive strategies, the environmental variable is seen as a competitive issue with business operators always looking for innovative solutions, e.g. the introduction of new technology to improve environmental performance (Azzone and Noci, 1998).

Palmer (2000) classified the environmental activity of an organisation into four different levels (inactive, active, managed and standard) (see Figure 2.3). It is not necessary for any business to move through these stages in that sequence shown in the figure below, but it will be a problem if a business remains at the inactive stage. Palmer also believed that many small
businesses that address environmental performance do not progress beyond the *active* stage.

**Figure 2.3: Stages of the environmental activity**

(Source: Palmer, 2000:326)

### 2.3.2 Environmental attitudes of small businesses

Attitude is defined as:

> *a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour.*

(Eagly and Chaiken, 1993:1)

The decision to adopt environmental measures in small hospitality operations is highly influenced by the owner’s environmental consciousness. There were also some other significant influences, including: personal, socio-culture and situational factors (Tzschentke *et al.*, 2008). Previous studies have showed
different attitudes between small tourism businesses towards environmental practices. On one hand, some tourism firms believed in sustainability issues and were very willing to get involved if they were supported with workable solutions and advice (Horobin and Long, 1996; Berry and Ladkin, 1997). These hoteliers stressed the role of the government in developing environmental practices within businesses. They suggested that the government should enact enforceable regulations with which all businesses must comply (Rutherfoord et al., 2000). On the other hand, some hotel operators perceived environmental issues as an additional burden on the business (Rutherfoord et al., 2000).

A survey by Kirk (1998) to explore the attitudes of hotel managers in Edinburgh towards a number of potential benefits of implementing environmental management found that ‘improved public relations’ and ‘better relationship with the local community’ were the most significant benefits. Nevertheless, hotels which committed to environmental management and had environmental policy perceived the greatest benefits as those related to financial and marketing benefits. Interestingly, the survey found no relationship between the characteristics of the hotel (size, ownership and classification) and the presence of environmental policy.

A range of previous studies have shown that people are more likely to participate in environmental behaviour when they believe that their actions are important to help in solving environmental problems (Huebner and
Lipsey, 1981; Axelrod and Lenman, 1993; Grob, 1995). Thus, the link between an individual’s actions, environmental degradation and his/her belief that s/he can contribute in making the change are significantly associated with the adoption of enhanced environmental behaviour (Bandura, 1986; Tanner, 1999).

2.3.2.1 Theory of Reasoned Action (TRA)

TRA is precedent in the attitude research. It is a successful unifying theoretical framework used to enhance the understanding of people’s behaviour in different domains, e.g. exercise (Smith and Biddle, 1999). TRA proposed by Fishbein and Ajzen (1975) is concerned with “the causal antecedents of volitional behaviour” (Ajzen, 1988:117). Ajzen and Fishbein (1980:62) proposed that “a person’s behaviour is determined by his intention to perform the behaviour and that this intention is, in turn, a function of his attitude towards the behaviour and his subjective norm” (see Figure 2.4). Originally, the intentions are defined by Fishbein and Ajzen (1975:288) as “people’s expectancies about their own behaviour in a given setting”.

The attitude component of the TRA model is formed as a function of the beliefs held about specific behaviour and also the evaluation (value) of the likely outcomes, thus it seems to be an expectancy-value interaction approach (Smith and Biddle, 1999). An attitude then is the individual’s belief about whether the outcome of performing the action is positive or negative. According to Fishbein and Ajzen (1975) a person will hold a positive attitude
if s/he expects favourable outcomes associated with performing a specific behaviour but if s/he believes unfavourable outcomes will result from the behaviour s/he will hold a negative attitude towards it (Mykytyn and Harrison, 1993).

**Figure 2.4: Factors determining a person’s behaviour**

(Source: Ajzen and Fishbein, 1980:8)

The subjective norm component consists of two main factors, the person’s normative beliefs that significant others around him (e.g. friends, family and co-workers) think that s/he should or should not perform the behaviour and the extent to which others’ beliefs would influence and/or motivate the person to comply (Eagly and Chaiken, 1993). Accordingly,

* A person who believes that most referents with whom he is motivated to comply think he should perform the behaviour will
perceive social pressure to do so. Conversely, a person who believes that most referents with whom he is motivated to comply think he should not perform the behaviour will have a subjective norm that puts pressure on him to avoid performing the behaviour.

(Ajzen and Fishbein, 1980:7)

However, TRA is concerned with the anticipation of a behaviour rather than the outcomes of it. For instance, it deals with the possibility of a person studying for an examination rather than passing it (Davies et al., 2002). The main problem in relying on TRA to predict the environmental behaviour is that they only consider behaviour as a function of personal factors. Tanner (1999:146) indicated that the major limitation of these paradigms is:

Little attention has been paid to the factors that are necessary or an individual's ability to participate in a specific action. Thus explanations of the gap between environmental concern and behaviour have been reduced to a dispositional problem, while ignoring other significant factors of which behaviour is also function.

2.3.2.2 Theory of Planned Behaviour (TPB)

As explained earlier, TRA was developed to predict behaviours that were under volitional control (Ajzen, 1988). Accordingly, TRA may not predict behaviours where other factors may be influential. Indeed, there may be a range of behavioural barriers that hinder the performance of the behaviour and make it not entirely volitional as explained by Smith and Biddle (1999) when testing the theory in exercise. Thus, Ajzen in 1985 developed TPB to address behaviours that were not under the person’s volitional control. This theory is the same as TRA but with the addition of PBC. From the perspective of TPB, the occurrence of the behaviour is determined by the
individual's behavioural intentions and that, the intention is in turn determined as a result of three main constructs: attitudes towards the behaviour, perceived normative pressure and PBC (see Figure 2.5) (Cheung et al., 1999). The PBC is defined as:

*The perceived ease or difficulty of performing the behaviour and is assumed to reflect past experience as well as anticipated impediments and obstacles.*

(Ajzen, 1988:132)

**Figure 2.5: The theory of planned behaviour**

![Diagram of the theory of planned behaviour](image)

(Adopted from: Smith and Biddle, 1999)

Ajzen and Fishbein (1980) indicated that a person’s beliefs about the behaviour are formed from different sources: personal experiences, observation, information and normative expectations. In addition to the
effects of the behavioural and normative beliefs which were discussed with TRA, the PBC mediates the effects of the individual’s beliefs about the presence of facilitating or inhibiting factors to perform the behaviour (control beliefs) (Cheung et al., 1999). Interestingly, Ajzen (1991) demonstrated that having control over the behaviour is important but it is not an assurance or even sufficient for the actual performance of the behaviour. Therefore, Cheung et al. (1999:590) “it is plausible to posit that a lower level of PBC will lead to a weaker effect of intention on behaviour, whereas a higher level of PBC will lead to a stronger effect”.

Davies et al. (2002) classified the factors that may interfere with the control over the behaviour as internal and external to the individual. The internal factors, for example, may include: skills, abilities and knowledge whereas the external factors may be related to time, opportunity and cooperation of others. With regard to recycling behaviour, De Young (1990) identified several perceived behavioural barriers that prevent the performance of recycling behaviour (e.g. lack of information and support). The PBC is, therefore, an important component of TPB to identify the obstacles in performing the behaviour and to reflect people’s beliefs as to how easy performance of an action is likely to be (Ajzen and Madden, 1986; Ajzen, 1988).

In addition to the main constructs of TPB which were shown in Figure 2.5, Ajzen (1991) mentioned some additional factors which are external to the
model and may also influence the behaviour (e.g. personality, past experience and demographic characteristics). However, Ajzen reported that the influence of these factors over a person’s behavioural intentions is indirect and also these variables are mediated through the original components of the theory.

Previous research (e.g. Eagly and Chaiken, 1993; Olson and Zanna, 1993) referred that during the last two decades the TPB is one of the most widely used and influential models of the attitude–behaviour relationship. The TPB has widely used to understand different behaviours with considerable support, such as: leisure choice (Ajzen and Driver, 1992); waste recycling behaviour (Boldero, 1995; Taylor and Todd, 1995; Cheung et al., 1999; Terry et al., 1999; Davies et al., 2002; Davis and Morgan, 2008); blood donation (Giles and Cairns, 1995); physical exercise (Ajzen and Driver, 1991; Smith and Biddle, 1999); health care (Anderson et al., 1995); driving behaviour (Elliott et al., 2007). However, Manstead and Parker (1995) criticised the TPB arguing that applying the theory is not easy task because of the difficulty in measuring the PBC.

2.3.2.3 Ipsative Theory of Behaviour (ITB)

ITB (Frey, 1988) is a concept focusing mainly on the constraints and resources of ecological behaviour. This approach extends further than personal variables examining factors which affect the performance of human action (Tanner, 1999). ITB (Frey, 1988) – embraces that a person’s
behaviour may be inhibited or constrained by a lack of real opportunities to
perform the behaviour, such constraints imposed by the individual’s internal
as well as external conditions. In contrast to traditional psychological
research:

This perspective does not focus on the reasons for action but
instead points out the why of non-action. In fact, non-action
might be a matter of lack of motivation. None the less, it is likely
that people might not engage in certain behaviour due to lack of
opportunity, even though they may maintain a positive attitude
and intention to act. This is how constraints may keep pro-
environmental attitudes from being expressed in behaviour.
Therefore, asking why people do not engage in a particular
behaviour forces one to take account of conditions necessary
for performing an action and helps preclude the tendency to
interpret behaviour only as the result of dispositional variables.
(Tanner, 1999:146)

ITB generally assumes three types of constraints for human behaviour,
including:

(1) Objective constraints – the action must be objectively possible. Frey and
Foppa (1986) identified a range of variables that objectively and/or directly
influence and preclude a person’s participation in an activity, including:
resource limitations (e.g. lack of time, limited income, lack of space, physical
and mental attributes). This category of constraints extends also to include
factors related to technology, available information networks, social
interaction and shared set of social values and norms (Frey and Foppa,
1986).

The consideration of the constraints by the individual
constitutes the decisive stage in the behaviourual decision
process: as a rule it narrows down strongly the opportunities
available to an individual, so that as a rule he or she has little to
choose from. In most situations, the second decision stage – the choice within the opportunity set – is of minor importance.

(Frey and Foppa, 1986:140)

(2) Subjective constraints – individuals normally behave according to what is possible or permissible. Initially, they must evaluate and make a choice of the behavioural alternatives available to them. The evaluation process ends up with the adoption of particular behavioural options and exclusion of others. Hence, subjective constraints are those which directly influence and/or prevent a person’s willingness to participate in a specific action (Tanner, 1999).

(3) Ipsative constraints – the behavioural option must be salient for the individual in the situation. In other words, the behaviour must be resumed and activated from the person’s memory in a current situation. Thus, an individual’s behaviour may be restricted by the fact that he never deals with the action in the situation. The ipsative set, normally, includes factors that inhibit the activation of a particular behavioural alternative (Frey, 1988).

2.3.3 Motivators to implement environmental practices

Previous research (e.g. Kirk, 1996; Foster et al., 2000; Bramwell and Alletorp 2001; Sanchez et al., 2006) has identified a number of drivers that could motivate hospitality operations to become more environmentally-friendly, including: legislative pressure; financial savings; customer demand; marketing advantages; growing concerns about corporate social responsibility. Tzschentke et al. (2004) explored the motivations of
owners/managers in the context of small serviced accommodation establishments in Scotland for undertaking environmental practices and found that businesses’ involvement in environmental activities are based on economic as well as ethical considerations.

In the UK, it was found that hotels might carry out environmental activities mainly to save costs rather than to protect the environment (Brown, 1994). Affirmatively, Kirk (1998) found that hotels in Edinburgh were more likely to adopt pro-environmental behaviour if it was associated with direct financial gains. This finding is consistent with the results of the NetRegs’ survey (2005) which confirmed that economic benefits are considered the most effective motivators to encourage businesses to implement sustainable practices. Indeed, conservation of the environment was not perceived as a significant aspect to change hotel practices unlike other strategic issues, i.e. health and safety, quality, cost or customer care (Forsyth, 1995). However, to date, the effect of undertaking environmental performance on the business’s economic position is not clear as most empirical research has shown conflicting evidence (Klassen and McLaughlin, 1996; Russo and Fouts, 1997; Konar and Cohen, 2001; Rivera, 2001; King and Lenox, 2002).

Similarly, legislation is considered one of the best ways to drive small businesses towards environmental issues (Rutherford and Spence, 1998). Hunt (2000) indicated that owners/managers of small firms often see regulations as indicators to what they have to do regarding their
environmental responsibilities. Consequently, if there is no regulations set in place owners/managers of small firms will presume that there is no environmental problem. Overall, Revell and Blackburn (2007) stressed on the role of the inspection as well as the awareness to make businesses understand and comply with relevant environmental legislation. A survey by Petts et al. (1999) revealed a lack of awareness of environmental regulations among SME owners/managers. There is a widespread perception that compliance with regulations is too costly. This may indicate why small businesses achieve low levels of compliance to regulations. A survey of the Environment Agency (2003a cited in Revell and Blackburn, 2007) revealed that only 24% of small businesses (out of 8064) were aware of Duty of Care Regulations.

An increasing pressure had emerged also from customers to sustain environmentally-friendly hotels. Mensah (2004) referred that 90% of hotel guests preferred to stay in hotels that had adopted eco-practices. Empirical research (Bumgarner, 1994; Gustin and Weaver, 1996; Hornemann et al., 1997) has shown that there is willingness among tourists to pay more for green products. Therefore, hotels have become under market pressure to develop environmental policies and implement environmental management activities to satisfy the needs of their customers otherwise they will face the risk of losing market share (Farquharson, 1992).
Networking small businesses is considered an effective mean to improve their environmental performance. Networking can be useful in two aspects (Human and Provan, 1997). First, networks are well-known as a major source of creating new products and supporting service developments, for example, small firm networks in Germany and Denmark have become leaders in green technology developments. Second, the structure of networks is built primarily upon allowing free-flow information and communication among participants. Therefore, a networking approach is considered ideal for capturing and disseminating information relevant to sustainability issues. Biondi et al. (1998) added that the collaboration between small businesses is an effective way to implement EMS. Such networks can help businesses to learn from successful cases and build relationships with local authorities and other stakeholders in the local community. A survey of business support networks in Northern Ireland revealed that such organisations would be more effective if they considered providing a tailored made service to small companies (Hooper et al., 1998).

There should be active support and cooperation between business operators, government and other associated stakeholders to successfully initiate environmental practices in the hotel industry (Post and Altman, 1994; Bohdanowicz and Martinac, 2003). From another perspective, the industry needs successful case studies to persuade businesses that carrying out environmental practices makes good business sense (Bohdanowicz and Martinac, 2003). In practice, eco-friendly hotels can encourage a large
number of competitors to adopt their greening practices (Dieleman and de Hoo, 1993). Moreover, the NetRegs website provides clear and valuable information about environmental practices in small businesses. It represents a good starting point for businesses that intend to improve their environmental performance and do not have enough resources (NetRegs, 2005).

2.3.4 Barriers of environmental performance improvement

There are number of constraints hindering small tourism firms to respond to the environmental challenge. These barriers are directly linked to the organisational, economic and technological issues (Shearlock et al., 2000). Bohdanowicz and Martinac (2003) indicated that the cost is the most significant obstacle prohibiting small hotels from becoming more environmentally-friendly. This can be explicit in the cost needed to buy new technology or even to adjust business’s strategies. Bramwell et al. (1996) added that small tourism firms were more susceptible to issues related to occupancy and seasonal fluctuations that would affect their economic conditions and hinder the adoption of sustainable practices. Similarly, Carter et al. (2004:50) stated that:

*Small-businesses are highly exposed to economic downturn and, despite the ideals of ecotourism; do not have the financial resources, knowledge, capacity or necessary influence to respond to resources protection ideals.*

Moreover, the limitation of the business culture and the employment of unskilled staff are considered significant barriers in the process of the
environmental action (Klassen, 2000). Holt et al. (2000) highlighted ‘lack of awareness’ as a significant barrier arguing that most small businesses were unwilling to adopt sustainable practices because they were unaware of environmental issues. Recently, Bohdanowicz and Martinac (2003) supported Roome (1992) indicated that many hoteliers were unwilling to get involved in environmental performance because they believed that such actions were complex and might negatively affect customer comfort and stay in the hotel.

There is often a contradiction between business objectives and environmental management objectives (Walley and Whitehead, 1994). In general, operators may sustain other strategic issues, such as profitability rather than environmental matters (Middleton, 1998). Actually, most small businesses do not recognise sustainability as a good opportunity for development. So, their attitudes represent an important obstacle to consider environmental practices (Ashford, 1993; Dieleman and de Hoo, 1993). Kim (2005) summarised the obstacles facing small businesses in implementing environmental performance and categorized them into different groups (see Table 2.1).
Table 2.1: Barriers to implementing environmental performance

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Main features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial resource</td>
<td>- Lack of funds to invest in environmentally-friendly practices</td>
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<tr>
<td></td>
<td>- Long-term payable periods</td>
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<tr>
<td>Knowledge and information</td>
<td>- Difficulties to access information (ill-informed)</td>
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<tr>
<td></td>
<td>- Lack of awareness of the current environmental problems threatened the planet</td>
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<td></td>
<td>- Lack of awareness on how to incorporate eco-practices</td>
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<tr>
<td>Time</td>
<td>- Lack of time to carry out environmental responsibility</td>
</tr>
<tr>
<td>Perception</td>
<td>- Underestimation of the benefits gained from environmental performance improvement</td>
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<tr>
<td></td>
<td>- A general belief that environmental issues are costly, laborious, and negatively impact the commercial aspects of the business</td>
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<tr>
<td></td>
<td>- Over estimation of future challenges</td>
</tr>
<tr>
<td>System and culture</td>
<td>- Lack of management information system</td>
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<tr>
<td></td>
<td>- The implementation of a business culture that does not support environmental performance improvement</td>
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<tr>
<td></td>
<td>- Employing inexperienced staff</td>
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<tr>
<td>Support</td>
<td>- Lack of sector-specific/governmental support and guidance</td>
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<td></td>
<td>- Institutional weaknesses</td>
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<td></td>
<td>- Ineffective information channels to SMEs</td>
</tr>
<tr>
<td>Environmental management system</td>
<td>- Unsuitable EMS tools for SMEs</td>
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<td></td>
<td>- Environmental management schemes are too complex for SMEs to handle</td>
</tr>
<tr>
<td></td>
<td>- Lack of management commitment</td>
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</tbody>
</table>

(Adopted from: Kim, 2005)

2.4 Solid Waste Management (SWM)

2.4.1 What is waste?

Environmental Protection Act (EPA) 1990 defined waste as:

*any substance which constitutes scrap material or an effluent or other unwanted surplus substance arising from the application of a process, or any substance or article which requires to be disposed of as being broken, worn out, contaminated or otherwise spoiled.*

The national waste strategy for Wales defined municipal waste as:

\[ \text{all waste under the control of local authorities or agents acting on their behalf.} \]

(WAG, 2002:39)

Waste is an indication of the unused materials which are produced as a result of inefficient production and/or consumption practices. It forces economic and environmental costs on the society through its collection, treatment and disposal (Sarkis and Dijkshoorn, 2005). Under section 75 of the EPA 1990 which amended by the Environment Act 1995, solid waste in the UK is classified into two main groups (Morris et al., 2000):

- Controlled waste – includes household, commercial and industrial waste. Both of household and commercial waste is known as municipal solid waste (MSW).
- Non-controlled waste – includes agriculture and mining waste.

2.4.2 Waste management hierarchy

The waste hierarchy presented by Waste on line (2006) shows most of the possible options for handling waste materials (prevention, minimisation, reuse, recycle, energy recovery and disposal) (see Figure 2.6). It is worth noting that the options listed at the top of the hierarchy (e.g. prevention, minimisation) are more sustainable and preferable than the options registered towards the bottom (e.g. landfill and incineration) (Waste on line, 2006). The hierarchy provides a model for waste management which both public and private-sector waste carriers could use it as a guiding tool in setting out their waste management strategies. Throughout the
implementation of the waste hierarchy a greater emphasis should be placed upon reducing the amounts of waste disposed into landfill (House of Commons, 1998).

Figure 2.6: Waste management hierarchy

![Waste Management Hierarchy Diagram](Image)

(Source: Image reproduced courtesy of Cardiff County Council)

The options of the waste management hierarchy can be defined as (Allen, 1994; Baker and Vandepeer, 2004):

1- Prevention – the elimination of the waste before it occurs. It usually referred to unrealistic option.

2- Minimisation – the reduction of the waste throughout all the life cycle of the product.
3- Reuse – the process of putting waste materials back into use so they do not enter the waste stream.

4- Recovery – the process of retrieving part of the value of the waste materials. This involves recycling, composting and producing energy from waste (EfW).

5- Disposal – this is the least favoured option and usually involves landfill and incineration of waste.

The EU waste strategy stressed on the importance of assessing the environmental, economic and scientific effects based on all SWM options (Environment Watch, 1996). This would no doubt lead to decide which alternative represented the Best Practice Environmental Option (BPEO) for each waste stream (Hall, 2003). Accordingly, the UK introduced a system called Life Cycle Assessment (LCA) for waste management to evaluate the environmental effects of the various SWM options (Gronow, 1999). Despite the considerable support of the waste management hierarchy in the EU, UK and Welsh waste strategies, Strange (2002) criticised the waste hierarchy arguing the waste hierarchy cannot be used as a guide but a reminder of the waste management options which were available to decision-makers. Strange (2002) also indicated that the waste hierarchy was just a rigid approach and had limitations such as:

- The hierarchy has little scientific or technical basis in determining the priority of options. For example, there is no scientific reason for choosing recycling over energy recovery.
- The hierarchy is not used very often particularly when a combination of options is undertaken.
- The hierarchy does not address the costs involved with each option and thus, it cannot help in assessing the affordability.

2.4.3 Solid Waste Management (SWM) in Wales

According to the most recent survey done by WAG, the total amount of MSW arising in Wales in 2003-04 was 1,820,166 tonnes. Out of such figure, 82% of MSW was disposed into landfill, 12% was recycled and 6% was composted (see Figure 2.7) (WAG, 2005). This reflected that Wales had implemented landfill as a primary waste disposal route. In an attempt to divert the waste away from landfill and change SWM practices in Wales, the WAG developed its waste strategy ‘Wise about Waste 2002’ which was considered the first waste strategy developed specifically to target SWM in Wales. It was based on the England and Wales Waste Strategy 2000 (DEFRA, 2000). WAG recognised that solid waste was the biggest environmental problem threatening Wales (WAG, 2002). The prime aim of WAG in setting out its strategy ‘Wise about Waste 2002’ is (cited in Sarkis and Dijkshoorn, 2005:6-7) was:

...to move Wales from an over-reliance on landfill to a position where it will be a model for sustainable waste management ... it will achieve this by adopting and implementing a sustainable, integrated approach to waste production, management and regulation...that minimises the production of waste and its impact on the environment, maximises the use of unavoidable waste as a resource

(pg. vii)
The waste strategy for Wales ‘Wise about Waste 2002’ sets targets for recycling and composting MSW. It entails:

- by 2003/04 achieve at least 15% recycling and/or composting of municipal waste with a minimum 5% composting (with only compost derived from source segregated materials counting) and 5% recycling;
- by 2006/07 achieve at least 25% recycling and/or composting of municipal waste with a minimum of 10% composting (with only compost derived from source segregated materials counting) and 10% recycling;
- by 2009/10 and beyond achieve at least 40% recycling and/or composting with a minimum of 15% composting (with only compost derived from source segregated materials counting) and 15% recycling.

(Source: WAG, 2005:13)

(WAG, 2002:87)
To achieve the aforementioned targets, “an expansion of the collection, materials sorting and reprocessing capacity is needed at UK and Wales levels to ensure that existing and future recovery targets are met. The creation and expansion of markets for recyclables will also play a crucial role” (WAG, 2002:72). Indeed, the WAG should play an active role to support and motivate Welsh businesses with the facilities in order to be able to implement sustainable SWM practices (Sarkis and Dijkshoorn, 2005).

However, even if local authorities in Wales provided recycling facilities, educated businesses and developed markets for recyclables, it still would be difficult for them to achieve the recycling and composting targets set in ‘Wise about Waste 2002’ (WAG, 2003). Thus, there is a great need to find out new techniques to enhance business participation in recycling and composting schemes. This has actually supported the aim of the current study which intends to identify the challenges facing small hotels as a part of the commercial business sector in Wales to undertake sustainable SWM practices and determine the best ways that can be used to encourage more sustainable SWM practices in small hotels. The Centre for Business Relationships, Accountability, Sustainability and Society (BRASS) (2003) reported that an overall culture change is needed to support the implementation of sustainable SWM practices. The desired change can potentially be achieved through the development of comprehensive awareness campaigns targeting households, industrial and commercial sectors to educate them on how to dispose their waste in an environmentally-
acceptable manner and make people aware of the benefits gained from implementing sustainable SWM practices.

In addition to the intensity of SWM problem in Wales, the WAG faced a range of challenges to improve the current situation. A major challenge for WAG was that “it does not control some of the vital levers required to make a fundamental change in the way of managing waste in Wales” (WAG, 2002, Para 1.7:1). For example, WAG does not have the power to change the level of landfill tax or enact/modify primary legislation (Cohen et al., 2003) and any change has to be taken in conjunction with UK government (WAG, 2002). The primary levers needed to change the current situation of SWM in Wales were wholly under the control of the UK government. Therefore, WAG had a very little opportunity to manage waste issues in a sustainable way (Cohen et al., 2003; Sarkis and Dijkshoorn, 2005). Other key challenges facing WAG related to the need to find markets for recyclables and build an adequate infrastructure for recycling (Cohen, 2006a).

2.4.4 Solid Waste Management (SWM) in hotel operations
For effective SWM business operators should identify: waste streams generated; where the waste comes from; why it is being produced; the cost involved in disposal as well as production of waste; the options available to manage it (Hillenbrand, 2002). Hence, a ‘waste audit’ is considered the first and the most important step in a hotel’s SWM programme to track waste generation and determine quantities and types of waste generated and
identify the best ways to deal with waste materials (i.e. reducing, reusing or recycling) (Kirk, 1996; Tang, 2004). As a part of a hotel's SWM programme, it is also essential for hoteliers to be aware of and comply with related regulations (Hillenbrand, 2002).

Emmott and Macrory (1995) added three main factors required for developing an effective SWM programme. There should be a high level of management commitment, effective communication system and a higher level of staff involvement. The programme should consider all hidden and visible costs of waste materials. Bates and Phillips (1998) indicated that an input/output system approach would be ideal to identify all the materials which going into the production processes. Then a range of different operational ways can be used to reduce waste through input changes (e.g. minimise the input of raw materials), process changes (e.g. change processing/designing and/or manufacturing methods) and product changes (e.g. alter packaging techniques) (Coggins, 1994 cited in Gray 1997) (see Figure 2.8).
Cummings (1997:98) developed “a five-tier hospitality hierarchy model begins with commitment, and next emphasised purchasing as a key waste gatekeeper. Priorities then move sequentially from input conservation consciousness to ways to re-channel items for reuse. Finally, if the foregoing cannot be accommodated, recycling is important to divert waste from final disposal” (see Figure 2.9). It is noted that commitment is considered the first and the most important level in Cummings’s solid waste minimisation hierarchy. It provides the basis for the long-term success of SWM programmes (IHEI, 1993). Cummings (1997), Trung and Kumar (2005) and Barclay et al. (2006) similarly reported that the success of any SWM programme relies to a great extent on staff commitment which can be
enhanced through providing training programmes and incentive schemes (e.g. recognition and financial bonuses).

**Figure 2.9: Model of hospitality solid waste minimisation hierarchy**

![Model of hospitality solid waste minimisation hierarchy](Adopted from: Cummings, 1997)

Cummings (1997) stressed the role of customers in the hotel's waste recycling programme. It is important to maintain the waste produced by customers (i.e. newspapers, aluminium and plastics) away from food waste. The hotel can use several methods for encouraging customers to separate their recyclable materials. For example, supply a bin for recyclables in each guest room, corridors or near elevators and then ask customers politely to put their recyclable materials in the appropriate place. Hayward (1994) indicated that the environmental attitudes of hotel guests had been
developed to the extent that they could be asked to separate their waste materials. Several hotels have reported high response rates for customer participation in a hotel’s recycling programme, e.g. Disneyland resort in Anaheim and Disney World.

Hoteliers must reconsider their SWM practices and recognise the different techniques needed for reducing waste (Cummings, 1991). It is essential to make businesses aware of the methods used for reducing waste and the related financial and environmental benefits. The most commonly-used methods for reducing waste include: reusing, recycling and composting waste materials; shopping in an environmentally-responsible manner; utilizing new technologies; donating used items to charity organisations (Smith, 1993; Ebreo and Vining, 2001). In actual fact, SWM programmes can be of great concern to hotel operators for their potential to reducing disposal costs and assisting hotels to comply with the upcoming regulations (Cummings and Cummings, 1991; Fischer, 1995; Litvan, 1995). Todd and Hawkins (2007) noted that an implementation of waste minimisation programme can help hotel operators reduce their waste disposal bill by 60%.

Abu Taleb (2005) developed a model for applying an effective waste recycling programme in Cairo five star hotels. The model considers the necessary steps for recycling a hotel waste. It also sets a timeframe for tracking the progress and a cost-benefit analysis of the programme.
Step 1: Develop an environmental policy incorporating recycling into the hotel policies.

Step 2: Perform a waste audit to identify waste streams that can be recycled.

Step 3: Prevent waste generation by reusing items and effective consumption of resources

Step 4: Identify eligible materials for recycling.

Step 5: Work with the waste hauler to get started. Identify collection methods, frequency of collection, container needs and costs of collecting recyclables and non-recyclables.

Step 6: Establish the hotel recycling programme for example, putting additional container for recyclables in each guest room.

Step 7: Buy products that made from recycled content to create demand for recyclables.

Step 8: Train your employees. An on-going education is the key to overcome contamination and ensure employee cooperation.

Step 9: Educate your guests. For example, give guests a flyer that explains your recycling and waste reduction programme when they check in.

Todd and Hawkins (2007) developed a guide to help accommodation establishments to reduce the amount of waste produced. In their guide, they stressed on eliminating hotel waste at source by avoid buying unnecessary items and consider buying reusable alternatives. This would reduce the cost of disposal by 8% and would also reduce the cost of purchasing as non-reusable products were more expensive than reusable alternatives. For example, replacing individual packs of soap with refillable dispensers. In addition, hotel operators should work with suppliers to reduce packaging waste and select suppliers who encourage take-back packaging scheme.
Moreover, hoteliers should consider recycling general waste streams. This can reduce the amount of waste in a medium-sized hotel by 38%. Similarly, composting of organic waste can then be carried out in the premise or by a third party organisation. Finally, waste crushers and compactors could be used, particularly if the hotel produced large volume of packaging waste and was charged by volume.

However, the options available to hotel operators in order to manage their solid waste vary according to the location of the hotel. This reflects that hotels located in rural areas may have limited access to facilities to effectively dispose of their solid waste in comparison to hotels located near or inside urban areas. For example, recycling may not represent an economically-viable option for local authorities or private waste carriers, particularly if it is introduced in rural communities and also suppliers are less likely to offer take-back packaging schemes (Todd and Hawkins, 2007).

Hotels in Thailand provide a good example of managing hotel waste in an environmentally and economically-acceptable way. They sold food waste to farm owners who collected it at the hotel doorstep, while newspaper and plastics were sold to scavengers. It seemed that hotels in Thailand incurred no costs for waste disposal, instead, they could earn some money by selling different hotel waste streams (Web 1, 2006). According to a survey by Trung and Kumar (2005) to study the practices of hotels in Vietnam regarding energy, water and SWM, 60% of surveyed hotels were found to be selling...
food waste to local collectors to be used for feeding animals, 10-30% of solid waste was separated and sold to local collectors for recycling and 10-30% of reusable items (e.g. plastic bottles and cans) were sold to local scrap collectors. The rest of the waste represented a very small percentage which was taken away to landfill by waste contractors at a fixed waste disposal charge.

Food waste represents the largest waste stream in a full-service hotel (Crosby, 1993). According to a waste analysis by Shanklin and Pettay (1993), food waste was found making up to 66.5% of hotel waste in mid-scale hotels. Webster (2000) indicated that food waste can be minimised or avoided if an accurate specification for food purchasing is established (e.g. buying pre-prepared meals, ready-trimmed meat and vegetables). On this basis, the problem of food waste would be focused only on the amount of waste left in customer’s plate together with any other surpluses from the kitchen. Trung and Kumar (2005) suggested that hoteliers should evaluate and monitor the weight of food waste daily in order to optimise the amount of food prepared and the quantities of raw materials purchased and consequently reduce the amount of food waste disposed. Webster (2000) referred that composting is a sustainable alternative for handling food waste (see section 2.6.3). Traditionally, food waste was used for feeding animals but this path was closed in UK after the problem of Foot and Mouth Disease took place in 2001 (Sarkis and Dijkshoorn, 2005).
2.5 Waste minimisation and/or prevention

2.5.1 Definitions

The Organisation for Economic Cooperation and Development (OECD) defined waste minimisation as:

preventing and/or reducing the generation of waste at the source, improving the quality of waste generated and encouraging re-use, recycling and recovery.

(OECD, 1998a cited in Strange, 2002:10)

The US waste strategy ‘waste wise’ determined a key distinction between waste prevention and waste minimisation (Cummings, 1997:99). Waste prevention means: “eliminating waste before it is created. It involves the design, manufacture, purchase or use of materials and products to reduce the amount or toxicity of what is thrown away”. Whereas, waste minimisation means: “waste prevention plus recycling or composting” (Cummings, 1997:99). Hence, waste minimisation is a wider concept than waste prevention. It includes a variety of waste management alternatives, i.e. recycling and energy recovery (Pongracz et al., 2004 cited in Pongracz, 2004). In addition, waste prevention may be considered an aspect of waste minimisation as explained in the OECD definition.

2.5.2 Green purchasing

The reduction of waste should start at the point of purchasing, for instance buying items that have minimum packaging (Green Dragon, 2006). Min and Galle (1997) defined green purchasing as an environmentally-conscious practice that intends basically to enhance the reduction of waste at source
and increase the potential for recycling and reusing of the purchased materials. Berger (2002) identified a number of techniques that can be used to avoid unnecessary packaging and thus getting the most value of the product for the price paid, among these: buying products in large sizes or in bulk quantities; selecting items with less packaging or with packaging that can be reused or recycled.

Reducing solid waste throughout the product’s life cycle required the development of a system approach encompassing manufacturers, consumers and government. First, manufacturers should be pressurized to produce less wasteful and more recyclable products. Second, customers should be educated and motivated to buy environmentally-friendly products and to reuse, recycle or properly discharge solid waste. Finally, the municipality should take part by providing an effective waste recycling system (Lindsay, 1998). Schlegelmilch et al. (1996) and Mostafa (2007) found a positive relationship between green purchasing decisions and buyers’ environmental consciousness and ecological knowledge. They demonstrated that consumers who had higher levels of environmental consciousness were more likely to undertake green purchasing practices.

In recent years an increased number of consumers in US and most of European countries are becoming more environmentally-friendly in their life styles and personal habits (Stone et al., 1995). Research has shown that only 10% of buyers in the UK tend to sustain eco-labels and environmentally-
friendly products (Curlo, 1999), whereas 50% of consumers in US are classified as being green-based consumers (Phillips, 1999). According to a study made by Maineri et al. (1997) to assess the factors which shape customers’ purchasing decisions, it was found that the quality of the product constituted the most significant feature considered whereas the environmental attributes of the product were lowed down in the customers’ priorities.

Indeed, lack of awareness and limited information were significant barriers facing buyers purchasing eco-friendly products (MORI, 2002). In addition, the enormous and/or the diversity of the factors that should be considered when selecting an eco-friendly product made it difficult to consumers to adopt green purchasing. Consumers may need a systematic and objective approach to focus their efforts (Swanson et al., 2005).

Greener product alternatives are not always economically viable or suitable. Developing greener purchasing policies for individual product groups is an effective approach as long as this is the case. National guidance on the availability, advantages and disadvantages of greener alternatives is much needed.

(Warner and Ryall, 2001:44)

Most local authorities used to inform public with green purchasing policies through the development of green purchasing guides. However a critical revision to nine of these guides showed that they were limited in their scope focusing only on the narrow definition of green purchasing. Although training was one of the most successful tools to raise the awareness of buyers and support the implementation of green purchasing policies it was not widely
used by local authorities (Warner and Ryall, 2001). From another perspective, businesses may have little chance to implement green purchasing practices because many green products are expensive and also qualified suppliers are limited. Moreover, a lot of people do not recognise the benefits gained from adopting green purchasing (Min and Galle, 1997). Admittedly, green purchasing can create economic value through reducing the disposal costs, conserving resources and improving the marketing image of the company (Min and Galle, 1997).

2.5.3 The UK waste minimisation initiatives targeting SMEs

The UK government has dedicated various agencies basically to support small businesses to minimise their waste by providing free advice and consultation services, publications and guides, among these: the Environmental Technology Best Practise Programme (ETBPP), Environmental Service Association, Green Business Clubs and Business in the Environment (Read et al., 1997). However, the majority of small business operators often had little or no intention to seek advice from these organisations on how to implement waste minimisation programmes. Most small businesses are more interested with other strategic priorities. In addition, the waste disposal charge in the UK remained too small to make them start reducing their waste (Read et al., 1997).
• **Envirowise programme**

Envirowise is a national programme established by the UK government to enhance waste minimisation initiatives in commercial and industrial sectors and to assist businesses to be more environmentally-friendly. In particular, the programme intends basically to provide a variety of free services to support SMEs to increase profit, minimise waste and comply with relevant environmental legislation. Envirowise provides: telephone advice; waste minimisation workshops; free ClubNews letters; free publications and consultancy services to SMEs (site visit); considerable support to the establishment of local and regional waste minimisation clubs (Phillips *et al.*, 2002; Wright, 2006; DEFRA, 2007b).

• **Waste minimisation clubs**

Waste minimisation clubs appeared first in Netherlands in the 1990s. This approach was built mainly on the exchange of ideas and information about waste minimisation measures between geographically-close companies. It has proved to be a successful way to support businesses in reducing their environmental impact and to make financial savings. The success of this approach has led many countries to consider it, for example, the UK established more than 100 clubs with similar initiatives in New Zealand and India (Barclay and Buckley, 2000).

In the UK, waste minimisation clubs have played a distinctive role in supporting sustainable SWM approaches. In Northamptonshire, for instance,
14 waste minimisation clubs had been established since 1997. These clubs provided great financial savings and training for 272 companies, mostly SMEs. This approach was mainly developed by local and regional partnerships, involving: facilitators, regulators and service providers (Phillips et al., 2002). There are two different types of waste minimisation clubs, including: sector-specific or cross-sectoral/regional clubs. The cross-sectoral approach was more dominant in the UK representing more than 95% of all clubs available. This may reflect that the clubs where there is no direct competition between members are more successful in the UK (Barclay and Buckley, 2000).

2.6 Waste recovery

2.6.1 Reuse

Reuse is best defined as:

The use, for the second or more time, of a product for the same purpose, under the same form and with the same properties of the material as the first use, the material having constantly remained under the same form between several uses.

(Lox 1994 cited in Pongracz et al., 2004:16)

Reuse option is placed superior to recycling in the waste hierarchy because of its highest conservation efficacy. It implies that products can be reused again as they are or with little change to product integrity (Centre for The Study of Law and Politics, 1991). In contrast, “recycled products typically undergo being pulverised, co-mingled with other elements and reprocessed or reformed into different products. In most cases, reused products
experience what is known as ‘the spiralling effect’ to a much lesser degree than do recycled products. The spiralling effect refers to the concept that re-processed materials generally lose quality, require/added energy and are less versatile and recoverable in their subsequent incarnations” (Cummings, 1997:103)

In some cases, it is difficult to reuse material and retain its value. For example, hotels which supply guestrooms with individual packs of soaps or shampoos cannot use the rest for subsequent guests coming to the room. Nevertheless, it can recover part of the material by donating it to charities (Kirk, 1996). Becklake (1991) argued that plastic bags could be reused several times and then recycled. Some environmentally-conscious stores give discounts to consumers who bring their plastic bags back and use them again as a way to maximise the benefits of plastic bags and reduce the impact on the environment.

2.6.2 Recycling

Recycling is a type of recovery operation defined as:

The reprocessing in a production process of the waste materials for the original purpose, or for other purposes, including organic recycling but excluding energy recovery.  
(DEFRA, 2003:19)

The collection and separation of materials from waste and subsequent processing to produce marketable products.  
(Davies et al., 2002:31)
Recycling is based on the concept of preserving resources. It requires less raw materials, less energy and produces less emissions to the environment than producing new material. However, recycling is not always environmentally preferable, particularly when the recycled material cause losses of other non-renewable resources, i.e. energy (Pongracz et al., 2004).

2.6.2.1 Main factors hampering recycling decision

Maclaren and Yu (1997) identified six variables involved in recycling decisions of any firm. These variables are: quantity of waste generated; recycling market prices; number of employees; floor space; type of Industrial-Commercial-Institutional (ICI) activity; landfill bans. Feiock and Kalan (2001) added that the cost of recycling is a significant issue in a firm’s decision to recycle. The firm’s owner/manager often assesses the benefits gained in relation to the costs associated. Strange (2002) noted that there is a common belief among small businesses that recycling and waste minimisation are difficult.

Deyle (1988) noted that number of employees is a significant indicator to the implementation of a recycling programme. Small businesses may face significant problems because they normally employ a smaller number of staff than larger businesses and thus may have no staff to allocate to SWM which is termed as a 'non-productive activity'. Maclaren and Yu (1997) added that small businesses often generate small quantities of waste which may be a significant barrier in recycling small business waste as recycling companies
typically require a minimum volume of materials to be available before collection. Affirmatively, Todd and Hawkins (2007) reported that recycling will not be an economically-viable option for the waste carrier when small amounts of waste are produced. Thus, group recycling collection can be ideal option for small businesses.

In addition to the quantity of waste produced by a small business which is economically unattractive for recycling, there are a number of other challenges facing waste carriers, particularly to recycle small business waste (Apotheker, 1995): First, it is a challenge for the carrier to set a second container for recycling in a small business as such businesses are very compact. Second, the cost of transportation is considered another burden over the waste carrier because participating businesses may be geographically-located in remote areas and away from each other. Third, most carriers do not provide awareness and educational services. Many businesses would like to recycle but they lacked information on how to do it or where to find the cheapest service.

A telephone survey made by the Urban Institute at The University of North Carolina in Charlotte (UNCC) 1998 revealed that the main obstacles confronting small businesses in recycling include: inconvenience, lack of space and lack of time (Bacot et al., 2002). The results of the UNCC survey have been stressed by Revell and Blackburn (2004) in looking at restaurants in the UK. They added that the presence of poor local recycling infrastructure
had made recycling uneconomic and difficult option for small businesses. While, Ebreo and Vining (2001) indicated that the most significant reasons hindering people to engage in waste reduction activities were lack of concern and issues related to convenience. Moreover, Maclaren and Yu (1997) asserted that contamination of waste materials is considered another significant issue in recycling. It would be very costly and difficult for any business to invest in separating highly-contaminated waste, for example waste combined with food.

2.6.2.2 Means for encouraging recycling behaviour

Intrinsic and extrinsic rewards together can be successful in promoting a firm’s environmental behaviour. Lingard et al. (2001) showed that extrinsic rewards alone (i.e. external incentives) would not be sufficient to motivate people to recycle. De Young (1984) indicated that incentive schemes might be very effective in making firms start new environmental initiatives, i.e. recycling. However, incentive schemes may be less useful in maintaining behaviours in the long-term, for instance such initiatives may stop once the incentives are not delivered. In particular, intrinsic rewards are significant for addressing the expected change, such as people’s commitment and personal satisfaction with feelings of competence and involvement (De Young, 1996).

The UNCC survey found a lack of knowledge among small businesses about the commercial recycling programme and thus it was concluded that providing awareness and education were essential in strengthening a
company’s environmental behaviour. There should be monthly meetings between businesses and/or with the local authorities to make businesses aware of the different techniques used for reducing and reusing waste and also familiarize businesses with local recycling systems (Bacot et al., 2002).

Girard and Kirk (1998) concluded that university residences can play an effective role in changing the attitudes of students towards SWM through the adoption of a waste management policy and demanding students to implement certain behaviours. This, no doubt, would influence and shape their attitudes and SWM behaviours for the rest of their lives. In comparison to other sectors of the hospitality industry, university residences have gained such capability because of their less-transient clientele as well as their authority to force certain SWM behaviours (e.g. recycling).

Some European countries rely on the principle of “pay as you throw” to promote waste reduction activities (i.e. recycling). This principle is based on the more you throw away the more you should pay. People do not like to lose money on issues such as waste disposal. It can be used effectively to motivate people to generate less waste and do more recycling (Fullerton and Kinnaman, 1996). Blamey (1998:677) has asserted that “individual recycling norms are more likely to be activated when it is perceived that the government is doing its bit”. 
Apparently, the success of commercial recycling depends to a great extent on understanding business needs. Hence, local authorities have to find ways to know more about business situations and then develop strategies to enhance business participation, regardless of type and size, in the public recycling programme (Stevens and Kusterer, 1995; Apotheker, 1995). It was found that some states and local governments in USA had substituted their voluntary recycling programmes with compulsory ones. They enacted legislation to enforce commercial recycling but such laws particularly targeted larger businesses. For example, San Diego County applied its recycling regulations to businesses that occupied a minimum area of 20,000 square feet (Oskamp et al., 1991; Apotheker, 1995).

Apotheker (1995) identified 13 ways for the local authority to increase small business recycling collection, among these: grouping collections from geographically-concentrated businesses; imposing a charge for municipal waste collection; developing markets for recycled materials; making waste carriers and producers aware of the benefits of implementing recycling programmes; collaborating with the private waste sector to enhance small business recycling collection.

... collection from many small businesses adds up to substantial volumes. Perhaps more importantly, success hinges on the businesses – like the steps – being close together (Apotheker, 1995:16)

Unfortunately, there is very little demand for recycled materials (Lorenzoni, 1999). Therefore, Collcutt (1997) indicated that all parts of the society need
to share the responsibility of changing this situation and thus sustaining commercial recycling. In practice, the cycle should involve: the government, manufacturers and consumers. First, there is a need for recycled markets to be formed. Second, companies have to make use of secondary materials in production processes. Third, consumers have to demand items that are made from recycled materials.

2.6.3 Composting

A process in which the organic waste is broken down biologically under controlled conditions so that the end product can be used for horticulture. The decomposition is carried out by bacteria in the presence of oxygen and the food waste is broken down into water, carbon dioxide and humus which are returned to the soil to improve its structure and to add to the micro-nutrients in the soil.

(Webster, 2000:167)

Composting is an effective way for biodegrading waste with a high organic content, such as garden waste, food waste and cardboard (Department of the Environment, Transport and the Regions (DETR), 1999). It can help in reducing the cost of waste disposal and increasing the fertility of the ground. This process is carried out by bacterial action which converts organic materials into humus. It does not require the addition of any chemicals, i.e. phosphate or potassium salts, except nitrogen compounds which may be needed to change the unfavourable carbon – nitrogen ratios. The C – N ratio refers to the levels of oxygen, nitrogen and the moisture content in the organic matter (Brunt et al., 1985). It is essential to control such ranges for producing high-quality compost. The time needed for composting can be
much reduced by turning over or agitating the materials and also if the air is blown or sucked through the composted waste. It is worth noting that a good compost should be hygienic and odourless (Brunt et al., 1985; Webster, 2000).

In food service industry, up to 30% of raw materials purchased becomes waste. It is difficult to continue dispose of organic waste into landfill as landfill sites become scarce and the landfill tax continually increases every year. Composting represents a sustainable alternative to handle organic waste (Schaub and Leonard, 1996). The composting process yields economic and environmental value. It reduces the amount of waste by up to 40% and produces a composted material that can either be sold for profit or used by producer as a soil nutrient (Schaub and Leonard, 1996).

Schaub and Leonard (1996) indicated that composting of organic waste is not widely used in the food service industry but there is an increasing tendency among food service outlets to implement it. Operators should not only use composting as a simple disposal method but also to produce a value added soil amendment. This requires the development of markets for composted materials and accurate definitions of quality standards. It has been shown also that composting of organic waste is not widely adopted by waste carriers as a SWM option. This is due to two reasons: low cost of landfill; the difficulty in marketing composted products because there is a widespread negative perception of composted materials (DETR, 2000).
There are a variety of composting methods. However, the method used depends on the nature and the quantity of the materials to be composted, the location of the composting facility and the available resources (i.e. funds) (Schaub and Leonard, 1996). The composting process can be carried out at home using a traditional compost heap (Pellaumail, 2001), or commercially using three different techniques, including: open-air windrow, covered windrow and specially-designed vessels that control moisture, temperature and aeration of the composting process (Marion, 2000; Pellaumail, 2001).

### 2.6.4 Producer responsibility

There are two different approaches identifying the responsibility for waste management. Firstly, shared responsibility – this approach holds that the responsibility is shared among the holders of the product at each stage of its life cycle. This means that producers, distributors and consumers are responsible for managing the waste they produce. Secondly, extended producer responsibility – places the whole responsibility on manufacturers who will include the cost of waste disposal in the purchasing price (Strange, 2002).

*In practice, Extended Producer Responsibility (EPR) legislation can only ensure that producers have the ultimate product responsibility, since costs may be passed on to consumers as the free market system permits. Nonetheless, it can be assumed that producers will respond to legislation by reducing such costs to a minimum through product changes. Passing responsibility to producers as polluters is not only a matter of environmental policy, but is the most effective means of achieving higher environmental standards in product design.*

(OECD, 1998b:11)
The EPR approach often entails producers to consider the economic benefits and the environmental costs when developing their products. This process is called ‘a cradle to grave’ assessment (Hall, 2003). This approach was developed to improve waste management as approved in the Earth Summit 1992. It reflects ‘the polluter pays principle’ (Grub et al., 1993). The EPR approach was first implemented in the 1990s in Germany, Canada, Korea and Japan and covered only packaging waste, with the exception of Korea where a variety of products were included (home electronics, lubricating oils, batteries, tyres, plastics and packaging) (Livington and Sparks, 1994). Currently, this approach has been widely used by different European countries and covers a great range of products (Mayers and France, 1999).

2.6.4.1 Product Take-Back (PTB)

Both “PTB” and “polluter pays principle” proved to be successful ways for making producers lessen the environmental impacts of their products (Lindsay, 1998). The PTB system implied that manufactures must find ways to improve their products so as to reduce costs and also reduce the environmental impacts resulted throughout the entire stages of the product’s life cycle, particularly the ‘end-of-life’ stage (Rose and Stevels, 2000).

In comparison to the ‘polluter pays principle’, PTB system is built upon a joint-responsibility between different stakeholders, involving: the government, manufactures, distributors, consumers and recyclers (Nakajima and Vanderburg, 2006). Rose and Stevels (2000) applied an environmental value
chain analysis to PTB systems examining three main issues: product, money and information flows between the involved stakeholders. They discovered gaps in communication between the involved partners. Actually, retailers and/or distributors provide a direct link between consumers and producers. However, they have little incentive to take part in end-of-life systems. For instance, retailers are like any other business seeking to make a profit but by storing returned products by customers they will reduce the space to store new products. This issue can be solved by providing financial incentives to encourage them to participate in such schemes, i.e. retailers in Netherlands are paid $0.75 for handling old televisions (Rose and Stevels, 2000).

The development of a potential comprehensive PTB system in the UK depends largely on both the industry and the government taking an active action. The industry needs to show a positive response and accept their products back, while the government has to provide the impetus necessary for change. These roles have to be set side by side as any voluntary initiative by the industry will not be successful without a supportive legislative framework. The law can be used to pressurize less-interested companies to undertake their responsibilities (Mayers and France, 1999).

2.6.4.2 German packaging take-back system

Germany was the first European country to set an ordinance for recovering packaging in 1991. The ordinance required producers to redesign their packaging to be more eco-friendly and enhance refilling and recycling. The
ordinance also known as PTB and was applied to various types of packaging, except plastic packaging, as a result of lack of markets for recyclables in Germany. Retailers provide the key role in the success of the packaging take-back system in Germany. Throughout this system, buyers can leave their packaging with retailers for manufacturers who are required to take it back and recycle it. The ordinance brought a range of benefits, among these: reducing the amount of packaging waste sent to landfill and reducing costs (Nakajima and Vanderburg, 2006).

Initially, the German government encouraged voluntary initiatives to reduce packaging waste but such initiatives did not achieve the desired targets from the industry. Consequently, the government enacted packaging waste regulations to enforce business participation (Nakajima and Vanderburg, 2006).

*With packaging, it is difficult to trace the packaging to a specific producer and to return each piece of packaging to its producer. This is one reason for the allowance for an optional Producer Responsibility Organisation (PRO).*

(Nakajima and Vanderburg, 2006:512)

A PRO is a private sector organisation financed by packaging manufacturers to collect and recycle packaging on behalf of them in conformity with the legislation. In Germany, an organisation called Duales System Deutschland (DSD) was formed to act as a PRO and manufacturers put a Green Dot logo on their packaging to indicate that the packaging should be collected and recycled by DSD. All participants have to pay a license fee to DSD to
manage their packaging waste, such fees are based on the type and weight of the packaging (Nakajima and Vanderburg, 2006).

2.6.4.3 UK packaging take-back system

The Packaging Waste Directive 94/62/EC developed by the European Parliament in December 1994 had a large influence on reducing the amount of packaging produced by commercial and industrial sectors in Europe. It was found that the UK government achieved the lowest rate of recycling packaging waste (about 38%) among other European countries (Fernie and Hart, 2001). In an attempt to meet the targets of the EU Directive 49/62/EC on packaging waste, the UK government enacted the Producer Responsibility Regulations on 6th March 1997. The regulations impose specific recovery and recycling targets on all UK packaging producers who generated a turnover of up to two million pounds and/or handle more than 50 tonnes of packaging waste per annum to meet national targets (DEFRA, 2003). Obligated producers have a choice either to:

*discharge these obligations individually, that is take all the steps necessary to ensure that the specified tonnages of packaging waste are recovered or recycled or they may join an Agency-registered compliance scheme that will meet obligations on their behalf.*

(DEFRA, 2003:16)

Both options entail producers paying financial costs to meet their recycling and recovery obligations. Producer’s recovery and recycling obligations are accounted by the Environment Agency based on the amount of packaging handled in the previous calendar year.
If a company handles less than 50 tonnes of packaging waste per year or has a turnover of less than two million pounds it will not be obligated to recycle or recover packaging waste. With regard to end users disposing of packaging waste, it is at their discretion to dispose of their waste however they choose. Retailers do not have any obligation to end users to provide a free of charge take-back service (Environment Agency, 2008).

To summarise, the packaging take-back system in the UK is not as effective and/or comprehensive as the take-back system implemented in Germany where all producers, distributors, retailers and end users are involved. In the UK the system is applied only to larger packaging producers to recover and recycle their waste whereas smaller producers, who generate less than 50 tonnes of packaging waste, and end-users, e.g. households and businesses, have no obligation under the UK Packaging Regulations 1997 to recycle their waste. As such they have the choice either to dispose of packaging waste into landfill or recycle it through a waste contractor.

2.6.4.4 Swiss WEEE take-back system

Electronic waste, commonly known as e-waste, involves all electronic equipment passing beyond its useful life. Switzerland is one of the first European countries to develop an industry-wide system for managing e-waste (Sinha-Khetriwal et al., 2005). The Swiss system is built upon EPR approach and operated by using two PROs - the Swiss Association for Information, Communication and Organisational Technology (SWICO) and Stiftung Entsorgung Schweiz (SENS) who manage the system in regards to
the collection of e-waste on behalf of member manufacturers. The system is financed by an Advanced Recycling Fee (ARF) which the consumer has to pay when buying a new electrical appliance to cover the collection, transport and recycling of the discarded Electrical and Electronic Equipment (EEE) (Hischier et al., 2005; Sinha-Khetriwal et al., 2005).

The Swiss WEEE take-back system is comprehensive in its scope covering a wide range of EEE and nationally accepted. The retailers can also play a significant role in the system where consumers can take their obsolete appliances free of charge to thousands of stores across Switzerland and making it easier for consumers who cannot be able to reach one of the SWICO and SENS formally collection points (500 points in 2003).

(Sinha-Khetriwal et al., 2005:495)

Hicks et al. (2005) showed a key difference between the WEEE system implemented in most European countries and the WEEE recycling model in China. In most of European countries consumers can either pay a recycling fee in advance to return their old appliances (e.g. Swiss system) or returning them free of charge. Thus, recycling companies can make great revenue from selling the recycled materials and refurbished appliances in addition to the waste collection fees paid by original producers. However, in China recycling companies pay consumers to collect their old appliance.

2.6.4.5 UK WEEE system

The WEEE regulations 2006 established the basics of the UK system for the collection, treatment and recycling of WEEE. The system implies that producers of EEE have a number of obligations (Department for Business Enterprises and Regulatory Reform (BERR), 2007): First, they must join a
Producer Compliance Scheme (PCS) which carry out the responsibility for treating and recycling household WEEE on behalf of its members. Second, they must categorize their products with a crossed out wheeled bin symbol and a producer identifier mark so that the equipment can easily be identified at the end of its life. Under the WEEE Regulations 2006 producers are responsible for financing any costs of collection, treatment, recovery and disposal of WEEE. In the UK’s WEEE system as well as Switzerland system, distributors and/or retailers provide the link between the users of WEEE and producers. They must provide take-back service to enable households to return their WEEE free of charge (BERR, 2007).

The WEEE Regulations 2006 control also the disposal of non-household WEEE (i.e. business end users). Any business who uses any of the five EEE categories that covered by the regulations must dispose of it separately from other waste streams. The regulations make a distinction between two different cases where a business can discard its WEEE (Web 2, 2008): First, a business can dispose of WEEE free of charge if it is bought after 13 August 2005 and is being replaced with new equivalent EEE. Second, if it is historic WEEE (EEE bought before 13 August 2005) and is not being replaced with a new equivalent EEE a business must pay for the collection and disposal of its WEEE. If it is going to be replaced a business can arrange with the supplier to take back the old WEEE.
It was noted that the operation of WEEE system in Switzerland and UK are very similar. The system in both countries is built upon the EPR approach where manufacturers take the responsibility to recover and recycle their WEEE. Consumers in Switzerland as well as householders in the UK can take back their obsolete equipments to stores free of charge. However, practically, manufacturers pass the cost of collection and recycling to consumers either in a form of ARF (Switzerland WEEE system) or in the price of the product (UK WEEE system). So, consumers pay at the end for the disposal of their old appliances. In addition, the WEEE regulations in the UK embrace two different cases for business end users in discarding of their WEEE, which largely depend on the negotiation with retailers, as discussed earlier.

2.7 Waste disposal

2.7.1 Incineration

Incineration by itself has the advantage of reducing the amount of waste disposed by over 80%. However, it is considered the most expensive option for handling waste and costs about three times as much as landfill. It also contributes to environmental pollution as a result of gas emissions (dioxins, CO₂ and methane) during the burning process (Becklake, 1991). Moreover, it does not get rid of the waste completely as for every 10 tonnes of waste burnt one tonne of ash is produced. The remaining ash still can be of a significant problem if it is disposed into landfill (Becklake, 1991; Matthews, 2009). It has been shown that some countries like US and Germany use the
bottom ash in road construction and in asphalt pavement (Eighmy and Kosson, 1996; Vehlow, 1996).

Energy from waste (EfW) can be regarded as a significant form of waste incineration. However, it is not widely used in the UK as a waste disposal method unlike some other European countries. It was found that about 8% of municipal waste in the UK was burnt in EfW plants, compared to 50% in Sweden and Denmark (Waste on line, 2006). The UK government does not encourage either incineration or landfill. Instead, the government aimed to meet the landfill directive and divert the waste away from landfill by maximising recycling and composting (Ares and Bolton, 2002). Currently, there are 17 licensed EfW plants in England and one in Wales (Environment Agency, 2009).

Interestingly, Friends of the Earth Cymru (2003) indicated that incineration either via mass-burn or EfW is not the solution to phase out of landfill in Wales. Matthews (2009) reported that incineration will discourage recycling in Wales and will reduce the impetus to reduce the waste at the first place. Welsh local authorities instead should encourage the waste hierarchy’s options of reduce, reuse and recycle and not incinerate a valuable resource which will be associated with environmental and health problems. Friends of the Earth Cymru (2003) supported the gradual increases of the landfill tax and suggested the introduction of an incineration tax as well to discourage
the diversion of waste from landfill to incineration and to encourage minimisation, recycling and composting.

There is still great debate regarding the health effects of waste incineration (Waste on line, 2006). Recently, incineration can be carried out via using modern technologies. These technologies involve a combination of two advanced thermal processes: pyrolysis and gasification, which utilize high temperatures to breakdown any waste material containing carbon. These technologies do have some advantage over mass-burn incineration by generating fewer emissions and creating fuel. However, they also have most of the disadvantages of traditional incinerators (e.g. wasting of resources, producing toxic air emissions and solid residues, including ash) (Friends of the Earth Cymru, 2003).

2.7.2 Landfill and landfill tax

The national waste strategy for Wales defined landfill as:

\[ \text{waste deposited on, or on a structure set into, the surface of the land; or under the surface of the land.} \]

(WAG, 2002:41)

Landfilling of waste refers to the process of putting the waste in a hole in the ground and then covering it with soil. Once the site is filled up it can be used in different aspects for example, building a park or a golf course (Becklake, 1991). Kirk (1996:103) stated that “landfill is the least preferred alternative since it doubles the environmental impact in that the value of the material is lost and land is destroyed in the form of a landfill site”. Becklake (1991)
added that this method of waste disposal leads to significant environmental impacts, including: pollution of the ground water as a result of the formation of the ‘leachate’; decomposition of the waste can generate explosive gases (e.g. methane), which are very dangerous to the surrounding community. Moreover, landfill can cause annoyance to the surrounding area in the form of odour, flies, litter and noise (Kharbanda and Stallworthy, 1990). It seems that this alternative will not be used as a waste disposal method in the long-term because of its environmental impacts, rising costs and public refusal (Gray, 1997).

Despite the aforementioned disadvantages of using landfill, the UK is characterised by an over-dependence on landfill, landfilling over 75% of MSW (see Figure 1.2). This is because it is quite simple, cheap and well-known method. However, it will be great challenge for the UK government to continue using this option in the next few years as the available space for landfill sites becomes more limited. Also, the UK government needs to comply with the EU waste strategy and other international policies which have been established to discourage landfill and promote sustainable methods (Gray, 1997; Read et al., 1998a). Specifically, Wales is at the bottom of the European list in terms of SWM practices. It mainly depends on landfill as a primary waste disposal option (as explained earlier in section 2.4.3).
• **Landfill tax**

The EC Directive on the Landfill of Waste 1993/31/EC has influenced waste management practices in the UK. It acts as the main pressure for the UK government to change current practices and promoting sustainable alternatives among commercial and industrial sectors. It aims basically to reduce or avoid the harmful effects associated with landfilling of waste materials (Wright, 2006). The landfill tax is an effective tool to drive SWM in the right direction and encourage waste recycling (LWRA, 1994). However, the landfill tax in the UK is much cheaper than other European countries. Thus the UK government has developed a plan to increase the landfill tax by £3 per tonne for active waste from 2005/2006 until it reaches £35 per tonne (Waste on line, 2006). Lorenzoni (1999) previously noted that the Environmental Body Tax Credit Scheme (EBTCS) can use the revenue which is resulted from the implementation of landfill tax to support environmentally and community projects.

However, Martin and Scott (2003) reviewed the effectiveness of the UK landfill tax and found that the tax had failed to significantly change the behaviour of households and SMEs to adopt sustainable alternatives to landfill. Although the landfill tax was set to divert the waste away from landfill there was a significant gap in the way of reaching this aim as all efforts were directed towards recycling but not for reusing, composting and waste minimisation. Moreover, a number of problems have been arisen as a result of imposing a tax on waste disposal into landfill (e.g. fly-tipping and illegal
waste disposal actions). Increasing landfill tax has led many commercial waste producers to covertly use the domestic waste stream (i.e. Civic Amenity Sites (CAS)) which provides a free service to households. Indeed, small businesses, particularly, tend to transfer their waste illegally to household sites because it is cheaper for them than hiring skips and paying a charge for disposing the waste into landfill (Morris et al., 2000).

2.8 The key players in the UK waste management industry

The waste management industry in the UK was regulated, guided and controlled originally by the ‘Control of Pollution Act’ 1974. A great deal of these regulations was upheld and developed with the EPA 1990 which increased control over the industry (Read et al., 1998a). All producers of waste must comply with section 34 of the EPA 1990 which is called ‘Duty of Care’. This requires all commercial/industrial businesses to dispose of their waste regularly, store and present it in safe and proper conditions (i.e. no leakage) and deal with an authorised waste carrier (Webster, 2000). The Environment Agency is the regulatory body mainly responsible for controlling SWM activities of both the local authority and the private waste sector, issuing waste management licenses and helping local authorities to identify the BPEO for each waste stream (DETR, 2000).

2.8.1 Local Authority

The local authority plays a central role in collecting, treating and disposing of MSW in the UK (Audit Commission, 1997). They have the responsibility to
develop and implement waste strategies based on encouraging high resource recovery (Hams et al., 1994). The authority should provide an appropriate support to the different sectors of the local community to manage their waste sustainably (Timilsina, 2001). Moreover, local authorities have to consider building up partnerships with the private waste sector, commercial/industrial businesses and with the community sector to accomplish waste reduction targets (DETR, 2001). Although minimisation is considered a significant SWM option and is placed at the top of the waste hierarchy it receives very little attention by local authorities. Most local authorities have exhibited lack of commitment and support to waste minimisation (Read et al., 1998a). Yet, there is no national or local policy developed specifically to encourage waste minimisation (Read et al., 1998a).

Most of the local authorities particularly those functioning under similar conditions, e.g. economic and geographic circumstances, have shown variation in recycling rates. This reflects shortcomings in the local and national waste strategies (Audit Commission, 1997). Read (1999) indicated that the UK government did not consider the conditions of the local authorities when developing the national waste strategy. Most of local authorities face financial, personnel, technological and organisational constraints in the implementation of MSW strategy.

A survey of English local authority plans by Coopers and Lybrand (1993) identified six potential barriers to the future development of recycling,
including: lack of markets for recyclables; lack of funding; poor participation of the public in the recycling schemes; low levels of support by the local authority; the likely increase in the level of transportation in the district; shortage of appropriate sites, land or buildings. Furthermore, the Welsh Consumer Council report by Adams (1998) indicated that all local authorities in Wales reported several problems associated with providing a comprehensive recycling system, including: lack of the financial and personnel resources; public apathy; instability of recyclable markets. Recently Wright (2006) showed that many local authorities still attain poor recycling rates as a result of: a lack of commitment to change existing waste management practices; cheap landfill; inadequate resources; volatility of recycling markets; low-participation rates by the local community.

In some cases, recycling may be uneconomic option for the authority particularly, when the costs involved exceed the price of the recycled material. This is the reason for some local authorities not being committed to recycling or recycled only specific waste streams (Adams, 1998; Biswas et al., 2000). Moreover, Becklake (1991) reported another difficulty in recycling related to segregation of waste materials and stressed on the importance of separating rubbish at source. Morris et al. (2000) highlighted a significant issue in relation to the inability of local authorities to benefit from the operation of the landfill tax to promote better SWM practices arguing that:

*Although local authorities are a major stakeholder in waste management, they had little opportunity to put forward their views on the operations of the landfill tax.*

(52)
Local authorities appeared to have no control over the money collected from the landfill tax. They have no choice other than paying it to the central government. In fact, most local authorities do not have enough funds to support sustainable waste management projects (e.g. waste minimisation, recycling and composting). Thus, it was suggested that the Landfill Tax Credit Scheme (LTCS) could be used as a major source to fund these schemes and directly benefit local authorities (Morris et al., 2000).

Synergetics Lanka (2003) developed a diagram (see Figure 2.10) which could be used to help local authorities to formulate effective SWM strategies. Initially, local authorities should define the concept of SWM (e.g. what are waste streams produced? How much? What are the best options available to manage each waste stream) and link it with the development and the implementation of SWM strategy. Indeed, a range of key issues needs to be addressed and decisions need to be made in relation to SWM concept and strategy.

**Figure 2.10: SWM concept and strategy**

<table>
<thead>
<tr>
<th>SWM CONCEPT</th>
<th>SWM STRATEGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>What?</td>
<td>How to do it?</td>
</tr>
<tr>
<td>(what waste material is</td>
<td>(how can the implementation</td>
</tr>
<tr>
<td>produced?)</td>
<td>of the concept be achieved?</td>
</tr>
<tr>
<td>How much?</td>
<td>how are/ can activities be</td>
</tr>
<tr>
<td>(how much of each material</td>
<td>financed? who would do what</td>
</tr>
<tr>
<td>is produced?)</td>
<td>best?)</td>
</tr>
<tr>
<td>What to do with it?</td>
<td>The strategy discussion is</td>
</tr>
<tr>
<td>(what are the options? what</td>
<td>closely linked to the concept</td>
</tr>
<tr>
<td>option is presently</td>
<td>discussion.</td>
</tr>
<tr>
<td>implemented? what would be</td>
<td></td>
</tr>
<tr>
<td>the preferred option?)</td>
<td></td>
</tr>
</tbody>
</table>

(Source: Synergetics Lanka, 2003:4)
2.8.2 Private waste sector

More than 66.5% of MSW in the United States is managed through the private sector (Ligon et al., 2000). Similarly, the private sector has played a key role in driving the waste management industry in the UK. As a result, there is an increasing tendency to focus on the waste disposal methods used by this sector (Reamer, 1999). Larger waste companies have showed a greater commitment to the approach of sustainable development. For example, Biffa’s environmental report 1998 showed that recycling was one of the primary waste disposal options used by the company (Webster, 2000). However, DETR (1998) reported that small waste haulers still play an increasing role in the private sector in the UK although the diversity of the services provided by larger waste companies and the high cost involved in waste collection and disposal. Apotheker (1995) revealed that small waste haulers often have too limited infrastructure (e.g. lorries and waste storage bins) to provide a recycling collection service. Moreover, small waste carriers will not be able to process or sell the recycled materials.

Read (1997) reported inconsistency between the targets of the local authority and those of the private waste sector. The local authority was more committed to sustainable waste management approaches and was more aware of the negative effects and the problems resulting from landfilling waste materials. On the other hand, the majority of private waste companies were more concerned with collecting and landfilling of waste materials and had no intention of implementing more sustainable SWM alternatives, i.e.
recycling, as they recognised that such activities were costly and difficult. Gray (1997) indicated that a number of local authorities (e.g. Berkshire and Kent) were actively working with the private waste sector to lessen the reliance on landfill and encourage more sustainable alternatives.

A range of features often characterises the private sector over the public sector in terms of SWM. The private sector: normally offers the service at a lower price than the municipality as a result of the competition and the need to maximise profit; is more liable to satisfy the needs of customers; holds less procedural limitations; is more flexible in employing and terminating staff; is more reliable as the company must provide the services contracted otherwise it will face fines (Donahue, 1989; Cointreau-Levine, 2000). Hart et al. (1997) and Bel and Miralles (2003) added that the private sector was more innovative than the public sector in improving the quality of service. Ligon et al. (2000) outlined two different types of waste disposal contracts and linked them to the waste minimisation approach, including: traditional and Resource Management contracts (RM) (see Figure 2.11).

(1) Traditional contracts are normally built upon the quantities of the waste produced. In these contracts, both producer and carrier of the waste have conflicted targets. The producer of the waste has an incentive to generate less waste in order to reduce the disposal costs, while the contractor has an incentive to continuously handle large quantities of waste and thus making
more money. These incompatible incentives often hamper waste reduction activities.

(2) RM contracts are normally based on the services provided rather than the quantities of the waste generated. In these contracts, both the incentives of the producer and the contractor are consistent. The contractor can assist the producer to minimise and recover waste and at the same time get paid for both the disposal of waste and the services provided. RM – based contracts can give companies the opportunity to diversify its services, provide additional environmental services and build up longer relationships with customers. These benefits can act as prime motivations for most traditional waste companies to change to RM – based contracts (Ligon et al., 2000).

**Figure 2.11: New paradigm for disposal contracts**

(Source: Ligon et al., 2000:51)
2.9 A theoretical model of best practice for SWM in small hotels

Reviewing SWM literature and small hotels has revealed two models (Cummings, 1997; Abu Taleb, 2005) targeting specifically SWM in the hospitality industry. Cummings (1997) developed a five level hierarchy model to guide SWM practices in hospitality operations (see Figure 2.9). The waste options listed in the model followed a specific order starting with the most critical and preferable options to the least critical ones. For better SWM, hospitality operators must follow such arrangement for SWM alternatives in handling their solid waste streams. Hoteliers’ commitment to environmental goals is the first and the most significant level of the Cummings hospitality SWM hierarchy model. Moreover, level two requires hotels to implement eco-purchasing practices to eliminate waste at source and level three involves effective use of resources to minimise waste during processing and production stages. Then, level 4 necessitates reusing waste materials (e.g. refill containers) either in-house or donation to charities and finally level five requires recycling to avoid final disposal to landfill.

However, the Cummings model (1997) is effective only for those hoteliers who hold positive attitudes towards SWM practices (e.g. recycling) and want to meet their social responsibility by undertaking a responsible behaviour in managing their solid waste. However, it might not be workable for the majority of small hotel operators where the environmental responsibility is low down their list of priorities. The model did not consider any kind of motivation to involve those hoteliers who were just not interested and pressurize them to
commit to their environmental responsibilities and tackle their hotel waste sustainably.

Abu Taleb’s (2005) model targeted larger hotels in Egypt to help them manage their solid waste by recycling. The model considers nine steps, including: Incorporating recycling into hotel policies; performing a waste audit; reusing waste materials; identifying eligible materials for recycling; working with the waste carrier to get started; developing a waste separation programme throughout the hotel; purchasing recycled products; making staff aware of the hotel's waste recycling programme; involving customers. However, Abu Taleb’s model is not comprehensive enough to enable hospitality businesses to deal with their varied solid waste streams in a sustainable way. It only targets recycling and thus deals only with waste after production rather than reducing it at source.

This chapter has provided a foundation for developing a theoretical model of best practice for SWM in small hotels (see Figure 2.12). The model will be used as a theoretical framework to explore SWM practices undertaken by non-GDES small hotels in a Welsh local authority together with small hotels committed to GDES in Wales through a comparative multiple case study approach. Throughout the fieldwork, the theoretical model would be investigated and modified according to the results obtained from each case study in an attempt to develop a best practice model for the public sector to encourage better SWM practices in small hotels.
As explained earlier (see section 2.3.2), the TRA does not pay any attention to the situational factors which are more likely to influence the attitude-behaviour relationship and add to our understanding and prediction of the behaviour (Olson and Zanna, 1993). For this reason, the present study will use the concept of TPB as a theoretical underpinning to elicit and understand the attitudinal and normative beliefs of small hotel owners/managers towards SWM and identify the challenges and/or the factors inhibiting them to tackle
their SWM issues in a sustainable way via its main components: Attitude, Subjective Norm and PBC.

According to TPB, hoteliers’ intentions to perform or not to perform SWM behaviours are influenced by three main factors: Attitude, Subjective Norm and PBC. Attitude is the individual’s belief that performing the behaviour will lead to positive or negative outcomes. Subjective Norm refers to the person’s belief of whether significant referents or groups to him would approve or disapprove the performance of the behaviour (Davies et al., 2002; Davis and Morgan, 2008). For the present study, sources of social influence may include: customers, staff, competitors, local community, local authority and suppliers. PBC is about the person’s perception of how easy or difficulty to perform the behaviour (Ajzen, 1988). Better understanding of these factors (Attitude, Subjective Norm and PBC) and how they lead hoteliers to behave in certain ways in relation to SWM is of great importance in providing appropriate tools for policy makers to influence and change SWM behaviours in small hotels.

The waste hierarchy which was introduced by Waste on line (2006) represents an effective model of the potential options to handle solid waste (see Figure 2.6). The model intends basically to divert the waste away from landfill by adopting a number of sustainable SWM options, including: prevention, minimisation, reuse, recycle and energy recovery (Allen, 1994; Baker and Vandepeeer, 2004). It has been used by many local authorities
(e.g. Cardiff County Council and Sligo County Council) as a guiding principle for SWM. However, the waste hierarchy model did not consider composting organic waste. This means that for the hospitality industry which produces extensive quantities of food and organic waste to still be disposed of into landfill. Similarly, local authorities cannot largely depend on the waste hierarchy model because they should have the capability to compost organic waste on behalf of businesses and reach their governmental targets.

In the present study, the waste hierarchy developed by Waste online (2006) has been used as a guiding tool for planning SWM in small hotels. It has been modified to address the most sustainable and/or appropriate options which small hotels can use to manage their solid waste effectively. It extends to involve composting opportunity which is very essential to a small hotel business to get rid of organic waste (Schaub and Leonard, 1996; Webster, 2000). Hoteliers can undertake composting either in-house and use the fertilizers to their gardens or through a commercial composting scheme.

Incineration (mass-burn and EfW substitutes) was excluded because of its potential deleterious effects on the environment and risks to human health (e.g. heart disease, cancer and birth defects) (see section 2.7.1). Incineration destroys natural valuable resources which can be reused or recycled and even impedes the implementation of minimisation, recycling and composting alternatives which opposed the objectives of this research. It generates dangerous hazardous waste (bottom ash) which still needs to be disposed of.
Despite the recent technologies used for incineration, it still causes serious health problems as a result of the toxic emissions released from the burning process, e.g. dioxins, CO$_2$, methane (see Becklake, 1991; Gray, 1997; Friends of the Earth Cymru, 2003; Waste on line, 2006; Matthews, 2009). Consequently, a greater commitment should be made to shift waste management practices in the UK and Wales from a reliance on end-of-pipe solutions (incineration and landfill) towards material recovery by setting recycling and composting targets for local authorities (see Ares and Bolton, 2002; Friends of the Earth Cymru, 2003; Waste on line, 2006; Matthews, 2009).

The waste hierarchy developed in this research presents six waste alternatives in a descending order of priority to handle hotel waste in a sustainable and economical manner (see Figure 2.12). Firstly, a small hotel’s programme of SWM should start with prevention of waste at source through undertaking green purchasing practices, for instance to avoid unnecessary packaging. Secondly, different means have to be explored to minimise waste throughout the processing and production of raw materials for example, adopting new technology and/or changing production techniques. Thirdly, once the waste has been produced hoteliers have to endeavour to prevent it from entering the waste stream throughout reusing waste materials in-house; exploiting PTB schemes; selling durable items; giving large/heavy items to charities. Fourthly, hoteliers should segregate and recycle waste materials and maintain waste streams not contaminated with food waste. Finally,
operators should compost organic waste, e.g. food waste. Thus, better SWM planning in small hotels could result in zero-waste for disposal to landfill.

2.10 Summary

This chapter has critically analysed the related literature on solid waste management and small hotels. It reveals that small hotel sector collectively excretes a significant impact on the environment via its waste disposal into landfill. Many small hotel operators remain ignorant of the real cost of solid waste and they also have very little interest to change their SWM practices and undertake more sustainable options (e.g. recycling). Indeed, the environmental management standards (e.g. GDES) can provide a structured approach to help small hotels to implement eco-friendly practices. However, the majority of small hotels often lack the expertise and/or the resources to get certified with an EMS. Through exploring and discussing different theories (TRA, TPB and ITB) on the attitude/behaviour relationship it becomes more clearer that the implementation of eco-friendly practices (e.g. recycling) in small hotels will not only be attributed to the attitude of hotel operators but also to the barriers facing them to implement these practices.

The chapter has examined all the options listed in the waste management hierarchy together with PTB schemes which can be used by small hotel operators to manage their solid waste effectively. Although landfill represents the least preferable SWM option it is the dominant waste strategy in Wales. The landfill tax in the UK remains much cheaper in comparison to other
European counterparts and this is one of the main reasons which encourage small hotels to landfill their waste. The chapter has identified that both the local authority and private waste sectors are key players in the SWM industry in the UK. Although the public sector is more committed to the sustainable SWM approach most local authorities in Wales are facing organisational and financial barriers to achieve their recycling and composting targets. The chapter finally proposes a theoretical model of SWM in small hotels. The following chapter discusses the research approach undertaken in this study.
CHAPTER THREE:

RESEARCH APPROACH

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3.1 Introduction

This chapter gives an overview of the research approach adopted in the thesis. It identifies the thesis’s epistemology and theoretical perspective. It further looks at the research methodology and the practical approach adopted to achieve objectives two and three. Case study was used as a research strategy as it is distinguished by its ability to investigate the phenomenon of SWM in small hotels from different perspectives and focus on relationships and processes. The chapter explores case study 1 (non-GDES small hotels in a Welsh local authority) and case study 2 (small hotels committed to GDES in Wales) and rationalizes the sampling strategies and the research methods used for collecting the data in each case study. Data was collected using three qualitative research methods: semi-structured interviews, direct observation and document analysis. The chapter then looks at the qualitative analysis techniques which were used for analysing the data. It ends with a discussion of issues related to the validity, reliability, triangulation and generalisation of the results.

3.2 Research approach

- Qualitative versus quantitative research approach

The distinction between qualitative and quantitative research is a methodological issue. The decision to choose a specific methodology should be based on its suitability to answer the research questions (Bryman, 1988). Denzin and Lincoln (1998) asserted that qualitative research emphasises the process of discovering how the social meaning is constructed and stresses
the relationship between the investigator and the topic studied. Conversely, quantitative research is based on the measurement and the analysis of causal relationships between variables. Berg (2001) discriminated between qualitative and quantitative research arguing that qualitative research referred to the meanings, concepts, definitions, characteristics, metaphors, symbols and descriptions of things, while quantitative research referred to the measures and counts of things.

Qualitative and quantitative research approaches differ basically in some major areas, including: their analytical objectives; types of questions posed; types of data collection methods used; types of data produced; degree of flexibility in study design (see Table 3.1) (Mack et al., 2005). Snape and Spencer (2003) indicated that qualitative research is a naturalistic/interpretative approach concerned with understanding the meaning people give to the phenomena within their social setting. They outlined a number of key elements which distinguish the qualitative approach, among these: it is the approach which provides a deeper understanding of the social world; it is based on a small scale sample; it uses interactive data collection methods, i.e. interviews; it allows new issues and concepts to be explored.
Table 3.1: Comparison of quantitative and qualitative research approaches

<table>
<thead>
<tr>
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<th>Quantitative</th>
<th>Qualitative</th>
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<tbody>
<tr>
<td><strong>General framework</strong></td>
<td>Seek to confirm hypotheses about phenomena</td>
<td>Seek to explore phenomena</td>
</tr>
<tr>
<td></td>
<td>Instruments use more rigid style of eliciting and categorising responses to questions</td>
<td>Instruments use more flexible, iterative style of eliciting and categorizing responses to questions</td>
</tr>
<tr>
<td></td>
<td>Use highly structured methods such as questionnaires, surveys and structured observation</td>
<td>Use semi-structured methods such as in-depth interviews, focus groups and participant observation</td>
</tr>
<tr>
<td><strong>Analytical objective</strong></td>
<td>To quantify variation</td>
<td>To describe variation</td>
</tr>
<tr>
<td></td>
<td>To predict casual relationships</td>
<td>To describe and explain relationships</td>
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<td>To describe characteristics of a population</td>
<td>To describe individual experiences</td>
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<td></td>
<td>To describe group norms</td>
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<tr>
<td><strong>Question format</strong></td>
<td>Closed – ended</td>
<td>Open – ended</td>
</tr>
<tr>
<td><strong>Data format</strong></td>
<td>Numerical (obtained by assigning numerical values to response)</td>
<td>Textual (obtained from audiotapes, videotapes and field notes)</td>
</tr>
<tr>
<td><strong>Flexibility in study design</strong></td>
<td>Study design is stable from beginning to end</td>
<td>Some aspects of the study are flexible (for example, the addition, exclusion or wording of particular interviews questions)</td>
</tr>
<tr>
<td></td>
<td>Participant responses do not influence or determine how and which questions researchers ask next</td>
<td>Participant responses affect how and which questions researchers ask next</td>
</tr>
<tr>
<td></td>
<td>Study design is subject to statistical assumptions and conditions</td>
<td>Study design is iterative, that is, data collection and research questions are adjusted according to what is learned</td>
</tr>
</tbody>
</table>

(Source: Mack et al., 2005:3)

Previous studies (Groundwork, 1995; Meritt, 1998) reported a number of problems in investigating environmental issues in small businesses using questionnaire surveys. The most important of these is that the results of the survey tend to be inconclusive either because of the low response rate or misunderstanding of the questions. Moreover, “there is a tendency for
consumers to overstate their interest in, and concern for, the environment in questionnaire surveys and therefore to create the impression of being and acting in an environmentally-conscious way” (Davies et al., 2002:44). Therefore, respondents tend to give answers which may not be accurate but consider agreeable from the social standpoint (Malhotra, 1993).

Accordingly, I decided to use a qualitative approach to accomplish the overall aim of the study as most of the business and environment literature has largely focused on quantitative studies that lack deeper theoretical analyses (Stokes, 2000). The qualitative approach has helped me to get a deeper understanding of the issues being investigated. It is an approach that has enabled the research questions to be answered by providing a rich picture on the actual conditions surrounding SWM practices in non-GDES and GDES small hotels. As Gray (2004) showed, qualitative research is distinguished as a highly-contextual approach where data is gathered over long periods and in natural real life settings. It can answer how and why questions rather than giving a brief view about the phenomenon studied.

I started the research process by identifying the research problem, setting out the aim and objectives of the study, developing five research questions, reviewing the related literature, selecting the research methodology and the methods that will be effective in answering the research questions, gathering the data from the field using multiple qualitative methods and finally analysing the data. I tried to understand and make sense of the data collected in which
a best practice model for the public sector to encourage better SWM practices in small hotels along with a conclusion have been drawn based on the participants’ views regarding the issues being investigated.

- Inductive versus deductive research approach

It is important also to classify the research approach in terms of whether it is inductive or deductive. Saunders et al. (2003) differentiated between these two types of the research design. First, the deductive approach – known as testing a theory, in which the researcher develops a theory or hypotheses and designs a research strategy to test the formulated theory, second, the inductive approach – known as building a theory, in which the researcher starts with collecting data in an attempt to develop a theory. A researcher should explain clearly which approach is being followed in his or her research project. Marshall (1997) illustrated the theoretical use of both terms (inductive and deductive) as follows:

> When researchers first begin to open up any new line of enquiry there will be no useful theories available from which to deduce propositions for testing. Knowledge has to begin with collecting facts and then trying to find some order in them. This is known as induction. Deduction is the technique by which knowledge develops in more mature fields of enquiry. It involves a sort of logical leap. Going a stage further than the theory, data is then collected to test it.

(Marshall, 1997:17)

The current study is shaped with using inductive research design. Saunders et al. (2003) noted that the inductive approach gives the chance to have more explanation of what is going on. I have started the research process by exploring and collecting the data from different sources and by using multiple
sources of evidence: semi-structured interviews, direct observation and document analysis in an attempt to develop a best practice model for SWM in small hotels. The secondary sources of data used in this research, involving: critically reviewing previous research, reports, records and documents on SWM and small hotels, while primary data were collected by interviewing the owner/manager of non-GDES and GDES small hotels; executives of the public and private waste sector and Arena Network officials. Easterby-Smith et al. (2002) and Gray (2004) indicated that qualitative research is often associated with inductive research designs in which a range of methods are used to collect the data and explore the problem from different perspectives.

3.3 Theoretical approach
In an attempt to distinguish the research approach used in this study further than qualitative and quantitative approaches, Crotty (1998) asserted that the research should be distinguished with epistemological and theoretical perspectives in which a researcher could not claim to be both objectivist and constructionist at the same time. In this research, Crotty (1998) is used as a guide to form the thesis’ theoretical approach. The views, beliefs and thoughts of small hotel owners/managers and the key representatives of both public and private waste sectors regarding SWM issues in small hotels were reached by following a research string of constructionism – interpretivism/phenomenology (see Figure 3.1). The choice and the justifications behind selecting this approach will be discussed in detail in the following sections.
3.3.1 Epistemology

Crotty (1998:8) asserted that “epistemology is a way of understanding and explaining how we know what we know”. Maynard (1994:10) indicated that:

Epistemology is concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both adequate and legitimate

Epistemology seeks to answer two different questions including: How do we know the world? What is the relationship between the inquirer and the known? (Denzin and Lincoln, 1998). Dawson (2002) added that epistemology
is the study of knowledge and is more concerned with identifying the origin of knowledge.

3.3.1.1 Constructionism

Constructionists perceive reality as if it is socially constructed (Schwandt, 1998, Saunders et al., 2003). Constructions exist in the mind of individuals and the role of the inquirer is to understand, reconstruct, analyse and critique participants’ views in a way that leads to construct meaningful findings/outcomes (Guba and Lincoln, 1989). Shadish (1995:67) indicated that social constructionism refers to “constructing knowledge about reality, not constructing reality itself”. This epistemology rejects the objectivists’ perspective of knowledge (Crotty, 1998) implying that both the subject and the object are actively participated in the creation of the meaning (Guba and Lincoln, 1998).

In this sense, people tend to construct meaning in different ways even when looking at the same phenomenon (Crotty, 1998). In other words, the constructionist paradigm is “a perspective that emphasizes how different stakeholders in social settings construct their beliefs” (Schutt, 2006:44). The aim of the researcher is to understand and reconstruct people’s beliefs trying to reach a common consensus. As such constructions are opened to new interpretations as the information increases (Carr and Kemmis, 1986). Constructionism and phenomenology are interconnected in a way that one
cannot be phenomenological and at the same time owes to objectivist or subjectivist epistemology (Crotty, 1998).

As explained, constructionists believe that reality is constructed and there is no truth without mind. Thus, I had undertaken constructionism as an epistemological stance which allowed me to engage with the social world of small hotels trying to understand and construct the reality from the perspective of different stakeholders who experienced or lived the phenomenon being studied. All participants were carefully selected and challenged to reach a high level of consensus regarding SWM issues being investigated. A common perspective was achieved using effective method of analysis and interpretation (a grounded theory approach involving the constant comparative method).

3.3.2 Theoretical perspective

Crotty (1998:3) defined the theoretical perspective as:

*The philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria.*

The research methods literature has informed a number of research philosophies in which the researcher can use to shape his methodology, including: positivism, post-positivism and interpretivism. It should be clear that the distinction between these philosophical positions did not mean that there was one stance better than the others but they all better in doing different things (Saunders *et al.*, 2003).
3.3.2.1 Interpretivism

Social reality can be viewed as being constructed. It is "based on a constant process of interpretation and reinterpretation of the intentional, meaningful behaviour of people – including researchers" (Smith, 1989:85). Thus, depiction and/or interpretation of the social inquiry is a constructive process and consequently the researcher cannot be isolated from the phenomenon investigated (Smith, 1989). For interpretivists, the world is too complex to be reduced to a set of observable laws and generalizability is a less important issue than understanding the real conditions behind the reality (Gray, 2004). The main goal of the interpretivist is to understand the meaning of the social situation from the point of view of those who live it. The inquirer must interpret the event, understand the process of meaning construction and reveal what meanings are embodied in people’s actions (Schwandt, 1998).

A part from constructionism, it is important for the interpretivists to find out the subjective meanings or realities which stimulate people’s actions in order to understand and make sense of these actions in a way that is meaningful for the research participants (Saunders et al., 2003). A researcher perceived the data, which he collected with his own sense and interpreted it by his minds. So any researcher could not be certain that he realised the reality properly or his understanding was more valid than the others (Schutt, 2006). Thus, there is not only one reality in social world but researchers understand issues in different meanings (Rubin and Rubin, 1995).
Adopting an interpretivism paradigm, I entered the social world of small hotel owners/managers, public and private sector stakeholders and other key informants to engage with them and collect in-depth information regarding SWM issues in GDES and non-GDES small hotels and to understand what stimulated their SWM behaviours. From the data I collected I have made interpretations to serve the overall purpose of the research which was intended to help small hotels to reach a stage of zero-waste disposed into landfill.

### 3.3.2.2 Phenomenology

Phenomenology is “the study of lived, human phenomena within the everyday social contexts in which the phenomena occur from the perspective of those who experience them” (Titchen and Hobson, 2005:121). It implies that people’s experience of social reality provides a basis to understand the meaning of that reality. Hence, the researcher should work towards having new meanings and increasing his understanding of the phenomena from the social world (Gray, 2004). The phenomenological approach focuses on exploring how human beings experience the phenomenon, i.e. how they perceive it; describe it; make sense of it. To reach such understanding, the researcher should conduct in-depth interviews with people who live with or have directly experienced the phenomenon (Patton, 2002).

Titchen and Hobson (2005) identified two different approaches to look at the phenomenon. Firstly, a direct approach, in which the phenomenon can be
investigated by exploring human consciousness in a direct way, the researcher conducts interviews with the interested stakeholders to reach their experiences of the phenomenon. Secondly, an indirect approach, in which the observer gets into the social context of the phenomenon to live it personally with the participants in order to notice and identify the common meaning and practices. Phenomenology relies on personal experiences to explore and understand the existing issue. This inductive approach tries to find the internal logic of the subject (Gray, 2004). Easterby-Smith et al. (1991) outlined the major differences between positivism and phenomenological stances (see Table 3.2).

In this respect, the issues of SWM were treated as a phenomenon and investigated from different perspectives, including those of: non-GDES small hotels, GDES small hotels, public and private sector waste carriers and key informants of GDES in Arena Network. The phenomenon of SWM in small hotels was investigated in a direct way using multiple-qualitative research methods to explore and understand people’ experiences regarding the issues being investigated, these include: semi-structured interviews, direct observation and document analysis. Using such qualitative methods allowed me to interact effectively with the stakeholders and obtain in-depth views from different angles regarding SWM issues in small hotels. I then attempted to form a meaning of such views and find out common perspectives from which a conclusion and a best practice model could be made to add a contribution to SWM literature.
Phenomenology is a theoretical perspective that uses relatively unstructured data collection methods and follows an inductive approach for collecting data. It is characterised by its ability to get issues that are not involved originally in the aim of the research. This perspective also has an advantage of generating thick descriptions of people’s experiences or perspectives within their natural settings (Gray, 2004).

| Table 3.2: Summary of the major features of positivism and phenomenology research philosophy |

<table>
<thead>
<tr>
<th></th>
<th>Positivist paradigm</th>
<th>Phenomenological paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic beliefs</strong></td>
<td>- The world is external and objective</td>
<td>- The world is socially constructed and subjective</td>
</tr>
<tr>
<td></td>
<td>- The observer is independent</td>
<td>- The observer is a party to what is being observed</td>
</tr>
<tr>
<td></td>
<td>- Science is value-free</td>
<td>- Science is driven by human interests</td>
</tr>
<tr>
<td><strong>The researcher should</strong></td>
<td>- Focus on facts</td>
<td>- Focus on meaning</td>
</tr>
<tr>
<td></td>
<td>- Locate causality between variables</td>
<td>- Try to understand what is happening</td>
</tr>
<tr>
<td></td>
<td>- Formulate and test hypotheses (deductive approach)</td>
<td>- Construct theories and models from the data (inductive approach)</td>
</tr>
<tr>
<td><strong>Methods include</strong></td>
<td>- Operationalizing concepts so that they can be measured</td>
<td>- Using multiple methods to establish different views of a phenomena</td>
</tr>
<tr>
<td></td>
<td>- Using large samples from which to generalise to the population</td>
<td>- Using small samples researched in depth or over time</td>
</tr>
<tr>
<td></td>
<td>- Quantitative methods</td>
<td>- Qualitative methods</td>
</tr>
</tbody>
</table>

(Source: Easterby-Smith et al., 1991)
3.4 Research methodology

Crotty (1998:3) defined research methodology as:

*The strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes.*

The choice of the research methodology is influenced by the researcher’s theoretical perspective and also his attitude towards the ways in which the data will be used (deductive or inductive approach) (Gray, 2004). It should also explain the rationale behind the selection of the methods adopted (Crotty, 1998). The present study has undertaken case study as a research methodology to reach the overall aim of the research. Two case studies were formed to investigate SWM issues in small hotels. The justifications for the selection of case study methodology and the research methods are explained in detail in the following sub-sections. The objectives of each case study along with the procedures and the methods used to fulfil such objectives are summarised in Table 3.3 and Figure 3.2.
### Table 3.3: Research methodology stages

<table>
<thead>
<tr>
<th>Case study 1: non-GDES small hotels in a Welsh local authority</th>
<th>Case study 2: small hotels committed to GDES in Wales</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
<td>To identify the challenges of adopting sustainable SWM practices in small hotels and provide some potential solutions.</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>A- To investigate SWM practices in non-GDES small hotels in a Welsh local authority and explore the support available to them from the local authority and the private waste sector to manage their solid waste in a sustainable way.</td>
</tr>
<tr>
<td></td>
<td>A- To explore the attitudes of the owners/managers of GDES small hotels regarding the implementation of more sustainable SWM practices and comparing them to the non-GDES small hotels studied in the second objective.</td>
</tr>
<tr>
<td><strong>Procedures</strong></td>
<td>1- Develop a case study of non-GDES small hotels (those having 30 rooms or less) in a Welsh local authority.</td>
</tr>
<tr>
<td></td>
<td>2- Conduct a series of interviews with non-GDES small hotel owners/managers who participated in the designated case study to identify their SWM practices, their attitudes and the challenges facing them in implementing more sustainable SWM practices, the potential support and the pressure needed to influence them to undertake sustainable practices.</td>
</tr>
<tr>
<td></td>
<td>3- Undertake a series of interviews with the public and private waste sectors to explore their SWM operations and identify how far they can support small hotels to manage their solid waste in a sustainable way.</td>
</tr>
<tr>
<td></td>
<td>4- Revisit a number of non-GDES small hotels who participated in the case study to register if there is any changes happened to their SWM practices after the public sector had provided a recycling system for commercial businesses.</td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td>Semi-structured interviews</td>
</tr>
<tr>
<td></td>
<td>Direct observation</td>
</tr>
<tr>
<td></td>
<td>Document analysis</td>
</tr>
<tr>
<td></td>
<td>1- Develop a case study of small hotels (those have 30 rooms or less) that committed to GDES in Wales.</td>
</tr>
<tr>
<td></td>
<td>2- Conduct a series of interviews with GDES small hotel owners/managers who participated in the developed case study to explore their SWM practices and to identify their attitudes and the motivations beyond the implementation of more sustainable SWM practices.</td>
</tr>
<tr>
<td></td>
<td>3- Undertake a number of interviews with key informants in Arena Network Organisation to identify how far they support, influence and control GDES small hotels regarding SWM practices.</td>
</tr>
<tr>
<td></td>
<td>4- Develop a cross-case analysis between the two cases studied with the aim of developing a best practise model for the public sector to encourage better SWM practices in small hotels.</td>
</tr>
</tbody>
</table>
3.4.1 Practical approach – Objective two

3.4.1.1 Case study – research strategy

Robson (2002:178) defined case study as:

“A strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence.

This study has used case study as a research strategy to explore SWM practices in GDES and non-GDES small hotels. The choice of a case study research strategy had been attributed to a number of reasons. Case study
has a distinctive advantage over other research strategies when “how” or “why” questions are being posed to discover a current phenomenon and when the researcher has little or no control over the events (Yin, 2003). It offers the opportunity to “explain why certain outcomes may happen – more than just find out what those outcomes are” (Denscombe, 1998:31). This is actually very important for the present study to identify why GDES and non-GDES small hotels may or may not engage in proactive SWM behaviours. Gray (2004) confirmed that a case study approach is particularly useful in revealing the casual relationships between the phenomenon and the context in which it takes place.

Moreover, the case study enables the researcher to use multiple sources of data and a variety of research methods to explore the research questions which, in turn, foster the validation of data through triangulation (Denscombe, 1998). Thus, any findings or conclusions are likely to be more compelling and accurate (Yin, 2003). This has also supported the use of case study as a research strategy for the current study. The case study strategy is best for gaining a deeper understanding of the research being investigated (Morris and Wood, 1991). However, the case study approach has not been widely accepted as a reliable, objective and legitimate research strategy. One of the most critical criticisms directed to this approach related to the difficulty in generalizing the findings to a larger population (Yin, 1994; Thomas, 2003).

It is essential to define a boundary around the phenomenon – what to include and what to exclude (Stark and Torrance, 2005). Yin (2003) proposed four
different types for case study designs based on a $2 \times 2$ matrix. These types include: single-case (holistic) designs; single-case (embedded) designs; multiple-case (holistic) designs; multiple-case (embedded) designs. A major distinction has been made between single and multiple case study designs. It is important to note that holistic designs are based on single unit of analysis whereas embedded cases include multiple unit of analysis.

The undertaking of multiple-case study designs is expensive and time-consuming (Yin, 2003). However, this study adopted multiple case (embedded) designs to investigate SWM practices in two different cases and/or conditions: GDES and non-GDES small hotels (see Figure 3.3). This can be justified using two main reasons. First, the evidence and conclusions coming out from multiple-designs are more reliable and convincing than those based on single-case designs and thus the findings are more likely to be generalized (Yin, 2003). Second, the assumptions that there are different types of conditions surrounding SWM in small hotels and there is a need to have sub-units of cases to cover all different conditions and practices.
According to the purpose of the research, Gray (2004) explained three different forms of study: exploratory, explanatory and descriptive. Robson (2002) indicated that the purpose of the enquiry may change over time. This reflects that the research project may have more than one purpose at the same time. An exploratory study intends to explore “what is happening; to seek new insights; to ask questions and to assess the phenomena in a new light” (Robson, 2002:59). It is valuable particularly when there is very little information known about the phenomenon. On the other hand, explanatory study aims to find out the causal relationships between variables (Saunders
et al., 2007). Finally, descriptive study seeks to provide a clear picture about the phenomenon as it already occurs (Hedrick et al., 1993).

The current research is based on two case studies. The first, exploratory, seeks to discover SWM practices in non-GDES small hotels and explore the support available to them from the public and private sector’s waste carriers. The second, explanatory, intends to identify the causal relationships and the motivations which make small hotels committed to GDES tend to manage their solid waste in a sustainable way.

3.4.1.2 Case study 1: non-GDES small hotels in a Welsh local authority

This research was undertaken in Wales because solid waste was considered as one of the biggest environmental problems in Wales (WAG, 2002). Wales has undertaken landfill as a major waste strategy (Cohen, 2006a). Moreover, the hospitality industry in Wales was dominated with small hospitality businesses (WTB, 2000; Morrison, 2002), which significantly impact the environment through undertaking inappropriate waste disposal methods (landfill). Lastly, Wales was the area where GDES was born to support Welsh businesses to undertake environmentally-friendly practices.

A case study of small hotels (those having 30 rooms or less) was developed in a Welsh local authority to investigate in-depth the attitudes and the challenges facing hoteliers to adopt sustainable SWM practices. Using such strategy had enabled me to use multiple research methods, including: semi-
structured interviews, direct observation and document analysis, and thus looking at the problem from different perspectives. Moreover, to understand the whole aspects of SWM practices in non-GDES small hotels, it was essential to examine the role of the waste carriers (public and private waste sectors) and explore the inter-relationships with non-GDES small hotels. Denscombe (1998) reported that the case study approach is characterised by its ability to focus on relationships and processes, which is of great importance to the current research. He added that it can be effective in analysing the complexity of the situation better than other research strategies. It tends to be holistic rather than dealing with isolated factors.

The main rationale behind selecting the Welsh local authority, the main focus of the study, to develop a case study of non-GDES small hotels is attributed to a number of factors, including: it has a large number of small hotel businesses, has the biggest Material Recycling Facility (MRF) in Wales and has obtained the largest funding compared to other local authorities from WAG, in addition to funding granted from the EU. However, the local authority has not got a recycling system for commercial businesses. Moreover, even the domestic recycling system did not cover a lot of areas in the locality.

3.4.1.3 Sampling for case study 1

Whether probability or non probability sampling strategy is chosen, the sampling frame should be relevant, complete, precise and up-to-date
(Denscombe, 1998). Probability sampling implies that each one in the population has an equal chance to get involved in the sample (Corbetta, 2003). While a non-probability/purposive approach reflects that the chances of each person to be chosen in the sample is unknown but the features of the population are used as the main measure for selection. A purposive approach is well-suited to small-scale and in-depth studies (Ritchie et al., 2003).

Four common methods can be used to identify a non-probability sampling: availability sampling, quota sampling, purposive sampling and snowball sampling. These methods are extremely useful under certain conditions, particularly when the research question seeks an in-depth investigation of a small population or when the researcher is performing a preliminary, exploratory study (Schutt, 2006). This research adopted a non probability sampling strategy using purposive and snowballing techniques which enabled me to select and study cases that would serve the purpose of the study and answer the research questions. Case study 1 “non-GDES small hotels in a Welsh local authority” involved three main stakeholders: non-GDES small hotels, local authority and private waste sector. Table 3.4 identifies the Number of respondents and the sampling technique for each stakeholder.
## Table 3.4: No. of respondents and sampling techniques used in case study 1

<table>
<thead>
<tr>
<th>Key stakeholders of case study 1</th>
<th>No. of respondents</th>
<th>Sampling techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Non-GDES small hotels</td>
<td>9</td>
<td>Purposive sampling</td>
</tr>
<tr>
<td>- Local authority</td>
<td>4</td>
<td>Snowball sampling</td>
</tr>
<tr>
<td>- Private waste sector</td>
<td>9</td>
<td>Purposive sampling</td>
</tr>
<tr>
<td>- Non-GDES small hotels after 18 months</td>
<td>4</td>
<td>Purposive sampling</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

- **Sampling from non-GDES small hotels in a Welsh local authority**

A purposive sampling approach was used to identify a sample from non-GDES small hotels in a Welsh local authority. With the purposive sampling, the researcher has to use personal judgement to select cases that will best meet the research questions and objectives (Saunders *et al.*, 2003). Rubin and Rubin (1995) named three main guidelines for selecting a purposive sample. The researcher should select the informants who are knowledgeable about the issues being investigated, willing to talk and representative of the range of points of view. As Schutt (2006:155) asserted about purposive sampling:

> Each sample element is selected for a purpose, usually because of the unique position of the sample elements. Purposive sampling may involve studying the entire population of some limited group (directors of shelters for homeless adults) or a subset of a population (mid-level managers with a reputation for efficiency). Or a purposive sample may be a “key informant survey”, which targets individuals who are particularly knowledgeable about the issues under investigation.
The number of rooms was used as the primary criterion in the present study to classify hotels as being small/medium or large. This is because number of rooms is the most conventional and accepted measure in the hotel industry as indicated by Garcia-Falcon and Medina-Munoz (1999). For the current study, small hotels were identified as those operations having 30 rooms or less which was consistent with the categorization of small hotels addressed by Glancey and Pettigrew (1997), Main et al. (1997) and Baker et al. (2000) (see section 2.2.1). Also, this gave the opportunity to as many small hotels as possible to be involved in the research boundary and get benefit from the current study in relation to managing their hotel waste effectively and at the same time helping in reducing the environmental impact of waste disposal into landfill from the small hotel sector. Participants were then selected as those who had experienced the phenomenon being investigated, willing to cooperate and were able to communicate their experiences without any bias and embarrassment.

Initially, a total of 28 non-GDES small hotels was recognised through the websites (www.visitcardiff.info and www.visitwales.com, accessed 210406) in the Welsh local authority which constituted the main focus of the study. Among them six hotels were omitted from the list as they did not meet the purpose of the study because they had either closed down or had changed the nature of their business to a pub. Surprisingly, their details still existed on the Internet as being hotels. Respondents were contacted using two different means: First, a fax letter was organised giving a brief introduction about the
researcher (i.e. name and organisation), describing the aim of the research, showing the importance of the study to small hotels and the environment and finally asking the respondent to take part in the case study (see Appendix 1). The letter was printed on Welsh School of Hospitality, Tourism and Leisure Management headed paper and authorised with my signature. Second, within 24 hours of sending the letter to the targeted person the hotelier was contacted by telephone to arrange a time for interview, if accepted.

I conducted six interviews with non-GDES small hotel owners/managers. It was recognised that getting access to small hotel operators was very difficult as I had targeted thirteen small hotel owners/managers but, unfortunately, they refused to be interviewed because they were not interested in helping my research. Thus, I looked at different ways to access small hotels. For example, in an attempt to encourage small hotel owners/managers participation in the case study, I asked my supervisors and some UWIC colleagues if they could help to get access to them and this technique was successful in reaching three other hoteliers. Consequently, of the 22 small hotels, nine participants were interviewed which represented 41% of the targeted population. Among these nine, four interviewees were re-interviewed 18 months after the initial interviews with them following the introduction of enhanced SWM facilities by the local authority.

- **Sampling from local authority’s waste management officers**

A non-probability approach using a snowballing technique was used to sample from the local authority’s waste management officers. The
snowballing technique is well-suited for purposive sampling (Denscombe, 1998). With the snowballing technique, the sample is formed as a referral in which each participant is asked to suggest other people who could potentially take-part in the study. Also, this type of sampling is often used with very small-sized samples such as case study or if there is a need to choose participants that are well-informed (Neuman, 2000). The researcher can approach the new person using the name of the nominator as a source of reference to increase his/her credibility (Denscombe, 1998).

Snowball sampling is often used to find and recruit hidden populations, that is, groups not easily accessible to researchers through other sampling strategies.

(Mack et al., 2005:6)

I was introduced by my supervisor Professor David Botterill before leaving UWIC to one of his colleagues who worked as a one of the local authority’s waste management team. I conducted an interview with Professor Botterill’s friend and then I asked the interviewee to suggest some other potential respondents who might be interested in the research topic and could help it further.

- **Sampling from private waste sector**

Similarly, a purposive sampling approach was used to select a sample from the private waste sector. A total of 22 waste companies were identified by typing “waste companies + the name of the local authority” or “waste companies + UK” in the Google search engine and also by looking at the Yellow Pages Directory. Of the 22 waste companies, seven companies were
omitted from the sampling frame as they would not fulfil the purpose of the study because they did not provide any waste collection services in the local authority, the main focus of the case study. Actually, nine out of 15 private waste companies’ executives were interviewed providing a response rate of 60% of the whole population which seemed to be very satisfactory. The rest of the list (six waste companies’ executives) refused to be interviewed reasoning that they were too busy or not interested.

3.4.1.4 Research methods

Crotty (1998:3) defined research methods as: “The techniques or procedures used to gather and analyse data related to some research questions or hypotheses”. Yin (2003) identified six sources of evidence for case studies: documents, archival records, interviews, direct observation, participant-observation and physical artefacts. Among these, a boundary was drawn around the three methods used in the current research which include: semi-structured interviews, direct observation and document analysis to distinguish them from other sources of evidence indicated by Yin (see Figure 3.4).
3.4.1.4.1 Semi-structured interviews

“The qualitative research interview is a construction site for knowledge. An interview is literally an inter view, an inter-change of views between two persons conversing about a theme of mutual interest” (Kvale, 1996:14). Qualitative interviews are effective research instruments for getting deeply insights about how people experience, feel and interpret the social world (Mack et al., 2005).

The research methods literature (e.g. May, 1997; Saunders et al., 2003) has largely identified three different forms of interviews (structured, semi-
structured and unstructured interviews). Dawson (2002) argued that the semi-structured interview is perhaps the most widespread type used in qualitative research. In this kind of interview, the researcher pre-establishes a set of questions to know more information about specific issues and sometimes identify new issues that were not originally part of the interview. It is characterised by its flexibility in which the researcher can add or remove questions from the schedule based on the results of each interview. Also, Saunders et al. (2003) indicated that the investigator is not requested to follow a specific order of questions but can vary the order depending on the flow of the conversation.

Interestingly, semi-structured interviews give the researcher the opportunity to ‘probe’ for more detailed information by asking the respondent to give more clarification to his answer. This is significant for those who adopt a phenomenological approach because a prime concern is focused on understanding the meanings that the respondents ascribe to various phenomena (Saunders et al., 2003). However, the interview is influenced by the level of awareness and the emotional state of the interviewee, so that a possible distortion to data may occur as a result of the interviewee being anxious or annoyed at the time of the interview (Patton, 2002). To avoid having biased data, the researcher should maintain his own knowledge and let the interviewee ‘flow’ (May, 1997).
To reach the second objective of the present study (see section 1.3) a series of interviews were held with non-GDES small hotel owners/managers and the key representatives of the public and private waste sectors, as shown below.

First, nine interviews were conducted with non-GDES small hotel owners/managers in a Welsh local authority to identify their SWM practices. A list of questions was developed in advance to explore the current methods used by hoteliers for disposing of hotel waste and determine their attitudes towards prevention, minimisation, reuse, recycle and compost hotel waste. Furthermore, the questions attempted to find out the barriers to the implementation of sustainable SWM practices and the potential support needed to help small hotel operators to reduce and recycle their waste. The interviews were concerned also with identifying what could pressurize small hotel operators to consider sustainable SWM options. A schedule of the interview questions is included in the thesis (see Appendix 3).

Second, four interviews were conducted with the local authority’s waste management officers to explore the locality’s SWM system and identify how far the council could support small hotels in undertaking the full ranges of sustainable SWM options outlined in the theoretical framework (see Figure 2.12). A pattern of questions was developed in advance to guide the conversation with the respondents (see Appendix 4).
Third, the private waste sector plays a major role as well as the public sector in collecting, handling and disposing of MSW in the UK. Therefore, it was very important to explore their contribution to sustainability issues and the impact they could have on SWM in small hotels. Nine interviews were held with the representatives of the private waste companies to explore the SWM options adopted in handling waste materials together with the barriers and the motivations beyond recycling commercial waste (see Appendix 5).

Moreover, four follow-up interviews were undertaken with non-GDES small hotel owners/managers 18 months after the initial interviews with them. The aim of these interviews is to evaluate and register any changes happened to SWM practices in non-GDES small hotels as the local authority had introduced a recycling system for commercial businesses, whereas previously it had only been available for domestic waste. The local authority had provided the mixed recycling bag scheme for commercial businesses one month after the initial interviews with the hoteliers. So the recycling service was already available to small hotels either through the public or private waste sectors and they did not have any real excuse then for not making recycling (see Appendix 8).

At the beginning of each interview, I introduced myself to the interviewee stating my name, position, institution and then explained the aim of the research to formalise the interviewee with the research topic. This brief introduction was followed by asking the interviewee about his/her position
and responsibilities as a way of collecting more detail about him/her and at the same time creating a good atmosphere to conduct the interview and facilitate the interaction with the interviewee.

Most of the questions asked were open-ended in nature. The questions were formulated based on varied sources, including: SWM literature, the council’s waste strategy and the Welsh waste strategy (Wise about Waste 2002), along with my background on the topic studied. All respondents exhibited diverse experience in the research topic. All interviews took place within the interviewees’ organisation and lasted between 45 – 90 minutes. To remember the conversation, all interviews were recorded with a permission of each participant. Also, hand-written notes of the interviewees’ responses were taken throughout the interview. I assured all interviewees about the confidentiality of the information given.

At the end of the interview, all respondents were asked to give me permission to conduct direct observation and take some photographs, for example, to small hotel waste storage areas and the MRF of the public and private waste sectors. Finally, they all were thanked deeply and promised to be supplied with a report of the research results. All interviews were transcribed, analysed and discussed in the next chapters. An example of interview transcription has been shown in appendix 9.
3.4.1.4.2  Direct observation

This type of observation implies that the observer watches and listens to events directly. The observation can be guided through a set of questions that an investigator attempts to answer (Thomas, 2003). In fact, visiting the field to collect the data through other evidence, i.e. interviews, creates an opportunity to make direct observation (Yin, 2003). Patton (2002) identified several advantages of using the direct observation method. This technique enables the observer to: understand and capture the setting within which people interact; see and discover things that people in the location have not paid any attention to; get things that people will be reluctant to talk about in an interview, i.e. critical issues; go beyond the selective views of people (i.e. participants in interviews); being open, inductive and discovery-oriented to help the observer to obtain great experience about the phenomenon. Thomas (2003) added that direct observation has the advantage of getting the information from natural or unplanned events.

However, the direct observation method also has some limitations, including: the distortion of data because people’s behaviour is subject to change particularly when they feel that they are being observed; information is limited to what is observed in the setting; the observation only focuses on the external behaviour as the observer cannot explore people’s feelings and perspectives (Patton, 2002).
In fact, using the interview technique helped me to undertake a walk-through direct observation method as a source of evidence for collecting the data for the present study. In respect of non-GDES small hotels, all hoteliers interviewed were asked to allow me to witness the hotel waste storage area and take some photographs to waste storage bins, recycling bags, landfill bags and composter bins. During the observation, I could see the volumes of waste produced by each hotel which took-part in the case study; the way they stored and disposed of hotel waste; the cleanliness, health and safety issues of their waste storage areas.

In relation to the public and private sectors’ waste carriers, I had a tour of their MRF accompanied by one of their waste management team. Throughout the observation I watched the way of processing, sorting and baling of different waste streams in their recycling plants. It was useful to see and assess the infrastructure of the two sectors. Also, the photographs which were taken during the observation were beneficial in highlighting the features of each unit and complementing the information gathered through the interviews.

3.4.1.4.3 Document analysis

A document is any substance that gives information about the investigated phenomenon and exists independently of the researcher’s actions. It is normally produced for specific purposes other than those of the research but it can be used by the researcher for cognitive purposes, e.g. letters, newspapers, diaries and websites. (Corbetta, 2003). Yin (2003:87) asserted
that “For case studies, the most important use of documents is to corroborate and augment evidence from other sources”. Corbetta (2003) identified a number of advantages of the documents over other research methods. (a) It is a non-reactive technique where the information given in a document is not subject to a possible distortion as a result of the interaction between the researcher and the respondent, e.g. as in interviews; (b) it helps the researcher to study the past; (c) it is a cost-effective method as the information has already been produced (Denscombe, 1998). However, documents may have some limitations in terms of the accuracy and completeness of the data (Patton, 2002).

In the present study, a number of documents were critically analysed, including: the Council’s waste strategy 2005; the Welsh waste strategy (Wise about waste 2002); the website of the local authority; the websites of the larger waste companies which took part in the study. Such documents were of great value to examine the study from different angles and enrich the researcher’s knowledge about the waste strategies and plans of both public and private waste sectors before conducting the interviews with them. This method enabled me to highlight and pursue any contradiction in the evidence emerging as a result of the inconsistencies between the data cleared in the documents and the interviews with the associated stakeholders. Yet, non-GDES small hotels did not maintain any records for waste management, some of them only keep Waste Transfer Notes (WTN).
3.4.2 Practical approach – objective three

3.4.2.1 Case study 2: small hotels committed to GDES

For the purpose of the current research, the study focuses on studying small hotels in the context of Wales where GDES was born. Consequently, this case study has concentrated on GDES which provides a real opportunity for small hotels, particularly in Wales, to improve their environmental performance (Green Dragon, 2006). A case study of small hotels committed to GDES in Wales was developed to meet the third objective of the thesis, which is: “explore the attitudes of the owners/managers of GDES small hotels regarding the implementation of more sustainable SWM practices and comparing them to the non-GDES small hotels studied in the second objective”. Initially, after I had finished my MPhil/PhD upgrade exam my supervisor Professor Eleri Jones invited a key representative in Arena Network who has the main responsibility for GDES to have a conversation with me and her regarding SWM in small hotels committed to GDES. Afterwards, I decided to develop a case study of small hotels committed to GDES to explore their attitudes and behaviours regarding SWM practices.

Hence, the research was directed towards developing another case study of small hotels who might undertake more sustainable SWM practices rather than the first case study “non-GDES small hotels in a Welsh local authority”. This was, actually, the main reason beyond the development of a case study of a small hotels committed to GDES believing that they might manage their solid waste in a more appropriate manner as they were GDES-certified.
Throughout this case study the researcher was concerned to explore how small hotels committed to GDES manage their hotel waste and understand the motivations beyond the adoption of sustainable SWM practices. In fact, this would help to identify how more small hotel businesses could be encouraged towards the implementation of more appropriate SWM practices.

Lastly, a cross-case analysis (comparative study) was developed between case study 1 “non-GDES small hotels in a Welsh local authority” and case study 2 “small hotels committed to GDES in Wales”. The comparative study was essential to develop a best practice model for the public sector to encourage better SWM practices in small hotels. It identified the most effective means to encourage and/or pressurize small hotel owners/managers towards the adoption of more sustainable SWM practices.

3.4.2.2 Sampling for case study 2
A purposive sampling approach was adopted to select a sample from small hotels committed to GDES. Together with the number of rooms as a criterion (see section 3.4.1.3) GDES – certification represented another significant criterion for sample selection in this case study. 16 GDES–certified small hotels were identified through the GDES members’ list which was available on the GDES website (www.greendragonems.com, accessed 150807). Hoteliers were contacted to form a purposive sampling using the same strategy explained in case study 1 (see section 3.4.1.3). Of the 16 GDES–certified small hotels, nine hoteliers were interviewed constituting a response
rate of 60% which made the case study more representative to the original population. My supervisor Professor Eleri Jones had helped me through a colleague of hers to get access to two of these respondents. As a part of this case study, three key representatives of Arena Network Organisation which carried out the main responsibility over GDES were purposively selected and interviewed.

3.4.2.3 Research methods

3.4.2.3.1 Semi-structured interview

First, a sum of nine interviews was conducted with small hotel owners/managers committed to GDES across Wales to meet the third objective of the thesis. All the interviews were conducted face-to-face within the hoteliers’ location except one interview where the respondent asked me to send the questions to him through the electronic-mail because he was too busy and did not have time to meet with me. Moreover, one of the conducted interviews was repeated with the respondent and also with the participation of my supervisor Professor Eleri Jones to ascertain that all the information obtained was plausible and consequently to strengthen and validate the findings of the research. In addition to using the questions asked to hoteliers in the first case study which focused mainly on SWM practices in non-GDES small hotels (see Appendix 3), a new list of questions was developed with the aim of exploring how small hotels achieved GDES; what practices were undertaken; the main drivers which had led them to achieve GDES; did they have any intention to progress further and achieve higher levels of GDES
certification (seven hotels were at Level Two and two were at Level Three (see Appendix 6).

Second, the interviews with GDES-certified small hotel owners/managers showed that Arena Network Organisation could play an important role in supporting and monitoring GDES-certified small hotels in maintaining the standard and improving their SWM practices. Thus, three interviews were conducted with the key representatives of Arena Network Organisation to explore a range of issues, among these: the support provided to help GDES small hotels to undertake environmentally-friendly practices; the challenges facing Arena Network to provide more education and awareness support to businesses; the measures undertaken to monitor businesses maintaining the quality of the standard; how easy a small hotel can achieve the standard; what are the stronger and weaker aspects of GDES; how effectively the standard promoted to general public. A complete list of the questions posed is involved in the thesis (see Appendix 7).

The interviews with GDES-certified small hotel owners/managers along with the key representatives of Arena Network Organisation had been undertaken between January to April 2008. I followed the same procedures used in the first case study in contacting the respondents to arrange for the interviews. The interviews lasted between 45 – 120 minutes. They all were recorded, transcribed, analysed and presented in chapter five, also observation and photographs were taken.
3.4.2.3.2 **Direct observation**

Using direct observation technique enabled me to detect some of the issues investigated in a natural and unplanned situation. In this sense, I was accompanied by the hotelier interviewed to have a walk-through observation throughout the operation, mainly, to guest-rooms, reception area and waste storage area. During the observation I observed the types and quantities of waste streams produced in addition to the way of disposing and sorting different waste materials. The observation also was very important to see whether the hotel made its environmental policy clear to customers and staff and to notice how effectively the hotel implemented different measures to conserve energy and water, for instance checking water-flows in toilets; noticing if the hotel use energy-saving light bulbs; supplying brochures or leaflets that ask customers to save water, energy and participate in the hotel’s waste recycling program. Throughout the observation I took field notes to the issues observed and supported the notes with pictures.

3.4.2.3.3 **Document analysis**

This method was very important to investigate the case study from different angles (e.g. through secondary sources). A range of documents was analysed to corroborate the evidence obtained through the interviews, these include:

- Hotel environmental policies;
- Hotel improvement plans;
- GDES assessment reports;
3.5 Data analysis

Gray (2004) identified two main approaches for analysing qualitative data: content analysis and grounded theory. The former method attempts to identify specific categories and criteria of selection before the analysis process starts, while in the second method (grounded theory), no criteria are prepared in advance. All the measures and themes come out during the process of data collection and analysis. Hence, it can be recognised that grounded theory is an inductive approach and content analysis is more deductive. Strauss and Corbin (1998:23) defined grounded theory as a theory that is

*discovered, developed and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon.*
Analysis of data using grounded theory technique involves three stages: *Open coding*, in which the data is categorised into units; *Axial coding*, in which the relationships between categories are identified and finally *selective coding*, where the core categories are integrated to produce a theory (Strauss and Corbin, 1998). The constant comparative method also represents an important approach for analysing qualitative data. It involves a series of steps as asserted by Glaser (1978): it starts with collecting data from the field; identifying key issues or activities in the data that would be a focus of categories; writing about the formed categories with an attention to describe all existing issues and constantly looking for new incidents; working with the data in an attempt to develop a model to capture social processes and relationships.

In regards to the current study, the data obtained was analysed by using the constant comparative method which yielded from the grounded theory approach. The analysis process started with transcribing, coding, categorising the data into different sets and then comparing them. Afterwards, I critically analysed the similarities and differences of the formed categories with the aim of finding out the actual meaning of the data. The themes used in the result chapters had been emerged from the questions posed and the analysis process.
3.6 Validity, reliability and Triangulation

3.61 Validity

Hammersley (1987:69) asserted that “an account is valid or true if it represents accurately those features of the phenomena, that it is intended to describe, explain or theorise”. Insofar, validity is concerned with two main issues: whether the instruments used for measurement are accurate and whether they are actually measuring what they want to measure (Winter, 2000). Ritchie and Lewis (2003) indicated that the validity of research is conceived as the precision or correctness of the research finding. Arksey and Knight (1999) and Winter (2000) identified two different dimensions to the concept of validity, namely internal and external validity. Internal validity ensures that the researcher investigates what he claims to be investigating. External validity concerned with the extent to which the research findings can be generalised to wider population (discussed in detail in section 3.7). Denscombe (1998) added that the use of multi-methods for examining one issue corroborates the findings of the research and increases the validity of the data.

In terms of the current research, validity was achieved by undertaking multiple methods to investigate the problem from different angles and strengthen the validity of the findings. I had also considered selecting multiple/representative case studies to cover the entire issues related to the study and increase the probability of generalisation. Moreover, all the questions posed in the interviews were directly linked to the research’s aim
and objectives and covered all aspects of the topic. Data was also transcribed and analysed with a very high degree of accuracy, for instance some English native speakers assisted me to recognise the unclear taped conversations of some interviewees. Moreover, one of the transcriptions was validated and rechecked with the interviewee to ensure the correctness and the accuracy of the data. Finally, all secondary sources of data used were initially assessed to determine the validity of the information given.

3.6.2 Reliability
Reliability is known as to what extent the research findings can be replicated, if another study is undertaken using the same research methods (Ritchie and Lewis, 2003). They asserted that “the reliability of the findings depends on the likely recurrence of the original data and the way they are interpreted” (Ritchie and Lewis, 2003:271). Marshall and Rossman (1999) and Seale (1999) argued that the absolute replication of qualitative studies is very difficult to achieve since they reflect realities at the time they were collected and in a situation which is likely to change. It is often referred to as an unrealistic demand. Phenomenological research may be difficult to repeat because it depends generally on unstructured data collection methods (Gray, 2004). Instead, a good practice of reliability can be enhanced through an aspect of reflexivity, which is “showing the audience of research studies as much as possible of the procedures that have led to a particular set of conclusions” (Seale, 1999:158).
A number of measures were undertaken to enhance the reliability of the current research, including: all interviews were recorded to present more reliable evidence and avoid any bias which might happen if the researcher attempted to remember the conversation. Gray (2004:345) asserted that “in terms of reliability, it is fairly obvious that taped conversations will tend to present more reliable evidence than hastily written field notes”. Also, all the questions were worded clearly and asked in a natural tone of voice. If there was any misunderstanding the question would be repeated in order to enable the interviewee understand what s/he was asked for. Moreover, all interviewees were given the opportunity to explain their own beliefs and thoughts freely without any intervention either with comments or gestures, which would create bias in the interviewee’s response to the question being asked.

It is recognised that the conditions surrounded the research might be different when replicating the current study but in an attempt to help others understand the various decisions and processes adopted along the research journey and increase the probability of replicating the present study, all decisions and procedures were set clearly. The study provides detailed information about the aim and objectives of the research, how the study was undertaken and the justifications of the adopted research strategy and methods.
3.6.3 Triangulation

Triangulation is a strategy that can be used to strengthen the confidence of the research findings (Arksey and Knight, 1999). Decrop (1999) indicated that triangulation can reduce and/or eliminate personal and methodological biases and increase the probability of generalising the findings of a study as the data is gathered from different angles and by different methods. Easterby-Smith et al. (1991) referred to data triangulation as the process of collecting data over different times or by using multiple methods. Decrop (1999:159) asserted that “using multiple methods pave the way for more credible and dependable information”. Denzin (1970) identified multiple triangulations that can be used in the same investigation, these include:

1. Methodological triangulation – the use of multiple methods to collect data.
2. Data triangulation – the use of a variety of data sources in a study in terms of person, time and space.
3. Investigator triangulation – whereby multiple researchers are employed to investigate the problem.
4. Theoretical triangulation – the approaching of the research with varied perspectives and hypothesis.

In respect of the present research, data and methodological triangulations had been accomplished through collecting the data from different sources and by using multiple methods, including: semi-structured interviews, direct observation and document analysis. The use of multiple methods assisted in
data triangulation and at the same time was an effective way to overcome most of the weaknesses of each method used (Gray, 2004).

3.7 Generalization

Generalisation can be defined as “the assertions of enduring value that are context-free” (Lincoln and Guba, 1985:110). For qualitative researchers, generalizability can be perceived as the “fit” between the cases studied and the other situations to the extent that make it possible to generalise the findings of the research (Schofield, 1994). Ritchie and Lewis (2003) named this type of generalisation as ‘representational’. It can be assessed based on two main issues: firstly, the precision of interpreting and capturing the phenomenon, i.e. quality of field work, analysis and interpretation. Secondly, the extent to which the sample studied is representative to the original population.

Gomm et al. (2000) and Schofield (2002) identified two ways for increasing generalizability of the findings based on very small-sized sample (qualitative research), these include: studying a typical case and investigating multiple case studies. In both situations, the resulted evidence is more powerful and credible than those coming out by studying a single case or because it is convenient. Both techniques are applied in the present research and thus enhancing the generalizability of the findings. The study is based on two case studies “non-GDES small hotels in a Welsh local authority” and “small hotels committed to GDES in Wales” in which the evidence generated will
be more convincing. Moreover, both case studies undertaken in this research were representative to the targeted population (as explained previously in sections 3.4.1.3 and 3.4.2.2). The thesis produced a generic model for the public sector to encourage small hotel owners/managers to manage their solid waste streams effectively.

Kalof et al. (2008) added two ways to achieve the generalizability of the research findings: clear description of the sample selection criteria and rich description of the research site. Both tactics had been used in the current study where a thick description of sampling procedures and selection criteria had been provided (see sections 3.4.1.3 and 3.4.2.2). This chapter also provided detailed information about the research site in terms of the procedures undertaken to achieve the aim and objectives of the research, the research methods used along with the data analysis techniques.

3.8 Summary
This chapter has detailed the thesis’s theoretical and practical approach and rationalizes the different decisions and processes undertaken throughout the research journey. The study’s theoretical approach had followed a string of constructionism – interpretivism/phenomenology (see Figure 3.1). A qualitative approach had been used to reach the overall aim and objectives of the study as it is characterised by its ability to provide a deeper understanding of the phenomenon being investigated. Using case study research strategy had enabled the researcher to explore SWM practices in
GDES and non-GDES small hotels from different angles and by using multiple sources of evidence, including: semi-structured interviews, direct observation and document analysis. Data obtained throughout the interviews were analysed using the constant comparative method which yielded from the grounded theory approach. The chapter finally looks at the validity, reliability and triangulation issues. The next chapter presents and discusses the results obtained from the case study 1 – non-GDES small hotels in a Welsh local authority.
CHAPTER FOUR:

CASE STUDY OF NON-GDES SMALL HOTELS IN A WELSH LOCAL AUTHORITY

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4.1 Introduction

This chapter presents the results obtained from a case study of non-GDES small hotels in a Welsh local authority. It uses the theoretical framework developed in chapter two to explore and understand hoteliers’ beliefs and attitudes towards varied SWM issues and to identify why non-GDES small hotel operators do not engage in proactive SWM behaviour (see Figure 2.12). The chapter starts with exploring current SWM practices undertaken and discusses hoteliers’ attitudes in relation to each level of the SWM hierarchy involving: prevention, minimisation, reuse, recycle, compost and landfill of hotel waste. It then looks at hoteliers’ normative beliefs and attitudes towards encouraging staff and customer participation in the hotel’s SWM programme. It investigates the extent of using PTB schemes by hoteliers for disposing of some of hotel waste streams. The chapter further explores hoteliers’ awareness and compliance with the legal obligations for disposing hotel waste. It discusses the potential support and the key drivers required to stimulate small hotel operators to manage their solid waste effectively. It identifies hoteliers’ attitudes in relation to the development of networks between small hotels. The chapter further explains an initial model for SWM in non-GDES small hotels and then summarizes the findings.

4.2 SWM practices in non-GDES small hotels

4.2.1 Prevention

Green purchasing is really the only way to cut or reduce waste at source (Min and Galle, 1997; Mostafa, 2007). When the respondents were asked about
the considerations which they took into account when making any purchases for their hotels, the majority of hoteliers interviewed (7 out of 9) considered three key factors: the need, the quality and the price of the product. A product’s environmental attributes was something that low down in their list of priorities for their purchasing decision. For example, it did not matter to the hoteliers whether the item had too much packaging or not. Some of these hoteliers felt that carrying out green purchasing practices was a pointless process and would have no real effect on reducing hotel waste. This finding is in agreement with previous studies (Maineri et al., 1997; Revell and Blackburn, 2007) which asserted that customers were less likely to adopt green purchasing practices. Robens (1996) argued that consumers mostly prioritized the price of the product, quality and convenience before the environment. One hotelier said:

*Wrappings are not a consideration at the moment; it is not a viable option. It is only whether we need the product?*

(SH 4, 13 Rooms)

According to the attitudinal and PBC beliefs underpinned in TPB, it was apparent that most hoteliers interviewed held unfavourable attitudes towards preventing the waste at source believing that prevention was not attainable and/or a difficult SWM option. In addition, some hoteliers were not aware of the principles of green purchasing and this could be one of the main factors which influenced their attitudes and made them perceive a difficulty to undertake green purchasing practices.
However, where there was awareness, price and quality were critical issues associated with buying eco-products. Price of the recycled products was more expensive than non-recycled ones and this also might be one of the main reasons of why many of the hoteliers were not willing to buy recycled products. One of the hoteliers commented that it would not be a cost effective business if she bought environmentally-friendly products. She said: “I have bought recycled paper but I was quite surprised how expensive it was” (SH8). Coupled with high prices, recycled products were perceived to be of a low quality. She said: “one of the problems with recycled paper was that sometimes it is not very good on photocopying machines and causes problems” (SH8).

On the other hand, two hoteliers interviewed (SH2 and SH9) were aware of green purchasing and expressed positive attitudinal and behavioural beliefs towards prevention of waste in the first place. These hoteliers believed that green purchasing was a very important issue to be considered as it could help in reducing disposal costs and at the same time protect the environment from waste disposal into landfill. They had actually considered a range of environmental aspects in their purchasing decisions, among these: buying products that had minimum wrapping materials; buying products that had little impact on the environment; buying products that were made from recycled content. Interestingly, one of these hoteliers argued that there was always limited suppliers of green products and placed the responsibility over
stores/retailers to present eco-friendly products clearly-labelled in order to help hoteliers recognise them more easily. As explained below:

_We try not to have too much packaging, so we would not have too much rubbish. Also, we try buying things that are less harmful to the environment, things like that._

(SH 9, 9 Rooms)

_It is not only the cost when we purchase. It is the cost of the purchasing side and then it is also the cost of the disposal side. So manufacturers win win and we lose lose._

(SH 2, 15 Rooms)

### 4.2.2 Minimisation

The majority of respondents interviewed (6 out of 9) felt that it was too difficult to minimise waste in a small hotel business. They raised a question of “how they could possibly reduce the waste”. Many hoteliers argued that it would be much easier to recycle waste than to reduce it. They pointed out the difficulty in reducing different waste streams, particularly packaging and food waste. With regard to packaging, for instance, they felt that they were responsible for disposing of something that they were not actually producing in the first place or even had any control over. Nowadays, there is excessive use of packaging by manufacturers for their products which ends up to the hoteliers' bin. One of the hoteliers mentioned that if hoteliers had the option to just leave or take-back packaging to stores then this would help in reducing packaging waste stream. Consequently, hoteliers’ behavioural intentions to minimise hotel waste was obstructed as a result of hoteliers feeling negatively about minimisation and also lacking the controllability over
the behaviour (PBC) (e.g. lack of awareness and poor manufacturers’ packaging strategies). One hotelier said:

*We do not have the opportunity to reduce packaging, we do not actually produce it and you cannot buy things without packaging. If I buy a carton of orange juice it has a cardboard holder and then it’s cling-filmed in plastic etc. So, for me, to use it I have to take all that off. The only thing you could do is to actually take the packaging off and leave it at the warehouse and just bring the item home. We do not create the waste. In actual fact, we have to dispose the waste that is produced somewhere else. It is a consequence of purchasing something.*

(SH 2, 15 Rooms)

Likewise, most of the hoteliers interviewed were very negative towards reducing the food waste stream. One of the hoteliers’ negative comments was “*I can say to customers it will cost you extra £10 if you do not eat your sausage*” (SH7). Indeed, hoteliers did not use the varied techniques which could be used to reduce food waste, i.e. cooking to order, purchasing trimmed meat and vegetables, applying the principle of ‘first-in first-out’ in storage etc.

The amount of food waste generated daily by some hoteliers was quite big because they cooked on expectation. They did not know exactly how many customers would have food with them and also the quantities of food or portion sizes served to customers were too much. Thus, they had much food waste left on the customers’ plate. Bates and Phillips (1999) similarly reported that the implementation of waste minimisation programmes developed at a very slow rate in the food and drink industry. The core issue was that many small hotel owners/managers believed that their operations
produced small quantities of waste. Indeed, such attitudinal beliefs may hamper any waste minimisation initiative in small hotels. As one hotelier commented:

*We had some waste this morning; one bag containing *i.e.* bacon, sausage...etc. what I should do with that, eat it!!! Our quantity is not big at all. There is no way to reduce any waste in this business. How can I reduce the quantity? By giving people less food!!!!!! Where am I put it other than the bin. If they eat half a piece of bread and half left what I am going to do with it? I cannot reduce that unless I forced them down and say eat it all and then no waste.*

(SH 1, 23 Rooms)

For the majority of hoteliers, monitoring/reducing hotel waste was not more than checking the bill, making sure that staff ripped boxes and compressed waste materials down to put as much as possible in black bags and then into the bin. They raised a question of “*what else can we do?*” Indeed, most hoteliers interviewed did not look at reducing hotel waste at all. One hotelier said: “*personally, I try to get as much as I can into the black bags. I can compact it and I push it all down and make the bags as full as possible before sealing them off; that is all*” (SH6).

However, some hoteliers interviewed (3 out of 9) (SH2, SH3 and SH8) reacted positively towards reducing hotel waste. They managed it personally as they believed that it would lead to waste control and reduction of disposal costs (behavioural beliefs). They adopted certain practices to minimise waste, including: cooking to order, conserving resources, undertaking green purchasing practices and employing qualified staff in certain positions for example, chefs who would generate less food waste or a maintenance
manager who would try and fix things. Two of these hoteliers argued that most of the hotel waste produced by customers not by the operation itself and they felt that it was difficult to reduce customer waste. Moreover, one of them tried to reduce some types of waste streams (i.e. tea bags) as explained below:

"Generally, I ask people the day before what they want so I would know their needs. One of the waste materials that I have reduced is tea bags. I make flasks of tea so I do not put individual tea bag per person. It is a small thing but if everybody do it, it will be better for our environment and the hotel itself."

(SH 8, 6 Rooms)

4.2.3 Reuse

Reuse is considered a significant way of preventing waste materials from entering the waste stream. The findings showed that three hoteliers interviewed (SH2, SH3 and SH9) held favourable attitudes towards reuse believing that it could be used effectively for disposing of large/heavy items (i.e. furniture, televisions), which were produced on a longer-term basis. They actually considered reusing a lot of these items by following a range of methods, including: donation to charity organisations, illegal delivery to Household Waste Recycling Centres (HWRC) or selling them. As one hotelier said: “We use recycling points sometimes when we have got some big beds or broken furniture; we put it in a car and go and drop it in these recycling centres but it is rare”. For daily waste, those hoteliers believed that reuse was only limited to some materials like plastic bags and fluid soap, which saved the hotel money. As one hotelier explained:

"That's good, it saves money because I take my plastic bags to Tesco's, fill them out and they give us one point for plastic bag."
Also, all the bags in the bin upstairs in the hotel, if stuffs aren’t dirty then we will reuse the bag. We don’t through them out everyday just because they have got a little piece of cotton wool, a piece of soap or something in there; we reuse those. I don’t know of any thing else that we can reuse really?

(SH 9, 9 Rooms)

However, the majority of hoteliers interviewed (6 out of 9) believed that reuse was not a viable SWM option to implement in a hotel business, particularly for daily waste. They raised a question of ‘to which extent you could reuse items’ (SH7). One of the hoteliers interviewed argued that it was going to be the same waste generated everyday such as milk jugs, plastic bottles etc. where you could possibly use one milk jug for watering the plants but it was difficult to reuse them all. Moreover, two hoteliers were very cautious about reusing because of the health and safety issues and also their belief that reuse would negatively influence customer comfort and satisfaction. Applying TPB, attitudes have a great effect on behaviours. Hoteliers’ behavioural intentions to reuse waste materials were impeded absolutely because of their negative attitudes towards the behaviour. In this respect, Kirk (1996) indicated that it is difficult in the hotel industry to reuse waste materials and at the same time maintain their quality (e.g. partially-used soap) although he pointed out that it is possible to recover some of the value of the used material by giving it to charity organisations.

4.2.4 Recycling

4.2.4.1 Operators’ attitudes towards recycling

What does recycling mean to you? This initial question was asked to all respondents in an attempt to understand and identify their beliefs and
attitudes towards recycling before examining the difficulties of it. Interestingly, the results marked a clear distinction between the attitudes of small hotel managers and owners towards recycling. Most of small hotel managers interviewed were not interested or enthusiastic to make recycling while the majority of hotel owners had showed favourable attitudes towards it. One hotel manager said: “I know it does something to the owner but to me not a lot. I know we do a lot of waste but we pay for it at the end” (SH4). A possible explanation of this finding is that the owner is ultimately responsible for the operation and he/she is very interested in reducing operating costs, such as those associated with waste disposal. Moreover, it was found that the attitudes of some hoteliers towards SWM were much influenced by their own environment. One hotelier explained that she brought up in a rural community and her parents were farmers and that they felt strongly about the problems with the planet (e.g. pollution and global warming). So she was very keen about recycling.

Hoteliers were classified into three main groups based on their attitudes towards recycling, including: ‘positive and taking action’; ‘positive but not taking action’; ‘negative’. The first group, ‘positive and taking action’, involved three hoteliers out of the nine (SH2, SH3, SH9). They were very positive and committed to recycling. They viewed solid waste materials as a valuable resource which could be recycled again to fabricate new products. One of these hoteliers said: “I try as much as I can. I tell the girls when they bring the waste down to keep the paper, cardboard and plastic. The only thing that I do
not do is tins but because I do it myself; I have to find somewhere to put it” (SH9). They recycled some of the hotel waste streams by following different routes. For example, SH2 and SH9 were recycling illegally using the domestic recycling system. While SH3 had contracted with the private waste sector to recycle one of its hotel waste streams (glass). He expressed his willingness to recycle the other hotel waste streams (e.g. paper, cardboard, plastic and tins) with the local authority but they still had not got the service from the public sector.

Hoteliers in this group (positive and taking action) asserted that their primary motives beyond the implementation of recycling programmes were to reduce waste disposal costs and to protect the environment. Interestingly, one of the hoteliers mentioned that the cost of recycling which offered for some hotel waste streams (i.e. glass) was far more favourable than the charge of disposing of the waste into landfill, which could be used as an effective motivator to encourage more hoteliers to recycle hotel waste as demonstrated in this statement:

*We have recycling with a firm called Green Berg. They come twice a week to collect glass waste. It is only £100 a year, £2 a week. That is almost an extremely fair price.*

(SH 3, 28 Rooms)

Secondly, the findings identified amongst the hoteliers interviewed a group (3 out of 9) who were positive but not taking action (SH1, SH7 and SH8). They were very willing to recycle and felt positively about it but they lacked the service. They argued that if the local authority provided the service it would
be much easier for them to recycle. They mentioned that the other obstacles associated with recycling (i.e. lack of time, lack of space, cost etc.) could be minor obstacles and they would overcome them if they had the service to recycle. One hotelier said:

*I would love to recycle everything but there is no place to take it. If the council provides the service I will recycle. I am very passion to recycle and not to fill all these landfill sites with all that rubbish that is going to give toxics, gases and things like that. I would like the world to be nice and not have that ozone layer problems and all that sort of things.*

(SH 7, 18 Rooms)

According to TPB, holding positive attitudes towards the recycling behaviour is not only sufficient for performing the behaviour, particularly when there are external factors influencing the behaviour (e.g. governmental support of recycling service). However, Schaper (2002) found that there was not a significant link between the environmental attitudes of owner/manager of small firms and their actual performance. Surprisingly, although the local authority as the governmental body should take the lead role and ask/encourage all commercial businesses to recycle hoteliers revealed that they had never been asked by the council to recycle.

Finally, the findings identified a group of hoteliers (3 out of 9) who were, unfortunately, ‘inactive’ (SH4, SH5 and SH6) perceiving no value to solid waste materials which were produced by their operations. They believed that they were producing small quantities of waste and thus felt that their contribution to sustainable environment was minimal. Dewhurst and Thomas (2003) similarly indicated that most small tourism businesses believed that
they were not big enough to think about recycling. In respect of the current study, hoteliers of this group (inactive) were not interested in recycling. They described it as a waste of time and they had no reason to do it. They placed the whole responsibility on the local authority to handle waste materials. In fact, this group of hoteliers were more interested in other strategic issues, such as increasing profitability, rather than thinking about their environmental responsibility in terms of managing their hotel waste effectively. They felt that there was nothing to do other than sorting it out into black bags and getting a waste carrier to take it away to landfill. Typical comments were:

_ I do not do recycling here because it is easy with one green bin containing the black bags to get them out rather than recycling._
_We are very small business; if you are talking to Hilton then it is massive waste there._

(SH 5, 25 Rooms)

_ I do not have any reason to do it. We pay a fair amount of money and tax to the council and we expect them to take care of their rubbish. There is no legislation, why we should add recycling to our priority when we do not have any incentive to do it._

(SH 4, 13 Rooms)

### 4.2.4.2 Obstacles to recycling

According to TPB, hoteliers’ action is not only attributed to their personal beliefs and attitudes but the behaviour may be obstructed as a result of the presence of some inhibiting factors (PBC construct). The findings informed a range of internal and external factors which hampered the recycling behaviour in small hotel businesses (see Table 4.1). In this respect, the majority of hoteliers interviewed (7 out of 9) indicated that they lacked the
control or the ability to perform the recycling behaviour as a result of the unavailability of ‘doorstep’ recycling collection service and the absence of the tools necessary to recycle (bins and bags). One hotelier was contracting the council mentioned that the local authority still did not have a recycling system for commercial businesses and so they refused to pick up recycling bags from businesses. However, some hoteliers tried to recycle part of their hotel waste streams by contracting private waste companies (e.g. SH3) or recycling illegally via using the domestic waste recycling system (e.g. SH2 and SH9). One hotelier commented:

**Absolutely, there are no facilities in this area at all for collection of recyclable. I am not going to put it outside and have the cats and dogs come and sniff around all the bags.**

(SH 8, 6 Rooms)

### Table 4.1: Obstacles to recycling

<table>
<thead>
<tr>
<th>Aspects</th>
<th>No. of Respondents/Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXTERNAL OBSTACLES</strong></td>
<td></td>
</tr>
<tr>
<td>- Lack of recycling facilities</td>
<td>7/9</td>
</tr>
<tr>
<td>- Lack of awareness</td>
<td>6/9</td>
</tr>
<tr>
<td>- Cheap landfill</td>
<td>6/9</td>
</tr>
<tr>
<td><strong>INTERNAL OBSTACLES</strong></td>
<td></td>
</tr>
<tr>
<td>- Lack of time</td>
<td>6/9</td>
</tr>
<tr>
<td>- Cost</td>
<td>6/9</td>
</tr>
<tr>
<td>- Lack of space</td>
<td>6/9</td>
</tr>
<tr>
<td>- Producing small quantity of waste</td>
<td>4/9</td>
</tr>
<tr>
<td>- Smell</td>
<td>1/9</td>
</tr>
<tr>
<td>- Employing a small number of staff</td>
<td>4/9</td>
</tr>
<tr>
<td>- Higher rate of staff turn-over</td>
<td>4/9</td>
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</tbody>
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Likewise, most hoteliers (6 out of 9) perceived ‘lack of awareness’ as a
difficulty to recycle because they were not aware of how to do it. Hoteliers
argued that they never received any information about recycling from the
local council or any other organisation to tell them about how or where to do
it. Even those hoteliers who recycled illegally became disappointed and felt
that their time and effort which they had dedicated to segregate waste
materials were wasted and this was probably because of their ignorance of
the council’s domestic waste recycling system. They believed that the waste
was not going for recycling as all the materials were transferred in the same
lorry, whereas the council considered segregating waste materials again in
their MRF. Instead, one of the hoteliers suggested that the council’s vehicle
should have different compartments where the bags could be maintained
separately as they were being collected. Also, the bags should be colour-
coded and strong enough so that each waste stream could be put into a
specific coloured bag.

Moreover, landfill was still a cheap option for the majority of hoteliers (6 out of
9) which acted as a real barrier of their recycling behaviour. One of the
hoteliers mentioned: “it is only £10 a week which is not a lot of money” (SH4).
Despite the cheapness of the landfill, one of the hoteliers felt that solid waste
was still an extensive cost over the operation even if the landfill charge was
only £10. This was because his operation produced a large amount of waste
(15 black bags a day) which collected by the waste carrier on a daily basis. It
cost him £10 a day which is equal £3650 yearly. Indeed, ‘lack of recycling
facilities’, ‘lack of awareness’ together with ‘cheap landfill’ represented the biggest external obstacles facing hoteliers for making recycling.

Similarly, ‘lack of time’ and ‘cost’ issues were significant obstacles as most small hotel owners/managers (6 out of 9) felt that the process of segregating and recycling waste materials was very time consuming and costly because it would need to be done regularly on a day-to-day basis. One of the hoteliers explained that the segregation process would take time from staff and they were paying for that time. In addition, some types of waste materials (tins) needed to be treated, e.g. by washing, before they could be put out for collection. Surprisingly, two hoteliers held negative attitudes towards recycling believing that separation of the waste should not be their responsibility but it should be the council’s job although, in fact, SWM was a legal responsibility of hotel operators. A typical comment was:

*It is very costly; I pay my staff hourly so by definition they are getting paid by every minute. So if they are going to take the stuff around to put in the recycling bin I am paying for that because while they are doing that they are not doing something else. In practice, sorting out of bags every day will take an hour of one person. I pay £5.50 an hour; so it is going to cost me £5.50 everyday, about £37.50 a week. Also, in order to be able to recycle there is a lot of pollution going on. We suppose to wash out the milk carton, cans and tins and that will waste water.*

(SH 4, 13 Rooms)

Personally, the majority of hoteliers interviewed (6 out of 9) asserted that they did not have enough space to place more bins in order to segregate waste materials (lack of space). Two hoteliers commented: *“it would be difficult to put different bins to separate waste”* (SH 7), *“It is a small kitchen and we got*
a place for one bin. So, there is no physical room in there to have anymore” (SH 1). Particularly, those hoteliers who were classified as ‘inactive’ were not willing to locate different waste storage bins in their properties to segregate waste materials. As one hotelier said: “one bin is bad enough” (SH8). One of the hoteliers explained that small business buildings were getting much smaller in size because the rates were paid on square yardage. In other words, small hotel operators tended to have smaller buildings so that they could pay less rates and taxes.

Also, the belief of some hoteliers (SH1, SH4, SH5 and SH6) that ‘they were producing a small quantity of waste’ was one of the significant factors that negatively influenced their attitudes to manage their hotel waste effectively. Surprisingly, they believed that producing 10 or 15 black bags a week was too small amounts of waste to negatively influence the environment. Furthermore, one of the hoteliers was worried about putting more bins to segregate rubbish as it might give off a bad smell. He said:

Also space is an obstacle; in our kitchen, there is a bin and everything goes in there. If we had to do that we had to have separate boxes and there was not enough space plus the smell. It stinks doesn’t it?

(SH 5, 25 Rooms)

To get staff involved in the hotel’s waste recycling programme was another critical issue because of both ‘employing a small number of staff’ and ‘having a higher rate of staff turn-over’. Four hoteliers out of the nine perceived waste separation and recycling as ‘non-productive activities’. They argued that they employed a small number of staff and so they felt that it was difficult to ask
them to segregate waste materials believing that segregation of waste was going to slow them up to do their main duties in terms of housekeeping, cleaning etc. They added that small hotels always had a higher rate of staff turn-over because most of their staff were part-time students who worked during holiday periods. Therefore, new staff would need to be made aware and trained on how to do it which was considered additional costs over the business. These findings support previous research (for example, Kirk, 1996; Maclaren and Yu, 1997; Feiock and Kalan, 2001; Bacot et al., 2002; Revell and Blackburn, 2007) that reported various barriers confronting small businesses in relation to recycling, e.g. cost, space and time.

4.2.5 Composting

In regard to composting, two hoteliers out of nine (SH8 and SH9) were found making in-house composting although they running the smallest operations. By contrast, larger hotels participating in this case study were not composting. Hoteliers just put most of the organic waste (e.g. vegetable trimmings, cardboard and grass) in a composting bin and turned it over regularly until it became soil which they used as fertilizer for their garden (see Figure 4.1). They did not put cooked food, bread, meat, bacon or tomatoes so as to reduce/eliminate the smells. Both of those hoteliers viewed composting as very easy and cheap waste disposal option for organic waste and advised every hotelier to consider it. It reduced the cost of disposal along with eliminating the cost of buying nutrients or fertilizers for the garden. Moreover, it was an odourless process taking a very short period of time
(usually about three months). Since those hoteliers had very strong intentions to compost and felt positively about it they were eager to find someway and do it themselves as they lacked the external support (PBC). As one hotelier explained:

*I just put all the rubbish in a special container. I put banana skins, egg shell, cardboard, newspaper, flower cuttings, tea bags and coffee granules. I left it rot down and I throw an activator to speed up the process plus the Gardener turn it over continuously. Then after about three months it becomes earth. I take the soil and put it in my garden. Every hotelier should do it. I mean it is quite cheap, I think that box is about £16 something like that. It saves cost because instead of paying to dispose the waste I use it in my garden. It is not dirty and it does not smell.*

(SH 8, 6 Rooms)

On the other hand, the majority of respondents interviewed (7 out of 9) felt negatively about composting. They believed that it was difficult to make in-house composting arguing that the quantity of the organic waste produced was too small to be composted. Moreover, they lacked the awareness, space and the tools (e.g. composter bin) necessary to do it. Using TPB indicated that composting behaviour in small hotels was obstructed as a result of the unfavourable attitudes of hoteliers towards composting and also their perception of internal and external barriers (PBC) which they had no intentions to overcome.
Figure 4.1: In-house composting in small hotels

Photograph taken from a small hotel with six rooms

Photograph taken from a small hotel with nine rooms
4.2.6 Landfill

Landfill was undertaken by all hoteliers but the reliance on this waste disposal method differed amongst them. The majority of respondents interviewed (6 out of 9) reported that landfill was used as a primary SWM option for disposing of a hotel waste whereas some hoteliers (3 out of 9) adopted landfill only for the disposal of part of the hotel waste streams. They just got rid of the daily waste by putting it into black bags so it could be taken away to landfill by the contracted waste carrier – either the council or a private waste sector. One hotelier said:

*I put it in black bags then it goes to the wheelie bin outside, all mixed waste. I never had green bags for recycling.*

(SH 4, 13 Rooms)

Most small hotels produced a range of 10 – 20 black bags a week depending on the services provided and occupancy levels. However, one of the small hotels, unexpectedly, was found generating about 15 black bags a day and this could be explained by the fact that this hotel was a busy operation with 28 rooms, 60 seats restaurant, function room and a bar with capacity of 100. For some hoteliers, particularly those who were ‘inactive’ and felt negatively about recycling, as long as the waste was collected from their operations they never thought about the potential deleterious environmental effects of burying it into holes in the ground (landfill).

Furthermore, small hotel operators did not maintain records of waste generation to identify sources, types and quantities of waste produced and disposal routes. They believed that, for a small hotel, there was no need to
consider this issue where in fact it would be a very important tool for waste auditing and monitoring purposes. Both Maclaren and Yu (1997) and Trung and Kumar (2005) indicated that small hotels, normally, do not document any information about solid waste. Practically, hoteliers never thought about undertaking a waste audit for improving their SWM practices. This result was consistent with previous studies (Goodall, 1995; Wallis and Woodward, 1997, Biondi et al., 2000) which argued that environmental auditing was not a likely action in small tourism businesses as they lacked the resources (i.e. time, money) and capability to perform such activity.

It was clear that the public sector was much preferred by the majority of small hotel owners/managers for collecting and landfilling of their waste. Seven hoteliers out of the nine interviewed indicated that they dealt with the local council to pick up their rubbish on a regular basis. Basically, cost and convenience were the two main factors used by most hoteliers for selecting the waste carrier. For some hoteliers, the decision to select the waste carrier was inherited. In other words, the hotel had contracted the council for many years and they had just continued with them. The public sector was offering a fixed charge for waste disposal service and was generally little cheaper than the private waste contactors. As one hotelier said:

Yeah, we deal with the council. I think the council is probably little bit cheaper and also we have not really looked into anything else. It was just that the council approached us and we just went with them.

(SH 7, 18 Rooms)
However, two hoteliers had contracted with the private waste sector to get rid of their hotel waste. Nevertheless, one of these hoteliers was not satisfied with the waste collection services provided by the private waste carriers describing them as unreliable because they did not collect regularly. Thus, he intended to finish the contract with the private waste carrier and return back to deal with the council. He said:

We used to use Biffa but they never used to turn up and pick up the bins. They would do one day and they would not do the next. It was not regular enough. So we would get rid of them and return back to the council.

(SH 5, 25 Rooms)

From another perspective, the private sector as well as the public sector’s waste carriers offered a fixed charge for waste disposal service, i.e. by the bin, which did not encourage the waste minimisation approach. For example, even if hoteliers were able to reduce their waste to a half of bin they were still being charged for one bin. One hotelier commented: “regardless we fill the bin or not it is a hire of the bin and it is £10 a charge” (SH3).

4.3 Main players in the hotel’s SWM programme

4.3.1 Staff participation

Most small hotels participating in the current case study employed a small number of staff, mostly part-time, ranged from three to five staff. Apparently, the owner/manager of the hotel was the only person who had the ultimate decision to manage solid waste whatever they want. Therefore, it depends basically on the attitude of the owner/manager and to a lesser extent the attitude of staff. This result supported Schaper (2002) arguing that in small
business context, a firm’s owner/manager is the only one who has the decision to change the practices. These businesses would significantly act in an environmentally-responsible way if their managers were aware of the environmental issues and the benefits gained from becoming ‘green’. In respect of the current study, only two hoteliers (SH3 and SH9) argued that staff were very supportive and interested in recycling and putting things in the appropriate place. SH3 said: “I think they have been quite good regarding the glass”. They identified ‘training’ as an effective mean to encourage staff participation in the hotel’s SWM programme. Barclay et al. (2006) indicated that staff commitment was essential for the hotel’s waste minimisation and recycling programme.

In comparison, the majority of respondents (7 out of 9) believed that staff did not impose any social pressure (Subjective Norms) as implied in TPB upon them to recycle or compost hotel waste. They argued that staff did not have the opportunity to approve or disapprove the behaviour (normative beliefs). Obviously, for instance, the recycling decision was up to the boss not to individual staff. In other words, if the owner/manager of a small hotel was willing to categorise and sort out waste materials then staff would do as they were paid to do whatever the boss required them to do otherwise they would be terminated. One of the hoteliers indicated: “if they are told to do it they will do it without any incentives but it isn’t priority yet” (SH4).
All hoteliers refused the idea of giving staff monetary incentives to encourage them to reduce and recycle hotel waste believing that small hotels could not afford to give staff extra money. Instead, some hoteliers interviewed suggested that staff should be provided with the tools to segregate waste and also be trained on how to reduce, recycle and compost waste (guidance). Operators should also explain to them the reasons and the importance of doing it. This is best explained in the following excerpts:

_I do not think they need sort of incentives really. I think they just need to know if everybody helps little bit the environment will be a better place to live. Also, because it is their job; because they are working so they do whatever the boss want. If I say to them all those newspapers need to go to the bin, so they will do it really._

(SH 9, 9 Rooms)

Interestingly, one of the respondents added that handling rubbish was a task that should be added to staff’s job description to be expected from staff when they were employed and dealt as a normal duty by staff in the hotel’s daily operations. She said:

_Handling rubbish should be part of the job description so that would be expected from them. They will do it because they have been paid to do it._

(SH 2, 15 Rooms)

### 4.3.2 Customer involvement

Customers can play an effective role in the hotel’s waste recycling programme (Cummings and Cummings, 1991). Therefore, all hoteliers interviewed were asked about the possibility of involving customers in the hotel’s SWM programme by asking them to minimise and recycle their waste and to prepare their properties to support customers to segregate their waste
during their stay. For instance, provide extra clearly-labelled bins in the
guestrooms and corridors to segregate the waste. The findings revealed that
only two hoteliers out of the nine (SH3 and SH8) supported the idea and
believed that most hotel guests were going to be quite sensible to protect the
environment and they would put things where they were supposed to be.
One of the hoteliers added that it would be essential to put signs and clearly
labelled bins just to get the message across and encourage customer
participation. She said:

I would say 95% of the people would do it. If I am requested I
will do colour bins and say will you please put your waste in the
appropriate bin. If we could purchase signs and put a little note
on the bin, they would do it. Generally, I would separate it
myself anyway. It is very very small, about half to quarter of a
bag a day.

(SH 8, 6 Rooms)

Conversely, the majority of respondents interviewed (7 out of 9) felt
negatively about involving customers in the hotel’s SWM programme
believing that customers would not be interested in recycling. One of the
hoteliers exhibited his negative attitude by explaining that if he was in a
position of customer and the hotel manager asked him to reduce or
segregate his waste he would say to him ‘what is your problem man?’ (SH4)
and he would leave the hotel to go to somewhere else. However, both
Hayward (1994) and Cummings (1997) reported that customer participation
in the hotel’s waste recycling programme had positively changed and they
were more likely to recycle. Hoteliers’ negative attitudes towards encouraging
customer participation in the hotel’s SWM programme were best explained in
the following quotes:
No, we are not going to tell them how to deal with their waste when we check them in; it is up to them really. We do not want to impose on their stay too much. They are coming here for luxury stay. We can put possibly different bins in the corridor not in the rooms but it is only a small hotel. They are not going to get up and open their door to go to the corridor to throw something inconvenient to them and also it would take too much space in the rooms.

(SH 7, 18 Rooms)

If you ask them about it they will just laugh. They will not take it seriously. They will chuck it somewhere else won’t they? We will have two big bags of all the rooms a week. This is not a lot really.

(SH 5, 25 Rooms)

Accordingly, for the majority of hoteliers, the social effect (Subjective Norms) demonstrated in TPB and which can be excreted by customers to encourage hoteliers to recycle is minimal or not exist. Hoteliers believed that guests did not go to a hotel to sort out rubbish. One respondent commented: “it would be impertinent to say to customer segregate your waste” (SH6). Most hoteliers argued that they had no way to control customer waste other than putting it into black bags and then taken away to landfill. They even felt that it was difficult to go through customer waste and segregate it because it might be full up with nasty and contaminated things which would be undesirable task for staff to do it. Only one hotelier argued that the quantities of waste generated by customers were very small and that they could actually separate it themselves. She said: “I mean mostly we have guests stay for one night. So they are not going to have much rubbish which we could separate ourselves” (SH7).
As a result of the hoteliers’ unfavourable normative beliefs and attitudes towards encouraging customer participation in the hotel’s SWM programme, most hoteliers rejected the idea of putting more bins in the rooms or the corridors to segregate the waste at the first place of disposal. They asserted that small hotel buildings were very compact and there was no space to put another bin in the room, and if so, they wondered how many bins they would need. Moreover, they felt that putting more waste storage bins throughout the hotel would not be practical because it would take much time from staff to sort it out. Two hoteliers commented:

*If we put it in a smaller bin it can go all over the place and it can dirt the carpets and it will not be a cost effective business. We are not going to start to put different bins in bedrooms; this is not the way it works.*

(SH 4, 13 Rooms)

*No, they will not do it and I will not provide another bin in the room which is small anyway, it’s not visible. I got one bin in the bathroom and one in the bedroom. I don’t want another one in there. The room is tightly and it is not practical.*

(SH 1, 23 Rooms)

### 4.4 Non-GDES small hotels and product take-back (PTB) system

At the time of conducting the current study the PTB system in the UK was limited to electronic and packaging waste (see section 2.6.4). Nevertheless, under the Packaging Waste Regulations 1997 in the UK, hoteliers have no chance to take-back or leave their packaging in stores as manufactures do not have any legal obligation to recover and recycle the end-users’ packaging. However, the study had assumed that there was a
comprehensive PTB system in the UK involving a wide range of waste streams and encouraging small business end users to participate as the case of most European counterparts, e.g. Germany. The research was then concerned to explore small hotel owners/managers beliefs and attitudes towards the participation in such a potential PTB system.

The findings revealed that the majority of respondents interviewed (8 out of 9) felt negatively about the idea of taking back hotel waste to stores, e.g. empty boxes or cartons, even if stores would accept them. They identified some obstacles which would obstruct them to use such a comprehensive PTB system. Among these: increased costs as they would have to pay for the petrol costs and drive to the wholesalers twice to transport the waste materials (direct costs) and also for the cost of involving staff to sort out waste streams (indirect costs); time consumption; no space to store packaging until taking it back. Consequently, based on TPB, hoteliers had no intention to take a role in the hypothesized PTB system as a result of their negative attitudes and their perceptions of inhibiting factors (control based-beliefs). This is best explained in the following excerpt:

Sure, that will be great in the ideal world. It is very difficult to happen, you almost got the fuel and energy been used twice because you go to the wholesalers buy stuff, bring it here, use it and take the packaging back to them. So that is like an extra amount of time to go back there. I suppose you can take it back when you do some shopping there but then you get a problem; I only go to the wholesaler once a month for all the stuff that I need to the hotel where I am going to put all the stuff before I take it back to the people who sold it.

(SH 9, 9 Rooms)
Out of 9 hoteliers interviewed, only one respondent reacted positively towards the development of a comprehensive PTB scheme. She said: “good idea, if they are responsible for collecting and taking it back, they will produce less, they will not want to cost will they?” (SH2). She suggested that the system should begin with the producers who should accept the packaging of their products back and then both consumers and wholesalers should take part. In this sense, consumers can carry their packaging back to stores which represent the medium of the cycle to keep them properly for the original producers to collect. Interestingly, the development of such a comprehensive PTB system is a good way to enhance manufacturers’ obligation to cut their usage of packaging and then targeting the waste at source.

4.5 Complying with the legal requirements for disposing the hotel waste

Section 34 of EPA 1990 places a Statuary Duty of Care on all those who produce or deal with the waste. The waste must be carried and/or transferred to an authorised person who holds a valid waste carrier license. The regulations require anyone who generates, disposes and handles the waste to have and retain a WTN for at least two years and to provide it to the local authority if they requested. The WTN is a legal document describing all the waste materials disposed and identifying all the parties involved in the transfer of the waste.
In this regard, the majority of hoteliers interviewed (7 out of 9) were unaware of the legal requirements for disposing hotel waste. They had never tried to contact the council or any other organisation for advice on SWM and their legal obligations in relation to SWM. This result is in agreement with previous studies (Hutchinson and Chaston, 1995; Hillary, 1995; Gerrans et al., 2000) which showed that small business owners/managers always had a low awareness of relevant environmental legislation. The interviews revealed that some small hotel owners/managers were unknowingly disposing of the hotel waste illegally by using the domestic waste system (black and green bags or HWRC). This system is free of charge but only for domestic households where the waste service is covered by the rates but commercial businesses must pay to get rid of their waste. As explained below:

*I did not know if there were any legal requirements; like what?*

(SH 4, 13 Rooms)

*No, it did not cost me anything because whatever I recycled, I just took it down there and put it in the various places for it.*

(SH 2, 15 Rooms)

Similarly, one of the hoteliers was found burning part of the hotel waste illegally as he did not have a license for incineration. Legally, a small hotel business must have a WTN for hotel waste disposal. He argued that it was cheaper to burn waste rather than dealing with a waste contractor to pick it up. He said:

*Also we burn some other types of wastes like wood, glass, cardboard and bricks. We have a truck; we fill it with rubbish and I take it to my brother in-law company may be once every two weeks because he has a bigger burner and it burned there. It is cheaper to burn than have it skipped. It is only 10 pounds a*
week but if we put the waste which we burn it with the collected waste we will pay more.

(Sh 5, 25 Rooms)

On the other hand, two hoteliers interviewed were fully aware of, or understood their legal obligations in regards to disposing of their hotel waste. Both of these hoteliers recognized that businesses must have a WTN and retain it for the council for at least two years to prove that they had dealt with an authorised waste carrier. Also, small hotel operators have the responsibility to get the waste out of their businesses and to present it properly for collection by the waste carrier in the scheduled time. A typical comment was:

*We are not allowed to just employ anybody to come and pick our rubbish. We have to employ people who are licensed and correctly throw; otherwise they can just go and tip it anywhere and charge us for it. As I say, we legally have to keep the WTN for the council for a minimum of two years that says that they are legally bound; they do collect and dispose in a responsible manner.*

(Sh 3, 28 Rooms)

4.6 Future motivation for implementing better SWM practices

4.6.1 Potential role of the local authority regarding SWM

- Providing the recycling and composting facilities

Initially, most of the respondents interviewed argued that they did not have the facilities to actually recycle and compost their waste. At the time of conducting this research, the local authority had not got a recycling and composting system for commercial businesses. This reflects that the social effect that can be emanated by the local authority is absent due to the
unavailability of the service (TPB). Hoteliers would not think that the local authority expected them to recycle or compost their hotel waste while there was no service provided (Subjective Norms). Tzschtentke et al. (2004:123) asserted that “businesses need to be assisted in the transition through the provision of adequate support, guidance and infrastructure”.

Hoteliers indicated that the local council should make it easy by providing the tools and facilities that would enable them to recycle and compost their waste materials. There should be collection of recyclable and organic waste on a regular basis. Revell and Blackburn (2007) similarly stressed on the importance of ‘doorstep’ collection in encouraging more businesses to recycle their waste. Furthermore, one of the hoteliers suggested that the waste storage bin should be divided into different sections because a small hotel did not have enough space to locate an individual bin for each waste stream produced, as explained in the excerpt below:

The bin should have several different compartments in there and possibly several different colour bags. So when you open the bin the organic can go in one, glass can go in another, paper can go in another one and it already be divided as you disposed it initially. Personally, I believe this is the only way forward to recycling. But we cannot put four or five large bins in the garden as the buildings are getting smaller and smaller. There is no space for them.

(SH 2, 15 Rooms)

The local authority should pay more attention to small hotel sector or at least find out the places where there are lots of small hospitality businesses and provide them a tailored SWM service. Currently, the council targeted and focused only on specific sectors to collect their waste, e.g. packaging
producers. Moreover, two of the respondents interviewed asserted that the council should provide common waste storage bins in specific places throughout the city designed specifically for commercial businesses, similar to those used for householders, to dispose certain types of waste, e.g. glass, as illustrated in the excerpt below:

*Obviously, we need certain places where we can dispose certain rubbish. The council should get in touch with us and offer the service. I know that they offer it to some communities. They should do that for small hotels as well especially in the main areas where there are many small hotels and guest houses. It would be easy to have one vehicle go through once a week collecting the recyclable.*

(Sh 7, 18 Rooms)

- **Providing incentives**

Previous research by Read (1997) showed that one of the main reasons for the failure in the UK’s SWM system is that there are no real incentives via pricing structures to reduce and recycle waste. Almost all respondents interviewed asserted that it was very important to encourage hoteliers with any sort of incentives to reduce and recycle their waste which in turn would help the public sector, partially, to meet their recycling and composting targets. They suggested that the council could reduce the charge of collecting recyclable waste or at least provide some kind of incentives (e.g. prizes, certificates or stickers) which hoteliers could use to marketing wide their hotels as responsible ones. For most hoteliers, this would be sufficient motivation to instigate the behaviour. These findings complement the evidence reached by Geller *et al.* (1982) who indicated that monetary
Incentives are the most essential means of motivating people towards recycling. One of the hoteliers commented:

Certainly, if the council can create an award as a sort of encouragement for all the hotels and promotes it more or send any little sticker or something that says that we have this hotel committed to environmental issues to put in your front window, it can be helpful.

(SH 3, 28 Rooms)

Alternatively, monitoring hotel waste is already an incentive for most hoteliers to manage their solid waste effectively, for example if hoteliers are able to reduce the amount of waste produced the disposal costs they incur will go down and this will save them money. However, the current ways which the council used in charging businesses for waste disposal need to be reviewed to support this approach. One of the hoteliers interviewed suggested that if the local authority had the option to charge businesses either by weight or by volume it would encourage more people because this would be an incentive for all hoteliers to cut down their waste to reduce costs, as illustrated in the excerpt below:

if they charge us by the bag, by the weight or by the volume then that will be an incentive to cut down how many bags you put out or how much they weight.

(SH 2, 15 Rooms)

- **Providing awareness and education**

The majority of respondents interviewed agreed that awareness and education was one of the most essential services needed to educate small hotel owners/managers about how they could possibly best manage hotel waste. Many hoteliers were found not aware with the implications of not
recycling and disposing of the waste into landfill, particularly to the environment (e.g. acid rain, ozone depletion and global warming). In general, there was not enough education to make business owners as well as the public aware of recycling. Hoteliers asserted that they had never received any information from the local council about SWM. Previous research (for example, Apotheker, 1995; Adams, 1998) showed that a lot of businesses would like to recycle but they lacked the necessary information to get started.

Furthermore, one of the hoteliers asserted that recycling was considered an individual attitude and consequently there should be something about SWM introduced in the curriculum in schools for children to learn and carried out through the higher education. This would help in directing and promoting people’s attitudes towards recycling and composting behaviours from childhood. She said: “recycling is an attitude of the person. It’s a childhood influence. It has to be introduced in schools for children to learn” (SH8). Girard and Kirk (1998) similarly reported a number of national and international initiatives targeted the education sector and aimed to encourage universities to develop an environmental policy and to introduce the environmental awareness into the curriculum (e.g. the Commonwealth Universities meeting to discuss people and the environment). One hotelier said:

I think some education about why? How to do it? I find most of the time that education does work if it is done properly, otherwise penalties isn’t it?  

(SH 2, 15 Rooms)
Interestingly, the interviews with hoteliers identified several different means which the council could use to get the message across all hotels. Among these: sending brochures or leaflets summarising the service and the importance of doing it; providing site-visits to see the physical layout of the buildings and advice hoteliers about how they could possibly reduce hotel waste; organising training sessions or seminars and invite all hoteliers to be trained and educated. However, only one respondent did not support the initiative of providing awareness and education. He said that: “we already know what to do; some of the guys who are working here already recycle at home” (SH4).

- **Providing recycling points for commercial businesses**

The majority of respondents enthusiastically supported the idea of Commercial Waste Recycling Centres (CWRC) where they could recycle their waste free of charge the same as domestic residents. The findings revealed that some hoteliers were actually using the domestic waste recycling banks illegally (e.g. SH2 and SH9). In this regard, it would be helpful if the council could build CWRCs with a small charge for the waste taken. Two hoteliers commented:

*Yes, if you would have a point in this area where you could take your clothes or bottles or bags people would generally take their things there and put it in.*

*(SH 8, 6 Rooms)*

*I think more recycling points would benefit a lot more of the community. This is actually needed in Cathedral Road and there is a lot of space.*

*(SH 7, 18 Rooms)*
Chapter four: Case study of non-GDES small hotels in a Welsh local authority

The proposed CWRC should be located closer to business communities for three reasons. First, operators would need a specific type of vehicle to transfer the waste, e.g. van, which was not available to every hotelier, and if so, not everyone was willing to put the rubbish in his car. Second, it would not be practical for a small hotel operator to drive for a long distance to dispose hotel waste into a recycling site as there would be more waste of resources (e.g. petrol, time and cost) going on than conservation. Third, it would be very difficult for elderly people to do it. This is best explained in the following excerpts:

_Certainly, it would have to be local. I will be quite happy sending my staff out if it takes them five minutes walking to take three or four bags to storage bins somewhere closer to the hotel. But it will not be practical for me, four days a week, taking some bags in my car and drive to some point. It is something that can be happen daily._

(SH 3, 28 Rooms)

_Absolutely, it needs to be somewhere local doesn’t it? There is no point to get in a car and using petrol and whatever to drive over to a recycling point because if everybody does that on this road then that’s a lot of pollution and using of resources._

(SH 2, 15 Rooms)

On the other hand, two respondents interviewed out of the nine felt negatively about providing CWRCs believing that it was difficult to follow up this route. One hotelier commented: _“No, I am not going to the bin. I am paying for the service then they will have to come and take up my rubbish”_ (SH 4).
4.6.2 Potential pressures to adopt sustainable SWM practices

- Legislation

The majority of hoteliers interviewed (7 out of 9) supported the legislative pressure and asserted that legislation would be one of the effective means that could be used to pressurize small hotel operators to recycle (see Figure 4.2). In fact, if there was legislation in place for recycling then all hoteliers should comply with it otherwise they would be fined. Generally, people do not want to break the law. One of the hoteliers demonstrated that they did not recycle because they were not requested to do it. However, hoteliers agreed that the government should not penalise business operators or force them to recycle until they provide an effective recycling system for commercial businesses and tell people how to do it in order to make it a realistic opportunity. When hoteliers have no excuse for not doing it then penalties will be workable. The excerpts below best explain some of their answers:

*It would be great, if there was some kind of legislation in place to recycle then of course we would recycle otherwise we would get fine.*

(SH 7, 18 Rooms)

*If they want to do it then they must do it compulsory. If there are formal legal requirements I will do it.*

(SH 8, 6 Rooms)

Whereas some respondents interviewed (2 out of 9) did not support the legislative enforcement to encourage hoteliers to recycle. As one hotelier said: “I do not think that is necessarily. I think any thing that is common good any normal person will endeavour to do it without any pressure. It all comes
back to providing the services to people to do it, that’s the whole thing” (SH3).

- **Increasing the charge of landfill and reducing the cost of recycling**

Most hoteliers interviewed (7 out of 9) believed that increasing the charge of landfill and reducing the cost of recycling would be a powerful way to encourage small hotel operators to reduce and recycle their waste. In practice, the government can influence hoteliers’ attitudes and promote their intentions towards the recycling behaviour by widening the gap between the landfill and recycle charges. This would make lots of small hotel operators think about it because they would be saving money. One of the hoteliers stressed the importance of initiating economic motivation arguing that when people had gas and electricity on meter they started to be efficient and careful in their usage (e.g. turn off lights, faucets and electrical appliances when not in use) because they would save money. This result is consistent with previous research (Barkanbus and Barkenbus, 1989; Maclaren and Yu, 1997; Ebreo and Vining, 2001) which indicated that the need to reduce waste disposal costs is the major motivation beyond business’s implementation of all waste reduction activities. One hotelier said:

*Of course, if they increase the charge for collecting waste and reduce the charge for recycling I think it will make people think about it because they may be saving money.*

(SH 7, 18 Rooms)

On the other hand, two respondents interviewed did not support the idea of increasing the charge of refuse collection. They asserted that small hotels
could not afford any increase in the charge of waste collection, and if it happened most of small hotel operators would prefer to close down or try to get rid of their waste illegally. As one hotelier said: “if you had £10 over, they gonna take it down the road and just dump it” (SH9). This result is consistent with that of Gray (1997) and Morris et al. (2000) who indicated that increasing waste disposal costs is more likely lead to boost fly-tipping or encourage commercial businesses to dispose of their waste into the domestic waste stream as a mean of evasion. One hotelier commented:

No, there are too many taxes already. Small business cannot afford to pay anymore. People will prefer to close their businesses than have anymore to pay. I mean gas is going up, electricity is going up and you cannot say to guests we are going to double you the cost; they will not come here.

(SH 8, 6 Rooms)

- Competition

The findings showed that two hoteliers interviewed (SH3 and SH9) felt that competition between small hotels could influence them to manage their solid waste effectively (Subjective Norms). Hoteliers asserted that if any other a small hotel operator in the local community were able to reduce their waste by composting or recycling or whatever they would be very interested to know how he could possibly do that. Interestingly, one of them asserted that recycling was an action that actually occurred behind the sight of customers. Therefore, if hoteliers could get the message over to customers by putting signs or marketing the hotel as a responsible business it would be effective motivator because customers might prefer to go to a hotel that cared about the environment. One hotelier said:
Yeah, because everybody wants to do his best. It would influence me if somebody next door able to just produce two black bags and I have six then I will wonder why.

(SH 9, 9 Rooms)

Conversely, more than half of respondents (7 out of 9) felt that the competitive factor would not pressurize them to make recycling. They argued that they did not pay any attention to what other hotels did. As most hotel owners/managers commented: “no, it would not encourage anybody to recycle” (SH8); “No, it would not influence small hotels to recycle” (SH5); “I don’t think it would affect the hotel because recycling happens behind the seen” (SH7); “No, it wouldn’t make any difference for me” (SH6); “Personally, I don’t actually pay any attention or give any considerations to what others do” (SH2). Hence, it appeared that the social effect that could be excreted by both competitors and local community was not persuasive to most hoteliers to motivate their SWM behavioural intentions.

Social responsibility

The MORI survey (2002) found that the social responsibility aspect was one of the most important factors that instigated people to make recycling. Indeed, the environment was considered one of the most significant aspects of some hoteliers’ corporate social responsibility. There were four hoteliers (SH2, SH3, SH8 and SH9), particularly those who actually handled their solid waste appropriately by recycling and/or composting, believed that encouraging hoteliers to tackle their environmental duties in relation to SWM would be an effective way towards the implementation of more sustainable
SWM practices in small hotels. One of these hoteliers stressed on the governmental role in providing more awareness programmes and campaigns to educate business owners as well as the public to tackle their social responsibility and to make them aware with the importance of recycling and how landfill contributes to the degradation of the environment. It is worth noting that ‘social responsibility’ was one of the main factors that motivated these hoteliers to implement either recycling or composting behaviours. As one hotelier commented:

*Definitely, that is why I am taking an active role in managing it personally. It is not just the cost but certainly the social effect. It has to be managed effectively across the city.*

(SH 3, 28 Rooms)

However, it was clear that encouraging non-GDES hoteliers to fulfil their ‘social responsibility’ alone would not be a sufficient mean of motivation to implement sustainable SWM practices. Hoteliers would not think each time when they threw something in the bin that it was going to have negative impact on the environment. The findings revealed that the majority of hoteliers had paid no attention to their social responsibility and undertook landfill as the main waste disposal route. Affirmatively, one of the hoteliers tried to exhibit favourable attitudes towards recycling arguing that it was very important to protect the environment for future generations. However, by the end of the interview with him and after ‘probing’ for more detailed information he said: “*I do not have any reason to do it. We are paying the council to pick up our bin and that is it*” (SH4). A possible explanation of this result might be
because the study served an ethical reason, namely SWM, where some hoteliers tried to give answers which were socially accepted.

**Figure 4.2: Potential pressure to adopt sustainable SWM practices**

![Diagram showing potential pressure]

### 4.6.3 Networking small hotels

The findings revealed that some hoteliers interviewed (4 out of 9) held favourable attitudes towards the idea of networking with other small hotels in relation to SWM and other environmental issues. It would be helpful if the council as the governmental body or other private organisations (e.g. Arena Network and hotel associations) could organise and develop such networks between small hotels across the locality or at least the areas which had lots of small hotels. These hoteliers believed that networking approach would be very beneficial to assist small hotel operators exchange, explore and discuss
the best ways for managing hotel waste. Currently, small hotels in the local authority did not have any kind of organization unlike larger hotels. As one hotelier commented:

*I think it will possibly work if we all work together. We have not got hotel organisation for small hotels. We are not the same as big hotels. If there were a group to encourage having a little meeting together to discuss our waste and would hold by the council. I am sure we would go.*

(SH 8, 6 Rooms)

It is difficult to manage solid waste on a one-way basis and one hotelier suggested that there should be a partnership between local council, general public and business operators. In fact, these partnerships will be beneficial in two ways: First, it will make people aware of how the waste can be managed properly and why. Second, it will help the government to consider the views of business operators and other interested parties in their future plans. Interestingly, one of the hoteliers added that the partnership should not inevitably be done between small hotels but it could also be done with domestic houses. Hoteliers argued that small hotels generally produced domestic quantities of waste. It seemed that hoteliers felt negatively about such governmental differentiation between small hotels and domestic houses in relation to SWM and wanted to get benefit from the domestic waste system by separating their waste together. As one hotelier illustrated:

*It does not necessarily between small hotels. If they just have six houses and sort them out and provide them with one bin for plastic, other for paper etc. Small hotels could separate their waste with these houses because the amount of waste that we produce is much similar of domestic houses.*

(SH 9, 9 Rooms)
On the other hand, many hoteliers interviewed (5 out of 9) did not support the formation of networks between small hotels. They felt that it would be difficult because of the competition factor between small hotels. Surprisingly, they perceived other hotels as a real threat to their businesses and thus they did not want to have any sort of communications with them. One of the hoteliers argued that networking small hotels would not provide any benefit to hotel operators in terms of SWM. He was a member in one of these organizations which termed it as ‘a failed organisation’ because he never came up with any new idea and thus felt that he wasted his time. Consequently, hoteliers had no intentions of cooperating with other hotel operators and sharing information about SWM. Instead, they preferred to handle their hotel solid waste individually.

### 4.7 Initial model for SWM in non-GDES small hotels

An initial model for SWM in non-GDES small hotels was developed as a result of the theoretical model (see Figure 2.12) and the findings attained from interviewing small hotel owners/managers in a Welsh local authority. The model captures hoteliers' attitudinal and normative beliefs together with their PBC beliefs towards varied SWM behaviours, which are considered the most significant factors to determine the hoteliers’ behavioural intentions (TPB) (see Figure 4.3).
Figure 4.3: Initial model for SWM in non-GDES small hotels

**Attitudes**
- Positive (ex.):
  - If the council provides me with the facility I will recycle
  - I look as many avenues as possible to at least control our cost
- Negative (ex.):
  - We get waste this morning, what should I do with it, eat it?
  - I know we do a lot of waste but we pay for it at the end
  - For a small hotel, it is not going to change the world

**Subjective Norms**
- Positive (ex.):
  - I would say 95% of the people will do it
  - I live here in this conservation area we like to keep it nice
- Negative (ex.):
  - My staff are not interested in recycling
  - I am sure customers will not take it seriously
  - I do not actually pay any attention or give any considerations to what others do
  - Look outside the hotel, there is a mess everywhere

**Perceived Behavioural Control**
- Internal barriers:
  - Lack of time
  - Lack of space
  - Cost
  - Producing small quantity of waste
  - Small
  - Employing a small number of staff
- External barriers:
  - Lack of recycling facilities
  - Lack of composting facilities
  - Lack of awareness
  - Cheap landfill
  - Manufacturers' production and packaging strategies

**Behavioural intentions**
- Positive
- Negative

**SWM behaviours**
- Prevention (2/9)
- Minimisation (3/9)
- Reuse (3/9)
- Recycle (3/9)
- Compost (3/9)
- Landfill (9/9)
**Attitudes:**

The Attitude component proved to have a major effect on hoteliers’ SWM behavioural intentions. According to the findings, some hoteliers had showed favourable attitudes towards prevention (2 out of 9), minimisation (3 out of 9), reuse (3 out of 9), recycle (3 out of 9) and compost (2 out of 9). Overall, it was noted that only four hoteliers out of the nine (SH2, SH3, SH8 and SH9) had exhibited positive attitudes and targeted some of the options of the waste management hierarchy. These favourable attitudes were formed as a result of the hoteliers’ perception of the environmental problems (e.g. climate change and acid rain) which occurred to the environment because of disposing of the waste into landfill. Likewise, some of these hoteliers believed that by adopting sustainable SWM practices they would help in protecting the environmental resources and at the same time would enhance commercial benefits to their businesses (saving cost). This was obvious in some of their behavioural and attitudinal statements: ‘if people realized that we cause acid rain … perhaps they may take it a bit more seriously’ (SH2); ‘I look as many avenues as possible to at least control our cost’ (SH3); ‘we try not to have too much packaging so we would not have too much rubbish’ (SH9).

Interestingly, the analysis identified a group amongst hoteliers (3 out of 9) who had showed clearly very positive attitudes towards recycling but their behaviour was constrained due to the unavailability of the recycling service from the public sector. They expressed their intention to recycle once they
had the service as it was indicated in one of the hotelier’s statement: ‘if the council provides me with the facility I will recycle’ (SH7).

In comparison, the majority of small hotel owners/managers felt negatively about SWM best practices except recycling. They viewed most of the sustainable alternatives listed in the waste management hierarchy as difficult and even did not see any favourable outcomes from implementing these options. Despite the destructive effect resulted from using the landfill option, hoteliers believed that landfill was the easiest and the most applicable SWM option for disposing of a small hotel waste. They shared the belief that a small hotel was producing too small amounts of waste to negatively influence the environmental resources. This had been reflected in some of their attitudinal and behavioural statements, including: ‘how we could cut our waste in this type of business?’ (SH7); ‘we got waste this morning, what should I do with it; eat it!!’ (SH1); ‘I know we do a lot of waste but we pay for it at the end’ (SH4); ‘I do not have any reason to do it’ (SH4); ‘for a small hotel, it is not going to change the world’ (SH5); ‘it is easy to landfill rather than recycling. It is easy for my operation’ (SH6).

Subjective Norms:
The findings revealed that the Subjective Norm factor had the least effect on hoteliers’ behavioural intentions. The majority of small hotel owners/managers perceived that the normative influence which could be created by significant others (e.g. customers, staff, competitors, local
community and local authority) was not influencing their SWM behavioural intentions. They believed that staff had no role to approve or disapprove the behaviour and even customers would not be interested in recycling. Moreover, they did not pay any consideration to their competitors or other parties in the local community in relation to SWM. Likewise, they did not think that the local authority was expecting them to recycle/compost their hotel waste as the authority still had not got a recycling/composting system for commercial businesses. This had been demonstrated in some of their normative beliefs: ‘my staff are not interested in recycling’ (SH6); ‘I am sure customers will not take it seriously’ (SH5); ‘I do not actually pay any attention or give any considerations to what others do’ (SH2); ‘look outside the hotel, there is a mass everywhere’ (SH4).

By contrast, a few hoteliers admitted that the subjective Norm variable could have a positive effect on their SWM behavioural intentions but mainly to recycle. Two hoteliers (SH3 and SH9) believed that staff would approve the behaviour as most of them already recycled in their homes. Two hoteliers (SH3 and SH8) also supposed that customers’ attitudes towards the environment had positively changed and thus would support the behaviour either. These hoteliers were willing to encourage staff and customer participation in their hotel’s SWM programme. Similarly, two hoteliers (SH3 and SH9) perceived that competitors as well as the local community could create a social pressure upon them to manage their solid waste effectively. This was illuminated in some of their normative beliefs: ‘I would say 95% of
the people will do it’ (SH8); some of the staff here do it at home, so once we do it, it will not be a problem’ (SH3); ‘yeah, if some other people do it, we will may have to do it as well to look as good as they are’ (SH3); I live here in this conservation area we like to keep it nice’ (SH9).

Perceived Behavioural Control (PBC)

The PBC variable had a great effect the same as the Attitude factor on hoteliers’ intentions. The findings identified a range of internal and external barriers impeding most small hotel owners/managers to implement sustainable SWM behaviours. The internal barriers focused in: lack of time; lack of space; cost; producing small quantity of waste; separation of the waste; smell; employing a small number of staff; higher rate of staff turn-over. Whereas the external barriers include: lack of composting and recycling facilities; lack of awareness; cheap landfill; manufacturers’ production and packaging strategies. Despite these aforementioned obstacles, some hoteliers, particularly those who had positive attitudes endeavoured to have control over SWM behaviours and overcome these barriers. For instance, hoteliers were constrained with the unavailability of recycling and composting services by the public sector. However, some hoteliers looked at different avenues by recycling part of the hotel waste streams privately and also making in-house composting.

Behavioural intentions

Intention is the preceding component to behaviour in the TPB model. Hoteliers’ intentions towards SWM behaviours were determined mainly by
their attitudes towards the behaviours together with the PBC component, whereas the Subjective Norm variable had the least impact on hoteliers’ behavioural intentions as discussed above. Applying the TPB, a few hoteliers had positive intentions towards SWM behaviours (prevention, minimisation, reuse and compost) which led them to take an action. In addition, six hoteliers out of the nine had favourable intentions towards recycling, with some of them (3 out of 9) intended to do it if they had the service. Conversely, the majority of hoteliers exhibited negative intentions to implement sustainable SWM behaviours with the exception of recycling. Unfortunately, these hoteliers stopped at the inaction stage because of their negative behavioural intentions. This highly recommends that the government intervention is much needed to re-influence hoteliers’ behavioural intentions via providing an appropriate support and pressure and thus drive them to behave in an environmentally-responsible way in relation to SWM.

**SWM behaviours**

According to TPB, hoteliers’ behavioural intentions towards SWM behaviours were turned into action or inaction. Indeed, most of the sustainable alternatives listed in the waste management hierarchy (prevention, minimisation, reuse, recycle and compost) were not widely implemented in non-GDES small hotels as a result of hoteliers either having negative attitudes or perceiving a difficulty to implement these options. Regarding prevention, only two hoteliers out of the nine reacted positively towards
prevention and undertook some practices to prevent the waste at source. Similarly, three hoteliers out of the nine held favourable attitudes towards minimisation and tried hardly to minimise waste throughout product lifecycle. In addition, three hoteliers out of the nine believed in reusing and adopted certain actions to reuse waste materials either in-house, donation to charities or selling.

Concerning recycling, it was found that three hoteliers out of the nine were actually recycling part of the hotel waste streams while there was another group of hoteliers (3 out of 9) showed very positive attitudes towards recycling and intended to recycle if they had the service from the public sector. Regarding composting, only two hoteliers out of the nine had considered making in-house composting and felt positively about it. Lastly, landfill was used by all hoteliers but to different degrees. As three hoteliers out of the nine implemented landfill only for disposing part of the hotel waste streams whereas the majority of hoteliers (6 out of 9) were highly prioritizing landfill as a primary SWM option.

4.8 Summary

This case study highlighted a significant difference in SWM practices between non-GDES small hotels, with a few hoteliers implementing sustainable SWM practices while the majority undertook landfill as a primary SWM option for disposing their hotel waste. With the exception of recycling, most hoteliers did not value the sustainable options of the waste
management hierarchy (e.g. prevention, minimisation, reuse, compost) believing that these alternatives were not workable for managing their hotel waste. Indeed, most hoteliers held favourable attitudes towards recycling and there was a group of hoteliers interviewed who was very willing to recycle if they had the service from the public sector. Moreover, most hoteliers felt negatively about incentivizing staff financially and even discouraged customer participation in the hotel’s SWM programme. Likewise, most hoteliers did not intend to exploit any potential PTB system. Interestingly, this chapter had identified potential support and pressures to drive small hotel owners/managers to handle their solid waste sustainably.

The results imply that waste carriers, either public or private waste carriers, could play a significant role in supporting and influencing SWM practices in small hotels. Therefore, there was a need to explore the external factors that had shaped hoteliers’ experience and not only focus on the internal world of small hotel owners/managers and their explanation for responding to the different SWM issues. Consequently, the research will now focus on investigating the public and private waste sector’s SWM operations, which constituted a significant part of this case study (see chapter six). Revell and Rutherford (2003:27) “the environmental performance of small businesses cannot be solely attributed to characteristics inherent within them; it is also related to the way in which societies influence and engage with business – and the way in which business is incorporated into the environmental policy agenda”.
CHAPTER FIVE:

CASE STUDY OF SMALL HOTELS COMMITTED TO GDES IN WALES

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5.1 Introduction

This chapter presents and discusses the findings obtained from a case study of small hotels committed to GDES in Wales. It starts with an overview of the development of GDES. It highlights hoteliers’ commitment to environmental responsibility and investigates the environmental performance undertaken. It next explores hoteliers’ intention to progress further to achieve higher levels of GDES. The chapter then moves to discuss hoteliers’ attitudes towards the implementation of all the options listed in the waste management hierarchy. Furthermore, it investigates hoteliers’ attitudes towards encouraging staff and customer participation in the hotel’s SWM programme and then explores their attitudes towards the extent of participating in future national PTB systems. The chapter also highlights hoteliers’ compliance with the legal requirements for disposing of hotel waste and discusses future motivation for implementing better SWM practices in small hotels. It ends with a modified model for SWM in GDES small hotels and then summarizes the findings.

5.2 Development of GDES

Arena Network’s environmental coordinators argued that it was difficult for small businesses in Wales to certify with ISO 14001 and EMAS as those types of EMS were designed for larger businesses. Previous research (e.g., Gerstenfeld and Robert, 2000; Holt et al., 2000; Kuhndt and Von Geibler, 2002; Pimenova and Van der Vorst, 2003; Chavan, 2005) had reported that ISO 14001 and EMAS were not appropriate implementation of EMS to fulfil the needs of small businesses. Consequently, Arena Network started to think
about developing an environmental standard suiting the needs of all types and sizes of organisations. In 2000 they developed GDES where the first two entry levels were more appropriate to meet the needs of small businesses. The standard was originally launched in Wales but it could be implemented for any business all over the UK and Northern Ireland. At the time of conducting this research, there were about 1000 organisations certified with GDES across the UK and Northern Ireland. Hillary (2000) indicated that the adoption of EMS was an effective way to improve small businesses’ environmental performance. It provided the business with a structured approach for implementing environmental performance measures into the daily operations (Chavan, 2005).

There are five levels of GDES which small hotels can pass through (see section 2.2.5). The findings showed that most small hotels committed to GDES (7 out of 9) were at Level Two which was about complying with the legislation while only two hotels had achieved Level Three. There are four main documents required to achieve Level Two GDES, including: the initial environmental review (see section 5.3.3); the environmental policy (see section 5.3.1); the environmental improvement plan (see section 5.3.4); the legal register (see section 5.9). One of Arena Network’s environmental coordinators indicated that the majority of small businesses’ operators did not have the expertise to develop these documents themselves. Thus they paid Arena Network to assist them preparing these documents and implement GDES. Previous studies (Hillary, 1998; Ryan, 2003) revealed that the
implementation of EMS was considered a major challenge facing most SME operators. They lacked the experience to formalize environmental policy and/or undertake a comprehensive environmental audit.

Arena Network’s environmental coordinators argued that there were no specific requirements from GDES small hotels in regards to managing their solid waste, e.g. recycling. Instead, Arena Network emphasized hoteliers’ legal obligation in relation to SWM to make sure that they disposed of their waste in a proper manner through a licensed waste contractor. This indicated that if a small hotel disposed of its waste into landfill they still would be eligible to get the standard. One of the coordinators interviewed added that EMS was totally different comparing to quality standards. The EMS did not specify what an organisation should do as long as they committed to the principle of continual environmental improvement, whereas with the quality standards businesses must achieve certain practices in the first place to get the award. He said:

*EMS is different of course compared to quality standards. With quality standard you have to do certain types of soups, you have to have a dishwasher or that sort of things and you tick the boxes. However, the EMS does not specify what you have to do but you have to do something that is relevant and appropriate to the size of the organisation. So, as long as there is a continual improvement then we do not say exactly, for example you must recycle 50% of your waste or you must do that; whatever EMS is it does not actually specify that sort of thing.*

(Coordinator 2/Arena Network)
5.3 Small hotels’ commitment to environmental responsibility

5.3.1 Developing an environmental policy

The environmental policy is considered a mandatory part of GDES and thus any business that intends to get certified with the standard must have an environmental policy. It should be based upon the information obtained from the hotel’s environmental review. The results revealed that the majority of small hotels committed to GDES (8 out of 9) had an environmental policy aimed to identify the key impacts of their operations on the environment. It also demonstrated hoteliers’ commitment to pollution prevention, continual environmental performance improvement and to comply with the relevant legislation.

However, practically, some hoteliers (6 out of 9) adopted various environmental measures to achieve the targets of their environmental policy in terms of reducing consumption of water, energy and reducing waste going to landfill. Hoteliers reviewed, updated and communicated their hotels’ environmental policy regularly to all related parties, including: customers, suppliers and staff. Previous literature (Kirk, 1996; Starkey, 1998; Woodside et al., 1998) similarly indicated that the environmental policy must be communicated to all interested stakeholders to attain their support in the hotel’s environmental programme. One hotelier said:

Well, we have an environmental policy. We did it for GDES. The targets are constantly helping the environment. We are always reviewing and looking at the way we do things and constantly looking at how to improve processes.

(SH2/GDES, 8 Rooms)
Two hoteliers interviewed made the process of putting the hotel’s environmental policy on the website part of their marketing plan believing that it could create a competitive advantage over other hotels. They placed the GDES logo on their hotels’ websites and linked it with their environmental policies to make all people aware that they were GDES certified. When people click on the logo it takes them directly to the hotel’s environmental policy (see Figure 5.1).

Figure 5.1: Promoting the environmental policy on the hotel’s website

On the other hand, some hoteliers interviewed (2 out of 9) were ignorant of the targets of their hotels’ environmental policy. One of these hoteliers did not react positively towards environmental issues. This is due to the fact that
some hotels committed to GDES developed and maintained environmental policy mainly to fulfil the paperwork requirements of GDES rather than performing in an environmentally-responsible manner. They developed an environmental policy initially when they first applied for the standard and once they got the award they forgot about it. This is best explained in the following excerpts:

    I guess one of the main things of the environmental policy is sort of recycling of what we consume...oh is it? I thought that the policy was on our website. I can fix that; I can put it on.

    (SH4/GDES, 29 Rooms)

    Ok let me have a look to it.

    (SH5/GDES, 27 Rooms)

Surprisingly, the findings also revealed that one of the hoteliers did not have an environmental policy although the hotel was still registered on the GDES website on the list of organisations which achieved GDES Level Two. The owner of this hotel asserted that they were granted GDES Level Two in 2003 and since that time he had never been contacted by Arena Network for reassessment. However, from the perspective of Arena Network which holds the main responsibility over GDES, any business certified with GDES must be reassessed upon the completion of its certificate which normally lasts for 12 or 24 months. Thus, committed businesses would be revisited by one of Arena Network team to make sure that the organisation had maintained the quality of the standard and had continued in improving their environmental performance in order to renew their GDES Certificate. However, this was not the case with this small hotel whose owner said:
I am not sure actually which level we are. My mom applied for the standard and that was actually five years ago and we got the GDES. We have been here for five years and I have not seen anybody from GDES.

(SH6/GDES, 15 Rooms)

5.3.2 Appointing an environmental officer

Hoteliers did not appoint someone with sole responsibility for environmental issues because of the size of the operation. They argued that a small hotel cannot afford to just employ an environmental officer in order to deal with GDES and other environmental issues within the operation. Instead, the environmental responsibility was considered a part of the duties of the hotel owner/manager, for example, to ensure the effective implementation of the environmental performance measures; to keep the environmental policy up to date; to keep staff aware of environmental issues. One of the hoteliers asserted that the environmental responsibility of a small hotel should not be a specific duty of one person but all staff in the hotel should be environmentally aware and take part whatever department they were in. As one of the hoteliers commented:

No, size of the hotel does not warrant that. I do my duty really to keep an eye on that and to monitor as best as I can. Everyone is pretty good actually. Again in a place like this it is too small to just have an environmental officer.

(SH7/GDES, 19 Rooms)

5.3.3 Undertaking an environmental audit

Hoteliers argued that they were part of GDES and they had an initial environmental review undertaken in cooperation with Arena Network when they certified with the standard. Both Maltby (1995) and Kirk (1996) similarly
asserted that small businesses’ operators normally sought advice and support from external consultants to carry out the environmental audit. In addition to the initial environmental review, some hoteliers (e.g. SH1/GDES and SH2/GDES) had considered undertaking an internal audit on an annual basis to identify their activities that could have an impact on the environment and evaluate the current environmental competence and performance.

In fact the initial environmental review undertaken by Arena Network was very comprehensive considering a variety of issues, among these: the hotel activities; environmental awareness and training needs; existing environmental management practices; relevant environmental legislation; building, infrastructure and surrounding physical environment; land contamination; pollution risk assessment; use of natural resources and raw materials; energy and water consumption; water discharge; emissions to atmosphere; waste management; environmental performance of contractors and suppliers. The information gathered from the review was documented and updated periodically.

Interestingly, the majority of hoteliers interviewed believed and admitted that their hotel operations would negatively impact the environment. A belief which, in fact, led some of the hoteliers to undertake a step forward and implement numerous control measures to eliminate and/or minimise the impact of their operations. One of the hoteliers considered communicating the major impacts of his operation to staff by placing a statement of the
hotel’s environmental impacts on the staff notice board. This would essentially help in encouraging staff to work towards reducing their impacts on the environment.

Hoteliers perceived that waste disposal into landfill was the most common impact which their operations had on the environment. One hotelier said: “it was only the waste that we put through the big bins which taken away to landfill” (SH7/GDES). Moreover, some hoteliers (4 out of 9) asserted that their operations extensively consumed large amounts of energy as they either had old buildings which were not energy efficient or incorporated ineffective heating systems. Unexpectedly, two hoteliers used coal for heating which resulted in several adverse environmental impacts, (e.g., emission of greenhouse gases). Furthermore, two hoteliers interviewed indicated that their operations contributed in increasing the impact of carbon footprint as a result of having separate deliveries for their hotels’ purchases and also the increased number of customers who came to their hotels by car.

5.3.4 Setting an improvement plan

When Arena Network’s assessors reassessed the hotel for renewing its certificate they discussed with the hoteliers the areas that needed to be improved and how. In this respect, the majority of hoteliers (8 out of 9) had a plan in place to improve their hotels’ environmental performance; such a plan was considered a major requirement for achieving GDES. The plan was produced mainly from the information gathered through the environmental
review and in line with the commitment made in the environmental policy. It identified the key environmental impacts of the operation and set specific targets for environmental performance improvement with a timescale for achievement. Indeed, the hotels’ improvement plans were realistic intending to reduce water and energy consumption and also to reduce waste going to landfill. Furthermore, one of the hoteliers asserted that the hotel’s environmental improvement was a step by step development process as long as they renovated the hotel they would look for the most sustainable sources. He said:

_It is not just because we are an eco-hotel we are going to break everything down and full with as many eco-things as possible. But when we develop; when we replace our boiler system we are probably going to look at biomass boiler system; that most economical. Also, when we replaced our mattresses we would use eco-mattresses you know and we would use sustainable furniture._

(SH1/GDES, 12 Rooms)

### 5.4 Environmental performance in small hotels committed to GDES

#### 5.4.1 Environmental measures undertaken for achieving GDES

Most of the hoteliers interviewed had actually implemented a lot of low and/or no cost environmental measures to conserve water, energy and reduce waste. Among these: installing energy-efficient light bulbs; putting heaters on timers; turning off thermostats and closing curtains when customers not in rooms; encouraging staff to turn off lights and other appliances when not used; installing showers in guestrooms rather than baths; checking for dripping taps and water leaks; installing hippo bags in older toilet cisterns; collecting rainwater to use in the garden; installing refillable soap and
Chapter five: Case study of small hotels committed to GDES in Wales

shampoo dispensers in bathrooms; minimising and recycling most of the hotel waste streams. From another perspective, one of the hoteliers asserted that small hotels could not afford the cost of incorporating new technologies or systems (e.g. a key card system) to achieve greater energy and water savings. He commented:

*It is only 19 bedroom hotel, if I was 30 or 40 bedroom hotel then probably I would go for a system when you put the key in the door all the lights come on and then when you leave everything goes off, but again as a hotel of this size it is difficult to make that sort of saving because it costs you a lot to incorporate the system.*

(SH7/GDES, 19 Rooms)

It was found that some hoteliers interviewed (2 out of 9) were focusing more on the implementation of energy and water conservation measures rather than SWM practices. Both of these hoteliers believed that these areas of water and energy management were associated with achieving greater financial savings and easy to target rather than finding out sustainable routes for the different waste streams produced. As one hotelier said: “our goal at the moment is to concentrate mainly on power; trying to save more. I think really because this is the easiest area to save” (SH7/GDES). Similarly, Knowles et al. (1999) investigated environmental practices undertaken in London’s hotels and found that most of the actions taken aimed to reduce energy and water consumption.

5.4.2 Measuring the effectiveness of the hotel’s environmental performance

Most small hotels committed to GDES set up an environmental file as a central point for all environmental information within their operations. The file
included a variety of environmental records: the hotel’s environmental policy, environmental review, improvement plan, GDES assessment reports, WTN, utilities consumption spreadsheets, waste disposal graphs, statement of environmental impacts and other environmental information. In fact maintaining such documented data had helped most hoteliers to measure the effectiveness of their hotels’ environmental performance.

Most hoteliers argued that they monitored the consumption of utilities (water, gas and electricity) as meter readings were constantly taken on a monthly basis. They developed spreadsheets to track the usage and compare the consumption figures, linked to the occupancy levels, with that of previous periods to find out if there was any changes happened, why and how best they could improve to reduce the usage. One of the hoteliers considered communicating utilities consumption figures to all staff to make them aware of the outcome of their contributions in the hotel’s environmental performance. Moreover, some hoteliers (3 out of 9) considered monitoring waste production and disposal routes. They developed charts to show how much waste had been produced, how many lifts had been taken and what percentage out of the hotel waste had been recycled, composted and landfilled. One of the hoteliers added that they looked at a system to weighing all food items going into the production process and then weighing food waste produced in order to optimize food waste generation. As one hotelier asserted:

*We monitor the utilities, the usage, the waste and that sort of thing. Meter readings are taken on a monthly basis and*
spreadsheets have been developed to record this information. Consumption figures are then communicated back to all staff.
(SH5/GDES, 27 Rooms)

5.4.3 Support provided by Arena Network

Two hoteliers out of the nine asserted that Arena Network was very supportive to committed GDES hotels. They got a lot of advice and information on the various environmental issues within their operations from Arena Network. One of these hoteliers indicated that most of the eco-practices undertaken were originally suggested by the assessors of Arena Network. They had helped him particularly on SWM issues by putting him in contact with various organisations that would help with the hotel waste (e.g. charity organisations). One hotelier said: “I suppose Arena Network is our biggest source of information” (SH1/GDES).

However, the majority of hoteliers interviewed (7 out of 9) argued that they received very little or no support from Arena Network to enhance the hotel’s environmental performance. One of the hoteliers indicated that Arena Network was initially offering GDES businesses free training courses and advice to make them aware of the environmental issues but now they stopped their free service. She said: “they provided us with some information in 2004 but until now I received nothing” (SH8/GDES). Another hotelier (SH4/GDES) felt that the standard was losing the momentum as Arena Network had no longer provided any support to committed GDES businesses and also they were going to charge committed organisations for the reassessment.
As a result, some hoteliers (3 out of 9) did not rely anymore on Arena Network as a source of information and had investigated for other sources of information to promote their hotels’ environmental practices. They sought advice from other environmental organisations, including: Carbon Trust and Envirowise. They had attended most of the training courses offered by these organisations which aimed to educate businesses’ owners/managers on how to tackle environmental issues. They constantly received notes and information from both organisations about the current legislation and other environmental issues. Moreover, these hoteliers asserted that Carbon Trust had provided a site visit to their hotels and advised them on how to become more energy efficient and reduce carbon emissions. They argued that they got more feedback and support from Carbon Trust and Envirowise rather than Arena Network.

On the base of Arena Network, one of the environmental coordinators interviewed argued that Arena Network lacked the financial and personnel resources to cope with such huge number of GDES organisations. Clearly, the free support provided by Arena Network to educate GDES small hotels on how to undertake eco-friendly practices was very modest. They just provide advice on request through a telephone helpline service and also offer very generic workshops for different business sectors with the aim of outlining the benefits and requirements of GDES. By contrast, Arena Network currently provides a range of support services but for fees (e.g. initial environmental review). Similarly, they considered providing a range of
specific training courses in relation to energy, water and waste management. However, such courses were too expensive for small hotel operators to attend, for example, they run three days waste management course for £1200. As one business’s coordinator said:

*It is not Arena Network’s job to make sure that everyone has got support. We do not go around knocking everybody’s door. Obviously, we do not just deal with tourism businesses but we deal with every sector; every size within our region. So, we do not have the resources to just go out and knock everybody’s door.*

(Coordinator 1/Arena Network)

One of Arena Network’s environmental coordinators asserted that they currently lacked the funding to work with more businesses and assist them to implement GDES. Accordingly, Arena Network tended to provide their services on a commercial basis rather than the free service they used to offer. As one business’s coordinator said:

*We have been told that everything goes a little bit commercial from our point of view. So, the client would have to pay for everything rather than the free service that we were offering in the past.*

(Coordinator 1/Arena Network)

At the time of conducting this research, if any business wanted to certify with the standard they had to pay a standard fee equal to £75 for the assessment, to make sure that they were complying with GDES requirements. However, the implementation costs of GDES vary according to the type and size of business. For a small hotel with more than 10 employees, the likely charge for the assessment and implementation of Level Two GDES would be £500. This would actually create a problem to Arena Network in relation to
maintaining businesses continue certifying with GDES as most hoteliers interviewed argued that if Arena Network was going to make a charge for the standard they would not think to certify with it. One hotelier said:

*It is a privately owned hotel of 21 bedrooms in the middle of the countryside. So, the last thing you want to do is to spend on an investment that may not work out.*

(SH8/GDES, 21 Rooms)

Nevertheless, Arena Network still covered some local authorities in Wales and offered them a free implementation service of GDES but only for Levels One and Two. These local authorities include: Cardiff, Newport, Wrexham and Flintshire. This reflected that if any business located within these local authorities and wanted to get Level Three or Four or Five they would have to pay Arena Network to implement the standard for them.

5.5 Hoteliers’ intentions to progress further to achieve higher levels of GDES

It was found that three hoteliers out of the nine had an intention to progress further to achieve higher levels of GDES. One of these hoteliers indicated that they had just achieved Level Three GDES and they wanted to improve and go forward to get Level Four. Indeed, they always think of new ideas to become more environmentally-efficient. Moreover, one of the hoteliers asserted that they were certified with Level Two GDES and they intended to progress forward to achieve Level Three. However, they got a lot of confusion about the accreditation process. Thus, they contacted Arena Network asking for advice or training on the requirements of Level Three GDES and how they could carry it out but, unfortunately, they got no
response. Interestingly, the actual motivations of these hoteliers to achieve higher levels of GDES were centred on helping their businesses economically and meeting their commitment in helping the environment. Moreover one of the hoteliers was financially supported to achieve Level Three. She said:

When we started the process we were helped by an organisation that would help small businesses in Monmouthshire. They offered to give us a bit of support...basically we agreed that they were going to pay 70% of all the cost and we would pay 30% of it.

(SH8/GDES, 21 Rooms)

On the other hand, the majority of hoteliers (6 out of 9) were certified with Level Two GDES and they did not have any intention to go to the next step and achieve Level Three arguing that it was difficult for a small hotel operator to manage it. The amount of the paperwork and recordkeeping required for Level Three are quite extensive. Most hoteliers indicated that there was no need for their operations to work towards attaining Level Three believing that it was not going to be of any benefit to them. They felt that Level Two was very achievable for small hotels as it suited their needs. One of the hoteliers added that Level Two was the standard which was expected from a small hotel and Level Three was the further point which a small hotel could go through, whereas Levels Four and Five were more appropriate for larger businesses. One of the hoteliers said:

When we were operating here we were very busy. I think it was very difficult to go any further. We could not do Level Three or Four because of the type of the business we were.

(SH4/GDES, 29 Rooms)
From the perspective of Arena Network, the coordinators interviewed agreed with the hoteliers that Level Two was so applicable and appropriate for a small hotel to stand at. They did not even consider pushing small hotel operators to go any further than Level Two when they reassessed them. They argued that there was no need for small hotels to pass Level Two because it would be more work for them in terms of the amount of procedures and recordkeeping required to achieve Level Three or Four. Moreover, the cost and time would be quite prohibitive for small hotels to go any further from Level Two as it was expensive and time consuming to run a formalised EMS. One of the Arena Network’s environmental coordinators indicated that it did not mean that going to higher levels of GDES would increase the benefits to the business. With Level Two, small hotels still got the same benefits of the higher levels as long as they worked in line with a continual improvement plan. One business’s coordinator said:

*No, they do not need to go any further than Level Two and we won’t push them either. Going to higher levels did not necessarily mean an increase of benefits to them. For most small businesses, it would be a waste of their time and money to do so. Our job when we are coming to audit each time is to say “right, you have done those targets where is your new improvement plan for next year and so on and so on”. That is the key thing.*

(Coordinator 2/Arena Network)

### 5.6 SWM practices in small hotels committed to GDES

#### 5.6.1 Prevention

Most hoteliers (6 out of 9) held favourable attitudes towards prevention of waste at source. As indicated in TPB, hoteliers’ positive attitudes towards
prevention had significantly influenced their behavioural intention and motivated them to develop a green purchasing policy aimed to prevent waste at source and buy from local suppliers. Hoteliers believed that developing a green purchasing policy could support the local and business economies, protect animal welfare and support the environment. One of the hoteliers asserted that they developed their ethical purchasing policy with the assistance of some specialised organisations, including: the Chartered Institute of Purchasing and Supply (CIPS) and the Ethical Training Initiative (ETI). These organisations advised hoteliers on the principles of ethical purchasing and provided them with a list of producers and suppliers who were environmentally-responsible. Moreover, some hoteliers (3 out of 9) considered promoting their ethical purchasing policy to all stakeholders, including: suppliers, clients, employees and local community.

Hoteliers considered buying environmentally-friendly products. They avoided buying disposable items (e.g. paper plates and cups) or items that could have an impact on the environment, e.g. aerosol and harmful cleaning detergents. The results showed that two hoteliers were part of the Welsh Organic Scheme (WOS) where all their products and foods served to customers were organic with less or no impact on the environment. Moreover, hoteliers adopted varied practices to cut down waste at source. They considered buying products with longer lifespan and keeping their purchases down to necessity. They tried effectively to control packaging waste by undertaking numerous ways, including: buying items loose; buying
items with less or no packaging; buying in bulk quantities with the least amount of packaging. This is best explained in the following excerpts:

_We do not buy in packaging anyway, we buy food fresh everyday. We do not store in deep freezers, we buy in small quantities and that itself reducing our waste._

(Sh2/GDES, 8 Rooms)

_In relation to packaging, we are trying not to buy in whole packs, we will buy individuals. If you buy twelve items they will come in a case made from polutine and cardboard but if you buy only one or two items of that particular thing we will not get the packaging for the whole twelve and the supplier will put it in a box with the other items and so we are saving on packaging._

(Sh3/GDES, 23 Rooms)

Moreover, some hoteliers interviewed (3 out of 9) were very interested to deal with suppliers who had an environmental policy or at least were environmentally aware of the principles of ethical purchasing. They continuously reviewed and assessed the environmental policy of their suppliers and prioritized those who used recycled products. In terms of TPB, it was clear that hoteliers perceived very little or no social influence (Subjective Norms) from suppliers to undertake green purchasing practices. Instead, some hoteliers delivered their hotel’s environmental policy to suppliers and encouraged them to reduce the road miles of purchasing. As one hotelier asserted:

_We ask our suppliers when they make an order, i.e. vegetables to source it from as closest as possible. So, we get the minimum road miles to get the product. We get the supplier thinking as well. All of the suppliers that we do use are part of the WOS, so they are all environmentally aware._

(Sh1/GDES, 12 Rooms)
Most hoteliers interviewed (6 out of 9) considered buying from local sources as one of the hoteliers claimed that they had a menu called ‘15 miles’, which meant that all products for that menu sourced locally within 15 miles away from the hotel. Moreover, one of the hoteliers was not only interested to buy from local sources but also he played a significant role in the local community persuading other businesses’ owners to deal with as most local suppliers as possible to minimise their carbon footprint and thus reducing their impact on the environment. Interestingly, he arranged with other small hotel operators in the locality, particularly those who dealt with the same suppliers, to receive deliveries in the same day.

Furthermore, one of the small hotels committed to GDES was also a member of Considerate Hoteliers Association. Considerate Hoteliers is a green hotel association involves a group of professionals within the hospitality industry who are deeply committed to a policy of waste, water and energy management and also committed to a policy of local purchasing. This hotel was the first member to join Considerate Hoteliers in Wales and also represented the smallest establishment among all the 50 members in the UK. In 2007, the hotel was awarded the UK champion for procuring local food and reducing food miles. The hotel achieved this award through purchasing of food items from local suppliers, reducing food miles and thus helping sustain the local economy. Interestingly, the hotel owner asserted that they used the public transportation to deliver some of their products and such behaviour
saved them time and money. In 2005 they set up the only food transportation system using the railway in Britain. He explained:

I was buying a smoked salmon which was arguably the best smoked salmon in Britain. I had to drive to this market all the time and this was costing me time and money. So, what we did after discovering that the supplier was very close to the railway we approached the Wales Trains to transport the product on the railway. So, we set up in January 2005 the only food transportation system in Great Britain which charged the supplier nothing. The cheapest ticket that could come up for a train was a pet ticket. So, my smoked salmon in a box travelled as a dog, as far as the ticket was concerned. The supplier puts it on the train, pays for the ticket and rings me up. So I know when the train is coming in. I go to the station pick it up from the train. That saved me time and money.

(SH2/GDES, 8 Rooms)

On the other hand, some hoteliers interviewed (3 out of 9) felt negatively about prevention of waste at source and even expressed their negative attitudes towards buying recycled products believing that such products were more expensive and always had quality problems. Linking with TPB, these hoteliers’ negative attitudes towards prevention prohibited their action. They built their purchasing decisions mainly upon the cost, the quality and the need of the product, whereas no attention had been paid to the environmental attributes of the products. Moreover, they considered buying in large quantities with excessive packaging and from national suppliers who located a long distance away from their operations. As one hotelier said: “I did not care where it came from. I did not care how it got to me as long as I could make some money out of it” (SH6/GDES). They believed that there was no way to reduce packaging waste as all products nowadays were packed in various types of packaging. One hotelier said:
We have no choice to reduce packaging; they come as they are. It is difficult to buy items loose because we are buying in big quantities. For example, we buy 10 bags of potatoes at the same time so you cannot bring them loose.

(SH4/GDES, 29 Rooms)

5.6.2 Minimisation

Minimisation was considered a valuable option to small hotels committed to GDES to cut down their waste on a daily basis. Almost all hoteliers interviewed (9 out of 9) reacted positively towards minimisation believing that it could provide a good financial business sense in terms of reducing disposal costs. As one hotelier commented: “I believe the less waste we produce the less money we are going to pay” (SH8/GDES). Linking with TPB, these favourable beliefs and attitudes towards minimisation had led hoteliers to find some ways to perform the behaviour. They adopted various practices to reduce the amount of waste streams produced particularly, food, paper and packaging waste. In this respect, one of the hoteliers arguably indicated that most of the hotel waste produced primarily by customers rather than the hotel itself and it was very difficult to control that source of waste.

Hoteliers had considered cooking to order and this had substantially reduced food waste. One hotelier demonstrated that they normally asked customers to reserve their meals one night in advance in order to make their selected items available. Thus, the hotel could know exactly, for instance, how many customers would have lunch or dinner and cook accordingly. For a small hotel, it was not just a case that the customer could go to the hotel restaurant and order a menu. This reflected the fact that customers could contribute
effectively in reducing the hotel food waste. Moreover, most hoteliers considered changing and improving their food preparation techniques so as to cut down the amount of food waste yielded during the production stage. They employed experienced persons (e.g. chefs) who carried out their responsibilities in a professional way. Lastly, some hoteliers considered planning their menus in a sustainable way. For instance, by removing unnecessary items and not putting garnish on the plate. As one hotelier commented:

*We try not to over complicate the menus. We do not have unnecessary products, we do not have garnish on the plates. We do not believe in that because I think at the end of the day it is just waste. So, it is basic food but good, tasty and local.*

**(SH1/GDES, 12 Rooms)**

Furthermore, hoteliers tried effectively to reduce paper waste by undertaking various practices. They set up their printers to print automatically on both sides of the paper and also they avoided printing unnecessary documents. They used the electronic mail for all internal communication between departments and encouraged people to book on-line, so that they did not have to post them a confirmation letter. Similarly, if someone asked for a brochure they would encourage him to look at the hotel’s website. As one hotelier said: *“We used the e mail a lot more. We used online booking service and we tried to discourage sending brochures out”* (SH3/GDES). Moreover, most hoteliers interviewed tried enthusiastically to reduce packaging waste either by recycling or taking it back to suppliers. In addition, some hoteliers (6 out of 9) cut down their usage of plastic bags by 80% as they bought their own reusable bags and boxes.
5.6.3 Reuse

All hoteliers interviewed (9 out of 9) demonstrated favourable attitudes towards reuse arguing that it could prevent a wide range of waste materials to enter the waste stream. Practically, seven hoteliers out of the nine had largely relied on reuse as a significant SWM alternative in managing hotel waste. Clearly, the attitude component of TPB reflected that hoteliers felt positively towards the reuse alternative and thus they had the intentions to perform the behaviour. They considered reusing waste materials either in-house or selling them or giving them to charities. In this respect, most hoteliers were very keen to reduce their consumption of paper and plastic bags which extensively used on a daily basis. They encouraged guests to reuse towels during their stay in the hotel. Moreover, most hoteliers installed refillable soap dispensers in bedrooms and increased their usage of recyclable products. They also considered reusing partially used soaps, shower gel, shampoo, toilet rolls and other bedroom toiletries in either general toilets within their hotels or transferring such materials to their homes to get utilised by themselves. As one hotelier said:

Yeah, we constantly use both sides of the paper and then we will put it into the appropriate recycling bag. Another practical example, when the toilet rolls in the bathroom got down to one third they were taken out and we put them into the toilets at the back of the kitchen. Also, the bits of soaps that were not used in the rooms we actually used them ourselves.

(SH2/GDES, 8 Rooms)

When hoteliers considered renovating their hotels or replaced any furniture they donated of durable items which normally produced on a longer-term basis (i.e. beds, chairs, TV etc.) to local charities. One of the hoteliers added
that they considered giving such reusable items to staff as a sort of encouragement. Moreover, two hoteliers considered selling their old furniture arguing that putting items for sale was economically viable option because it enabled them to earn some money on waste disposal. Those hoteliers asserted that they held a sale in front of their hotels to sell off their furniture and old fittings rather than disposing of them into landfill. This is best explained in the following excerpts:

*During the summer months, we hold superb car boot sales within the hotel’s extensive grounds, which have now become famous throughout the principality. They have become so popular and well supported. People come from far and wide to both buy and sell. Occasionally, we set up a store ourselves and sell our stuff off.*

(SH5/GDES, 27 Rooms)

*When our furniture became as worn out it was easier to be sold or donated to local charity or community groups. For example, last November we donated 20 chairs to a local theatre rather than sending them to a landfill site.*

(SH2/GDES, 8 Rooms)

### 5.6.4 Recycling

Most hoteliers interviewed were very passionate to recycle the hotel waste whatever the scheme used. They believed that recycling was a good opportunity to cut down the amount of waste disposed into landfill and also to reduce the cost of waste disposal. Although the majority of small hotels participating in the case study were certifying with Level Two GDES which was basically about complying with the legislation the majority of hoteliers interviewed (5 out of 9) were recycling illegally. They utilized the domestic waste recycling system either through recycling banks, HWRC or door-step collection for recycling the majority of the waste streams produced. This
reflected that most local authorities in Wales still had a weak monitoring system unable to control small hotels using the domestic scheme. This is best explained in the following statements:

_The glass, tins, magazines, newspaper all goes to the council recycling plant. It is a community recycling centre. We put the bins in the car box but it is actually a driving way. We do not pay anything it is sponsored by the council._

(SH1/GDES, 12 Rooms)

_If we got a lot of stuff here like cardboard and stuff like that then we would take that down and drop it into a recycling centre. We separated our plastic, metal, paper and textiles in different bags and then picked up weekly from the door-step by the council for recycling._

(SH2/GDES, 8 Rooms)

_All newspaper, magazines, plastic bottles, glass and things like that which we got from the hotel were separated out and the housekeeping staff took them to a disposal unit down Tesco’s where they had got various bins for the various products._

(SH3/GDES, 23 Rooms)

_We put the bottles in a trolley and we push the trolley up to the local bottle bank facility and put the bottles in; that we do ourselves._

(SH4/GDES, 29 Rooms)

Only one hotelier interviewed who used the domestic recycling system mistakenly thought that HWRC was built also for businesses to dispose of their recyclables. He said “I did not think any differentiation had been set between households and businesses” (SH1/GDES). However, the other hoteliers were aware that they were disposing of their recyclable waste illegally. Nevertheless, they continued with their action arguing that there was nowhere else to take it. They felt that it was not sustainable to dispose of recyclable waste into landfill because of such discrimination that had been made between the domestic and commercial businesses’ recycling systems.
They reasoned that the local authorities did not provide any help (e.g. tools and facilities) to support commercial businesses recycling their waste. As one hotelier said: "unfortunately, the support was very limited" (SH2/GDES).

Relating to TPB, it was clear that hoteliers had very positive attitudes towards recycling but they lacked the opportunity to recycle because of the unavailability of the recycling service from the public sector (PBC). Accordingly, hoteliers intended to recycle illegally. However, this was not considered a valid excuse for using the domestic recycling system illegally as some larger private waste companies provided total SWM solutions (see chapter six) but they had not tried hardly to find a private waste carrier who could help them with recycling. In this respect, two hoteliers interviewed argued that small hotels should not be penalised for using the domestic recycling system. They indicated that all domestic schemes (e.g. recycling banks and HWRC) should be made legally available for small businesses as well to recycle their waste arguing that small hotels were not bigger enough to dispose of their waste through a waste contractor. As one hotelier stated:

*We have schemes in Wales where people can put their waste. I think businesses and particularly small businesses should not be penalised for that. It is definitely when you have got a 400 bedroom hotel then you are making enough money to be able to control your waste but in a small scenario you are not.*

(SH2/GDES, 8 Rooms)

The findings showed also that some hoteliers (2 out of 9) considered recycling part of their waste streams legally through a registered waste carrier. They were using private waste carriers to recycle glass, cardboard or
waste oil. They were very keen to recycle all waste streams produced but they found a difficulty in getting a waste carrier on board. In fact, most hoteliers implemented an effective waste separation system for recycling hotel waste streams. Initially, the segregation process was carried out by streaming the waste in two bins – one for food waste and the other for general waste. Then the porter would stream general waste into different bags because small hotels did not have enough space to put individual waste storage bin for each waste stream produced. Also, hoteliers considered handling some types of waste materials (e.g. bottles and tins) by washing before putting them into the recycling bags. However, some hoteliers imagined that the waste carrier would not recycle their waste and would dispose of it into landfill because the disposer collected the waste mixed in one vehicle.

Interestingly, one of the hoteliers asserted that they recycled cardboard free of charge. They stored cardboard over a period of time and by continuously compressing it down by their crusher until it became a significant amount and then it got collected by a private waste contractor free of charge. It made them great financial savings. He advised other hoteliers to invest in buying crusher to be able to get benefit from the free recycling service which offered by some private waste companies for cardboard recycling. Moreover, some hoteliers interviewed (4 out of 9) disposed of cooking oil which used in deep-frying in a legal and economical way. They did not throw waste oil down the drain but they stored it in a big container then they sold it to various
companies which recycled it to make biofuels. The waste oil had become a commodity for small hotels committed to GDES as a lot of companies were interested to collect it and compensate the hotels.

On the other hand, some hoteliers interviewed (2 out of 9) held negative attitudes towards recycling believing that it was expensive and that they largely relied on landfill to get rid of the hotel waste (see section 5.6.6).

5.6.4.1 Obstacles to recycling

Regarding the PBC factor which involved in TPB, hoteliers were facing some external inhibiting factors to recycle: lack of recycling facilities; lack of awareness; location of the business; cheap landfill. Most hoteliers interviewed (7 out of 9) indicated that finding a waste carrier who could help them with recycling was the biggest obstacle to recycle hotel waste. As one hotelier said: “mainly getting someone on board to help” (SH5/GDES). On the base of the local government, some local authorities in Wales did not provide any support for commercial businesses regarding recycling as they still focused only on the domestic sources. Moreover, some hoteliers (4 out of 9) indicated that ‘lack of awareness’ was also one of the major challenges facing them to become more eco-friendly and manage hotel waste in a more sustainable way.

As a result of the unavailability of the doorstep recycling collection service from the public sector, some hoteliers approached a number of the private
waste companies to pick up some of their recyclable waste streams (e.g. glass and cardboard). However, they argued that most of the private waste carriers would not like to come to a small village or a remote area where their hotels located to collect some bags of recyclable waste because it would not be economically viable or profitable to them. This reflects that the location of the business acts as a significant barrier to recycle their hotel waste. In addition, ‘cheap landfill’ was also one of the main reasons of why some hoteliers (2 out of 9) were highly depending on landfill as a primary waste disposal route.

There were some other internal obstacles facing hoteliers in recycling, including: cost, time and space issues. Firstly, the initial expenses of recycling (i.e. waging staff for segregating waste, buying crusher) were quite prohibitive to some hoteliers to take the first step. Secondly, there was a time constraint to recycle as it took much time to segregate all the waste materials and wash all the tins and bottles before putting them in the recycling bags. Thirdly, space was an obstacle as some hoteliers did not have enough space within their operations tolocate different bins to sort out the waste. Moreover, most hoteliers argued that they always had a ‘higher rate of staff turn-over’ which put additional cost over their businesses to train and make new staff aware with the hotel policies and environmental practices undertaken (recycling). There was also a personal attitude constraint as it was easy for staff to chuck everything in the bin rather than recycling. This is best explained in the following statement:
I suppose we have some other obstacles but we overcome them, like the cost and time factors. There is a financial obstacle for being environmentally-friendly. Also, there is a definite time obstacle because if I throw everything from breakfast it will take me less time but if I recycle that I will have to wash all the tins before we recycle them. Also, a personal challenge as sometimes it is easier to destroy everything away than to recycle.

(SH1/GDES, 12 Rooms)

However, practically, most hoteliers interviewed (7 out of 9) overcame most of the aforementioned constraints and made recycling. One of the hoteliers said once you put the system in place then staff would do things in certain ways and forget about the other alternatives. For example, if you said to staff that recycling was the only option for waste disposal then they would stop think about just throwing everything for landfill.

5.6.5 Composting

Although composting represented a sustainable SWM option for disposing of organic waste it was not widely used by most small hotels committed to GDES. Only three hoteliers out of the nine considered in-house composting and showed favourable attitudes towards it. They argued that composting was economically viable option because it helped them to reduce the waste disposal costs and also save them money on buying fertiliser to their gardens. As one hotelier commented: “we compost all the food that is not cooked and we use the compost to fertilise the garden” (SH8/GDES). One of these hoteliers indicated that they did not receive any support from the local authority regarding composting. Instead, they did it personally within their operations by following either a natural process or with the addition of
accelerators to speed up the composting process and as soon as it developed they used the compost product in their gardens as a fertiliser.

However, the majority of small hotels committed to GDES (6 out of 9) did not consider in-house composting and even felt negatively about it. They believed that in-house composting would create problems within their hotel operations arguing that it would attract vermin and entice rats to come down towards their hotels. They also reasoned that they did not have time, space and lacked the awareness to do it. Likewise, two hoteliers explained that they would have a problem with the compost as they did not have gardens to put the output soil. Moreover, one of the hoteliers felt that it would not be practical to do composting in the hotel believing that it would negatively affect customer comfort. The excerpt below best explains their comments:

\[ \text{We have not got grounds for it. I need quite a big sort of garden to shuck it. You need to keep it out of the nose and sight of the people who come here to enjoy themselves. I did not think I would like to go to a hotel and see the waste going into a compost heap. I mean that sounds a bit silly.} \]

\( \text{(SH7/GDES, 19 Rooms)} \)

Conversely, some hoteliers interviewed (4 out of 9) were very willing to separate and compost food and other organic waste but through a commercial composting service. However, they argued that they still had not got a facility to compost. According to TPB, these hoteliers had positive attitudes towards composting but their behaviours were obstructed as they did not have the opportunity to compost.
5.6.6 Landfill

All hoteliers interviewed implemented landfill. However, the reliance on landfill as a waste disposal method had been differed amongst hoteliers. The findings revealed that two hoteliers out of the nine relied significantly on landfill to get rid of hotel waste although they were GDES certified. Surprisingly, one of these hoteliers was proceeding further to achieve GDES Level Three. They just put all the hotel waste mixed in the bags and then it got collected twice or three times a week by the public or private waste carriers to landfill. As one hotelier said: “we had three large bins (1100 litres) collected a week and disposed into landfill” (SH5/GDES). Moreover, it was found that food waste constituted the largest waste stream produced by small hotels committed to GDES. However, the majority of hoteliers interviewed were still disposing of food waste into landfill.

In the UK, it was illegal to give food waste for feeding animals after the Foot and Mouth crises (Sarkis and Dijkshoorn, 2005). Legally, the Animal By-Product Regulations (EC) No. 1774/2002 prohibits food waste which produced from different catering outlets such as hotels and restaurants from being fed to animals to prevent the occurrence of Foot and Mouth Diseases. The regulations came into effect in 2003 and became mandatory to all European counterparts. In a response, the UK enacted its Animal By-Product Regulations (Statutory Instrument 2347/2005) which came into force in 2005 (DEFRA, 2009). However, some hoteliers interviewed (3 out of 9) were daily giving food waste to their friends who would collect it from the hotel door-step
and use it for feeding their animals. They were aware that this option was restricted and become illegal but they intended to follow up this route because of their belief that giving food waste for feeding animals was much better than disposing of it into landfill and also it would help in reducing waste disposal charge.

Moreover, most hoteliers interviewed (5 out of 9) felt that dealing with farmers was a valuable option to pick up food waste and use it as animal feed. However, they forgot about this option and simply disposed of food waste into landfill since the government regulated and prohibited this alternative. One of the hoteliers asserted that they were producing significant amounts of food waste which would be encouraging for farmers to pick it up from the hotel door-step. Currently, most hoteliers had a difficulty to dispose of food waste in a sustainable way as they still had not got a composting facility and also it was banned to give it to farmers to feed the animals (PBC). One of the hoteliers argued that if the government continued with its strategy of increasing the landfill tax hoteliers would not stop disposing of their food waste into landfill as they still did not have the option to handle it sustainably. He said:

"If they charge us £100 a lift I still have to get rid of it you know. I have no choice, I stuck with food waste. I cannot flush it down the loo and I cannot give it to someone to feed the pigs."

(SH4/GDES, 29 Rooms)

The majority of hoteliers interviewed (7 out of 9) were using the local authority’s waste carriers to dispose of their hotel waste. They indicated that cost was the most important factor used for selecting a waste carrier. In this
respect, the majority of hoteliers (5 out of 9) did not pay any charge for disposing of recyclable waste as they recycled illegally through the council’s door-step collection. One hotelier said: “the local authority did not charge us for recyclable waste. It was collected as far as the normal business right” (SH2/GDES). One of the hoteliers interviewed added that they contracted the local authority mainly because they believed that the authority was more professional than private waste contractors in dealing with the legislative obligations regarding waste disposal on behalf of businesses. He said: “I think if anyone does not want to break the rules he is going to use the council” (SH7/GDES). On the other hand, some hoteliers (2 out of 9) preferred to deal with private waste contractors believing that they offered more reliable and comprehensive service than the council. As one hotelier stated:

They work bank holidays and other holiday periods. For example, the Christmas time for us is busy as well as bank holidays and weekends. So, they come and collect the waste while the council stops working in holiday periods. We will have a problem if we have much rubbish here, so it has to move. We try very hard to make sure that our waste storage area is always washed and cleaned but if the waste is there for a long time you cannot.

(SH4/GDES, 29 Rooms)

5.7 Main players in the hotel’s SWM programme

5.7.1 Staff participation

On average, most of small hotels committed to GDES employed a range of 10 – 15 staff in their operations. It was obvious that the subjective influence which could be created by staff was not strong to influence hoteliers’ intentions to manage hotel waste effectively as SWM was a decision of the
hotel owners/managers not staff. Nevertheless, the normative beliefs of the majority of hoteliers interviewed (7 out of 9) indicated that staff held positive attitudes towards SWM practices and were more receptive and cooperative to save the planet. Hoteliers asserted that staff approved the hotel’s SWM behaviours and that they took active steps to encourage their participation in the hotel’s SWM programme. One of the hoteliers argued that, at the moment, there was so much emphasis on recycling. Therefore, staff were already aware and they just transferred what they did with their waste in homes to the workplace. Hopfenbeck (1993) indicated that many staff have a tendency to work for socially-responsible businesses.

For internal communication of environmental awareness, hoteliers considered providing induction training for any new staff. It was one day training programme aimed to familiarize staff with everything in the operation and how to do their jobs properly. Waste management was considered a significant part of the induction training given to new staff as hoteliers would explain to them why they recycled and/or composted the hotel waste and how. During the induction process, hoteliers would make staff also aware of the hotel’s environmental policy which enclosed within staff handbook. Wee and Quazi (2005) similarly asserted that staff should be trained to fulfil their environmental responsibilities. Furthermore, some hoteliers considered putting the hotel’s environmental policy on the notice boards in staff area to be visible to their staff all the time. One of the hoteliers added that they obtained switch off signs from Carbon Trust and put them in staff area to
encourage staff to turn off electrical equipments when not in use. As one hotelier asserted:

*When staff start with us we give them induction training. We have a person who will sit down with them and go through the staff handbook. Part of that training is to make them aware of our environmental policy which we have got in the staff handbook, the reasons why we recycle and why we compost.*

(SH1/GDES, 12 Rooms)

Moreover, one of the hoteliers was very keen to make staff knowledgeable with all processes undertaken in the hotel to be able to answer customers’ enquires. They always talked with staff on the hotel achievements such as GDES, for instance how they got the award and what they had to do to maintain and improve the hotel eco-performance. Admittedly, hoteliers agreed that it was not necessary to run a specific training course on waste management. Instead, it should be part of the induction training programme given to new staff to inform them how to deal with the hotel waste when they were employed. As one hotelier said: “we tell them what to do and how to recycle. I am not going to put more training into that area” (SH3/GDES).

However, some hoteliers (2 out of 9) asserted that they put the system and procedures in place and staff had to stick with them. One of the hoteliers felt that it was difficult to go through the environmental policy and the other hotel policies, (e.g. health and safety policy and non-smoking policy) with every new staff member. They argued that small hotels always had a high rate of staff turn-over who were mostly part-time students worked mainly during holiday periods. He said:
This should be doing. This is fire and safety policy, this is the health and safety policy and this is the non smoking policy. We have got so much policies and I do not think that he will gonna work for me. But we have a staff handbook and I say to staff the environmental policy is in this handbook you suppose to read the handbook.

(SH7/GDES, 19 Rooms)

Interestingly, some hoteliers (2 out of 9) considered incentivizing their staff to work effectively towards reducing and recycling the hotel waste by giving them partially-used soaps from the guestrooms and offering them the old furniture when refurbishing their hotels. This considered actually a twofold strategy as it was successful in motivating staff who responded positively to that kind of incentives and at the same time helped the hotel to minimise its waste. One of the hoteliers added that they set up a motivation scheme for encouraging staff to get up with new ideas on how to reduce waste generation and save resources and whoever ideas implemented he would get some financial bonus. Indeed, this scheme would be effective in helping the hotel to improve its environmental performance as it would make staff continuously think about the hotel performance and work towards the improvement. She said:

Well, we have a scheme now sorted by the manager and supposed to come up with the ideas on how to reduce the cost and the waste and everything and whoever ideas implemented they will get some bonus. So, they are encouraged to think about things like reducing waste and reducing energy in that way.

(SH8/GDES, 21 Rooms)

On the other hand, the majority of hoteliers interviewed (7 out of 9) felt negatively about providing financial incentives to encourage staff
participation. They believed that it was difficult to provide financial inducement to staff on the level of small hotel businesses as they could not afford it. As one hotelier said: “I do not feel that under our particular scenario the financial incentive has to be used. It could be in larger businesses where they were in less control in a minute by minute basis” (SH2/GDES). However, previous studies (Herzberg, 1996; Daily and Huang, 2001) indicated that a well-designed reward system would be effective in encouraging staff commitment and participation in the business’s environmental management programme. One of the hoteliers felt that the real incentive to reward staff should not be financially but socially by helping them to protect the environment. For example, by encouraging staff to walk to work and reducing the impact of carbon footprint they would in turn get the message across and talk with people in their communities whether friends, relatives or neighbours to help them also reducing their impact.

5.7.2 Customer involvement

The Subjective Norm component of TPB demonstrated that the majority of hoteliers interviewed (6 out of 9) perceived a social motivation from customers, to a lesser degree, to adopt eco-friendly practices arguing that people’s eco-interests were going to increase. Hoteliers’ normative beliefs revealed that there was a small percentage of customers who was actually looking for green hotels in the mean time but most people started to realise that they had an impact on the environment and they could play a significant role in improving the overall picture, for instance, by staying in an eco-hotel.
and behave in an environmentally-responsible manner. Hoteliers indicated that most of their customers felt positively about their hotels’ environmental performance and appreciated the fact that they were trying effectively to conserve resources and protect the environment. Mensah (2004) showed that there was a mounting pressure emerged from customers with 90% of hotel guests preferred to stay in eco-friendly hotels and (Tefft, 1994; Barker, 1996) were willing to pay extra to stay in green accommodation.

Most hoteliers tried to make customers aware of what they were trying to achieve and encouraged customer participation in the hotel’s environmental initiatives via different means. They put tips for guests in the rooms asking them to save energy, water and produce as little waste as possible during their stay. Interestingly, one of the hoteliers placed eco-tips for guests on the hotel’s website to show them how they could behave in an environmentally-responsible manner during their stay in the hotel (see Figure 5.2). They promoted the varied practices that customers could undertake to conserve water, energy and reduce waste while they were in the hotel. Moreover, hoteliers considered communicating the hotel’s environmental policy to customers through putting it either in a prominent position within their hotels, (e.g. hanged on the wall in the front desk) or within the hotel’s welcome folder in the rooms.
Interestingly, hoteliers did not ask customers to segregate their waste but not to contaminate it with food. As such they considered putting two clearly-labelled bins in the rooms and asking customers to place plastic bottles, newspaper and other dryable waste materials in a specific bin, which would be segregated later by their staff, and put food waste in the other bin. Horobin and Long (1996) in their survey similarly found that many small hotels undertook different actions to inform guests about the varied practices which they could undertake to help protect the environment. Hoteliers asserted that most customers were very keen to recycle and put the waste materials in the appropriate bin. As one hotelier explained:

A pretty good percentage of people are positive and recycle. I can say 60% of people will do it ...We put tips for guests in the
rooms asking them to save energy, (e.g. switch off the lights and turn the heating off when you do not need it). Also, we put tips for guests in the rooms saying please try to produce as little waste as you can when you are here, buy food with as little packaging as possible, reuse bags etc.

(SH1/GDES, 12 Rooms)

Two hoteliers interviewed set incentives, (i.e. free drink, 10% discount or a surfboard ticket) to encourage guests to use the public transportation in their travelling to the hotel. In this case, they were not only involving customers in the hotel’s environmental performance but they were also encouraging guests to become more environmentally-friendly and not burning fuels when coming to the hotel. They tried hardly to get the message across and make their guests think why? Hoteliers asserted that they had a lot of customers who reacted positively towards these issues. This is best explained in the following excerpt:

_We actually have a financial inducement to people who travel here on the railway. We had Friends Of The Earth Conference here last week (20 people). They came by train from London to our hotel. We encourage that, we say if you come down and use public transportation we give you a drink or we give you a surfboard ticket for a day as an incentive to use public transportation. We like to challenge our guest, I think by telling them if you come in public transportation we will give you a drink; that starts to get them thinking why they want me to come in public transportation._

(SH1/GDES, 12 Rooms)

However, some hoteliers interviewed (3 out of 9) held unfavourable attitudes towards involving customers in the hotel’s SWM programme by asking them to reduce and stream their waste. They refused the idea of supplying additional bin in the rooms to enable customers maintain their waste not contaminated. They believed that most customers would not like to deal with
their own waste. Two of them considered disposing of the waste produced by customers directly into landfill as they did not encourage staff to handle it because of the health and safety issues. One hotelier said: “I would not like my staff to put their hands into rubbish and separate customer waste” (SH8/GDES).

5.8 GDES small hotels and product take-back (PTB) system

The majority of hoteliers interviewed (7 out of 9) felt positively about participating in PTB system if it incurred no costs to them. As one hotelier indicated: “we would like to do that if obviously did not imply any costs for us” (SH8/GDES). Hoteliers argued that the buyers have no control over manufacturers’ packaging strategies other than accepting it. Most producers nowadays considered packing their products in fancy boxes which was ultimately unnecessary cost the buyer was paying for. They suggested that the government should develop an effective national PTB system across the country and force manufacturers to cut down their usage of packaging and accept packaging back for recycling.

Interestingly, the findings identified a group (4 out of 9) amongst hoteliers interviewed who set up their own PTB system as a part of their strategy in minimising hotel waste. According to TPB, these hoteliers held very positive attitudes towards PTB and thus they endeavoured to have the opportunity to perform the behaviour with the limitation of the current PTB system. They agreed with their suppliers to take back their packaging, particularly plastic
crates which used for carrying out bread, milk and vegetables. They maintained these containers appropriately for suppliers to collect when delivering their orders. Hoteliers made take-back a conditional factor to continue the process of dealing with their suppliers. Moreover, two hoteliers tried to extend their PTB system to involve other types of packaging (e.g. cardboard boxes and cartons) but suppliers often refused to take them back as they could not reuse them either. As one hotelier commented:

> Some products come in boxes and we give boxes back to suppliers. Sometimes they do not want to but we make it a free condition; so that is your rubbish take it back. The salmon that I have got delivered in the train comes in a polystyrene box because it has to be kept at proper temperature. We keep them all and then when I see the supplier about every six months I give him back 20 or 30 of these and then he uses them again.

(SH2/GDES, 8 Rooms)

However, two hoteliers interviewed felt negatively and even had no intention to take part in any potential PTB system. They believed that it would be difficult to take-back packaging waste to stores/retailers to keep for original producers arguing that they did not have enough space to store packaging until taking it back.

5.9 Complying with the legal requirements for disposing the hotel waste

On asking Arena Network’s environmental coordinators about why GDES had Level Two specifically to comply with the legislation while committed organisations should adhere to legislation anyway. They argued that the legislation covered the whole levels of GDES and not specifically stand at Level Two. In other words, businesses at any level of GDES must comply with the legislation. However, Level Two GDES required committed
organisations to develop a legal compliance register. Thus, any organisation intends to certify with Level Two GDES must list all the environmental legislation related to the organisation’s activities and state how they will adhere to them. One of the Arena Network’s environmental coordinators indicated that the idea of having a particular level of GDES on complying with the legislation was to help business operators understand their legal obligations and how to comply with them. One of the assessors’ duties when reassessing the organisation was to make sure that they made a register of all new legislation and adhered to them.

Despite most hoteliers interviewed (7 out of 9) made a register of all related legislation and were fully aware of their legal obligations for disposing of hotel waste only four hoteliers interviewed adhered to them. They maintained a WTN and dealt with a registered waste carrier. On the other hand, some hoteliers interviewed (2 out of 9) were ignorant of their waste obligations and even unaware of how the waste legislation could affect their operations. As one hotelier said: “I do not know what is the waste legislation? What do you mean?” (SH6/GDES). Unexpectedly, the findings revealed that a group of hoteliers interviewed (5 out of 9) were disposing of their recyclable waste illegally through covertly using the domestic recycling facilities, including: HWRC, recycling banks and the council’s door–step collection. Similarly, some hoteliers interviewed (3 out of 9) were illegally recycling food waste for feeding animals.
On reviewing the GDES assessment reports which carried out by Arena Network for recertifying these small hotels which participated in this case study and disposed of their waste illegally, it was found that Arena Network reported that these hotels were legally complying with the waste regulations whereas, in actual fact, they disposed of their waste illegally. This implied that the assessment which carried out by Arena Network for GDES was just a process of filling the paperwork and not based on actual survey of what was going on.

Only one assessment report related to SH2/GDES noted several critical points in regards to the hotel’s legal compliance, including: a minor non-conformity with legal compliance; the WTN was out of the date; the hotel used local recycling banks and civic amenity sites. The report also set advice to the hotel owner/manager to ensure a mechanism in place for keeping up to date with the environmental legislation, e.g. visit the Environment Agency website. This reflected that Arena Network’s coordinators were fully aware that some GDES small hotels were disposing of their recyclable waste illegally through the community recycling centres and they still granted them the standard.

In this respect, Arena Network’s philosophy was if a small business disposed one or two bags of recyclable waste a week into a community recycling centre then they would not fail them in the assessment and thus businesses would still be eligible to get GDES. From the strictly legal point of view, Arena
Network’s coordinators argued that businesses should not do that because they broke the law but from the environmental perspective they did the right action. Therefore, Arena Network would not discourage a small hotel or B&B putting one or two bags a week into a community recycling centre because the alternative was putting them into landfill. Conversely, if a business produced a large amount of waste then they would never get the standard if they disposed of their waste illegally. Truly, most of the GDES small hotels participated in this case study produced commercial quantities of recyclable waste which disposed of illegally through using the domestic recycling system. This reflected a deficiency of Arena Network certifying and monitoring procedures. One of the Arena Network’s coordinators said:

_We always tell people you must check with the local authority because it is very important and if they are taking three bottles of wine down to a local hall village site then the alternative is putting it into landfill we are not gonna stop them have GDES because they are doing the right thing, because environmentally they are doing the best thing. It would be a joke for us to force them to put three bottles of wine to landfill … but if we find a hotel 8 bedrooms that is producing 10 bags of waste, it is clear that is commercial quantities … to that sort of hotels no, if you have got a hotel that sort of size then they are not gonna producing domestic quantities._

(Coordinator 2/Arena Network)

5.10 Future motivation for implementing better SWM practices

5.10.1 Hoteliers’ motivation for achieving GDES

It was essential for the current study to look at the bigger picture and identify what initially motivated small hotel owners/managers to achieve GDES and whether their motivations had been fulfilled from being a GDES hotel. This would help, in turn, to understand deeply why most GDES small hotels
manage their solid waste sustainably by targeting all the levels of the waste management hierarchy. The findings identified four main factors which led small hotel operators to achieve GDES, including: increasing market share; achieving financial savings; fulfilling the corporate social responsibility; being eligible for grants.

- **Increasing market share**

Most of the hoteliers interviewed (6 out of 9) joined GDES initially to market wide their operations and attract those customers who were environmentally-conscious. They took a step forward and achieved GDES to be seen as leaders in the market and uniquely different from other hotels. Moreover, the standard was an opportunity to some hoteliers to prove to the public that the hotel was an eco-friendly business as it was certified through a third party organisation. So, when people checked the hotel's website and noticed that it was GDES certified they would realise that the hotel was a responsible business and had to undertake environmentally-friendly practices (e.g. recycling). Holt (1998) similarly indicated that the environmental standard was an effective approach to assist companies to demonstrate that they were environmentally-responsible businesses as they were eco-certified via an independent agent. One hotelier asserted:

> I suppose at the end of the day you want to give people something that they can identify. So, if I was an eco-hotel but without GDES I could say ‘I did recycling’ and people would say ‘oh you could say you did but how could we know’. But if people knew that we were GDES Level Three then they would know that we were doing these things.

(SH1/GDES, 12 Rooms)
Two hoteliers out of the nine had actually gained a marketing advantage from being a GDES hotel. They advertised the GDES logo, hotel’s environmental policy and the environmental practices undertaken on their hotels’ websites to show people that they were eco-friendly hotels (see Figure 5.3). Moreover, they considered promoting their hotels in a range of other environmental mediums, including: eco-tourism websites, responsible travel websites, greenbeds website and eco-magazines. They intended to reach the overseas market and encourage customers to prioritize them over other hotels because they were responsible businesses. In this respect, one of the hoteliers demonstrated that a lot of organisations (e.g. council) selected his hotel to hold their conferences because of a variety of reasons and one of these because they were environmentally-friendly. He commented:

*It might be if you ask somebody why you picked up this hotel it might be because of the location, quality of the website and they got an environmental policy as well.*

(SH7/GDES, 19 Rooms)

By contrast, some hoteliers interviewed (3 out of 9) perceived that most customers were price driven and thus they looked for the cheapest price for the room whether it was eco-friendly or not. They believed that the environmental attribute was not a considerable factor for most customers when selecting a hotel. One hotelier said: “*we joined greenbeds website. I did not think we ever had a guestroom from it*” (SH4/GDES). Hoteliers argued that when people searched for a hotel, at the moment, they used certain words in the google search engine for example, “small hotel + castle” or “small hotel + city centre” whereas a small proportion of customers actually looked for environmentally-friendly hotel. Nevertheless, some hoteliers
interviewed (4 out of 9) expected that the green issue within the hospitality industry would become far more important in the next few years and customers would prioritise those hotels that undertook eco-friendly practices.

Indeed, some hoteliers interviewed (4 out of 9) marked a problem in relation to advertising their hotels as a part of GDES on their websites arguing that the majority of the public would not recognise it. The public ignorance with GDES was considered a real defect of the standard. From the perspective of small hotels, most hoteliers believed that they could not put much detail about the standard on their websites fearing about losing potential customers. They asserted that Arena Network should carry out the
responsibility to promote the standard to a wider audience and make people aware of it. Thus, small hotels could start using GDES certification as a marketing tool. As one hotelier explained:

*I do not think the general public knows about GDES. They probably think that I take our bottles to bottle bank or something like that. I do not think there is enough education yet. I have not got more customers because of it. The problem is if you start going into too much depth clients will just get bored and they will click off my site. It needs to be a few of short lines: what is about, why is GDES and why using us will be better than somebody else but if you go into too much details there is a chance of losing the booking.*

(SH7/GDES, 19 Rooms)

On asking Arena Network’s coordinators about whether the public made aware of GDES they asserted that there were only a small percentage of people who actually knew about GDES, particularly those who interested with eco-tourism. The target of GDES was always businesses. However, there were still a lot of business operators in the UK had never heard of GDES. Arena Network’s coordinators argued that the awareness was a constant challenge facing Arena Network to promote the brand of GDES to people. At the time of conducting this research, Arena Network advertised the standard on the GDES website and any organisation certified with the standard would be placed on that website.

How could small hotels use GDES as a marketing tool although it was not recognised by the general public? A question addressed by some hoteliers interviewed. In this respect, one of the Arena Network’s coordinators asserted that it was the businesses’ responsibility to promote themselves as
eco-friendly businesses. Hoteliers should advertise their environmental policy and the environmental practices undertaken on their websites. They should also show people that they were GDES hotels and put information about the standard on their websites.

However, on the base of Arena Network side, one of the coordinators asserted that they planned to promote the standard to general public to make it a valuable opportunity for GDES hotels to use it as a marketing tool. They would work with different partners, (e.g. Visit Wales) to make GDES as an option within hotel booking systems on the website and help customers searching for GDES accommodations. Thus, when people noticed GDES as an option within the reservation system and read the information page attached to it they would understand what it meant. Once the standard was promoted to general public in this way then a lot of tourism business operators would recognize the importance of certification. At the moment, they doubted that the standard would benefit them on the marketing side as the majority of the public still unaware of it. As one business’s coordinator said:

\textit{At the moment, the star system is generally understood you know (i.e. one star to five stars, it means better the accommodation). What we have got to do is get those onto the websites and talk with the partners. So, it becomes part of the booking system then more and more that will build up in the public’s mind; that is the next challenge for us in the next twelve months … public understanding is an important thing because once they see an option they gonna say what that means and then if you get an information page it will start people to think … and also mapping people so they can search. For example, if they want to go to Powys and they want to see all of the ones}
that are registered they can pick up on one of those rather than somebody that is not registered.

(Coordinator 2/Arena Network)

- Achieving financial savings

The economic motivation was one of the major factors which initially encouraged all hoteliers interviewed (9 out of 9) to certify with GDES and undertook environmentally-friendly practices. They wanted to save costs on the day to day running of the business. In practice, some hoteliers (6 out of 9) asserted that they had actually attained financial savings by undertaking a variety of resource conservation measures aimed to save water, energy and reduce waste. As one hotelier commented: “definitely, both marketing potential and financial impact were good” (SH1/GDES). One of the hoteliers indicated that the hotel’s occupancy levels had been increased since they became part of the GDES. This could be explained by the fact that the hotel attracted those customers who were eco-minded and wanted to stay in a green hotel.

On the other hand, three hoteliers interviewed argued that the financial savings achieved from being a GDES hotel was very limited. The initial costs involved to be environmentally-friendly were very expensive (e.g. LED lighting). This result is in agreement with previous research (Bramwell and Alletorp, 2001; Bohdanowicz and Martinac, 2003) which indicated that the high cost involved in the implementation of eco-technologies was one of the greatest barriers facing hotel operators to become more green. However, one of the hoteliers demonstrated that once hoteliers put the system in place the
financial savings would outweigh the initial costs incurred. As one hotelier said:

Yeah, it saves cost. I mean for example the boiler saves us something like £800 a month in fuel bills because it is more efficient system. But I think the biggest problem is the large capital needed to implement all the environmentally-friendly things and this is what scaring people away. I know a lot of hoteliers who would love to change their boilers or the heating system because it was so old and inefficient but they just could not afford it.

(SH7/GDES, 19 Rooms)

- **Fulfilling the corporate social responsibility**

Most hoteliers interviewed (7 out of 9) were environmentally–conscious and achieved GDES to satisfy their social responsibility. They were very passion and caring about the environment. Tzschentke et al. (2004) the ethical or the social responsibility appeared to be one of the most important drivers for small hotels’ adoption of sustainable measures. Hoteliers felt that GDES was a good opportunity to help them operate correctly and thus having the minimal impact on the environment and at the same time make customers think of their hotels positively. Hoteliers argued that running an eco-hotel was part of their strategy in minimising their impacts on the environment. One hotelier asserted: "absolutely, the biggest reason was to save the planet and had the least impact" (SH1/GDES).

In addition to GDES, two hoteliers were also organic-certified through the WOS. They were amongst the first organic-certified hotels in Wales where all the foods and drinks served to guests were organic. They adopted different
initiatives aimed to protect the environment and minimise their impacts. Moreover, one of the hoteliers was not only concerned about lessening the hotel’s environmental impact but also he tried hardly to assist other businesses in the local community to implement ethical purchasing policy and reduce their impacts on the environment.

However, some hoteliers achieved GDES purely for their own economic and marketing benefits. It was clear that two hoteliers did it only for the title; to be seen that they were GDES certified. They did not practice in an environmentally responsible manner, particularly with SWM as little measures were undertaken on board to protect the environment. Synergy and WWF-UK (2000) similarly indicated that the implementation of environmental standard for some businesses was a process driven rather than performance based as they still performed in an environmentally-destructive way although they were eco-certified.

• **Being eligible for grants**

Initially, WTB set up a grant to incentivize more businesses to achieve GDES. The grants were made specifically to assist organisations to purchase equipment that would directly bring about a reduction or elimination of their environmental impacts and an improvement in environmental management, for example technologies that reduce emissions or cut down the amount of waste generated. The findings showed that some hoteliers interviewed (2 out
of 9) joined GDES primarily to obtain such grants which had been made providing achieving GDES. As one hotelier commented:

*Initially, it was the incentive of being eligible for grants because if you had a GDES then you would be eligible for particular grants that was offered by the government. That was our prime motivator because we were looking for grants to help us with something here. So, we got the standard and we got some grants which helped us.*

(SH5/GDES, 27 Rooms)

5.10.2 Potential motivation to adopt sustainable SWM practices

In addition to the factors discussed in the previous section which presented hoteliers’ initial motivation for achieving GDES, the interviews with small hotel owners/managers showed that the government should pay more attention on four main issues to lead small hotel operators to manage their solid waste effectively, including: providing the tools and facilities; providing awareness and education; providing incentives; enacting legislation for recycling, as explained below:

Firstly, hoteliers argued that they lacked the facilities to actually recycle and compost their waste. At the time of conducting this research, some local authorities in Wales did not have a facility to compost organic waste and even their recycling system was largely focused on domestic properties. Moreover, it was difficult sometimes to get a private waste carrier on board to help with recycling as some hoteliers indicated that they hardly recycled some of the hotel waste streams through private waste contractors. Thus, local authorities should show more commitment and make recycling a workable option for small hotels. They should develop a recycling system for
commercial businesses and provide the tools (i.e. bins, bags) required to help hoteliers segregate their waste. A collection scheme should be set in place to collect recyclable waste from small hotels on a regular basis. As one hotelier said:

*I think the government should be far more encouraging and provide the facility for recycling; provide the bins for us to separate and then obviously they should come up with a system to collect our waste on a regular basis. We would participate as much as we could if they would come and help.*

(SH5/GDES, 27 Rooms)

Secondly, hoteliers argued that providing environmental awareness was an effective way to help small hotel operators to act in an environmentally-responsible way for a long-term. As one hotelier said: “*we need the input first. We need someone to come along and show us, for example, how we can reduce our waste*” (SH5/GDES). Most hoteliers felt that sending booklets or brochures through the doors would not truly help but the local government should cooperate with other specialised organisations (e.g. Envirowise) and offer series of seminars or training courses and invite all small hotel owners/managers to educate them on the varied environmental issues, e.g. how to deal with their solid waste streams step by step. Dewhurst and Thomas (2003) similarly reported a noticeable failure in the written materials and stressed on the great need to consider different means to engage small businesses in undertaking environmental practices (e.g. personal advice or web-based education).

Thirdly, the government should look at some sort of financial incentives to change hoteliers’ behaviours in relation to SWM. The majority of hoteliers
Chapter five: Case study of small hotels committed to GDES in Wales

interviewed agreed that reducing the charge of recycling would be a very strong incentive to encourage most hoteliers to reduce and recycle their waste. The bottom line for any business is to make a profit. So, if recycling was not economically viable to small hotel operators they would not pay any attention and threw everything mixed in the bin for landfill. Thus, the government should review its pricing structure and consider providing cheap recycling collection. As one hotelier said:

*I suppose you need a bit of sugar to make people do it and have an environmental policy. Ultimately tax breaks as an incentive for recycling or for having a sustainable policy in your business is a good idea and I think it will encourage a lot of businesses.*

(SH1/GDES, 12 Rooms)

Finally, legislation was considered an effective way to force hoteliers to manage their solid waste effectively. One of the hoteliers argued that even if the local authorities provided a recycling system for commercial businesses there would be a number of small hotel operators who just not concerned to recycle because they were not going to be fined for not doing it. However, if there was legislation in place then businesses’ owners would have no choice; they would have to do recycle otherwise they would be fined. Nevertheless, two hoteliers argued that the government should not enact legislation for recycling unless they provide the support required to enable business owners recycling their waste. Initially, local authorities should have the facility where hoteliers could recycle their waste. Then, if business operators did not respond the government should make recycling compulsory. As one hotelier said:
Yeah, you know carrot and stick, that is normally the way, giving them an incentive and if they do not give them a stick. But it is far better to give them incentives initially to try and get people to do it rather than penalise them.

(SH3/GDES, 23 Rooms)

However, some hoteliers interviewed (2 out of 9) felt negatively about forcing hoteliers to make recycling via legislation. They asserted that the hospitality industry was plunged into too much legislation, (e.g. health and safety regulations and fire regulations) and small hotel operators would not be able to cope with all these legislation. As one hotelier said: “we were washed with the legislation” (SH2/GDES).

5.10.3 Networking small hotels

On asking hoteliers about the possibility of developing some sort of communications and networks between small hotels, the majority of hoteliers interviewed (7 out of 9) held favourable attitudes towards the idea believing that these initiatives were essential to save the planet. Hoteliers believed in more communications and partnerships and put the onus over the local government and other specific organisations to lead such initiatives to help small hotel operators to meet together and exchange ideas. The findings revealed that two hoteliers were already communicating with other businesses’ owners in the local community to help them become more environmentally-friendly. One of the hoteliers demonstrated that they had a local committee to the city where businesses’ owners meet together on a monthly basis to share ideas and experiences. Indeed, there are so many ways of communications and cross links where small hotel operators can
share information and learn from successful cases, e.g. e-mail each other. As one hotelier explained:

_Fantastic, we would love to share our information with as many people as possible ... I think to set up a network will be great idea. I know quite a bit but I know that we can learn more from other people. There are so many things that we can help other hotels and they can help us also. The other advantage obviously of networks is that hotels that are agreeably eco-hotels can display to other hotels brochures._

(SH1/GDES, 12 Rooms)

Moreover, hoteliers indicated that it was essential particularly for small hotels located in the same area to work together as a team and not always think about the competition factor. They could discuss and find out different ways to reduce the impact of their operations on the environment. For example, they could find out the best suppliers for their common purchases and arrange with them to get all deliveries one time. One of the hoteliers said: _“although I and my neighbour used the same brewer but we got the delivery in different days”_ (SH7/GDES). Also, if a cluster of geographically-close hotels could work together and invest in buying compressor so that they could compact their waste, (e.g. cardboard) and get advantage of the free collection service offered by some private waste companies.

However, some hoteliers interviewed (2 out of 9) felt negatively about developing networks between small hotels. They asserted that it was difficult to work with other small hotels because they were in a competition with them. They argued that they were too busy with their businesses and did not have time to work with other hotels. As implied in TPB, these hoteliers would not
take-part in any potential network initiative because of their unfavourable attitudes towards the idea. As one hotelier said:

\[\text{That is fine if we have time. I mean a lot of businesses are very busy and it is quite hard to say I will take a day or something to go through things.}\]

(SH6/GDES, 15 Rooms)

5.11 Modified model for SWM in GDES small hotels

According to the theoretical model developed at the end of chapter two and the results obtained from this case study (small hotels committed to GDES) a modified model for SWM in GDES small hotels was developed. The model demonstrated hoteliers’ attitudinal and normative beliefs together with their PBC beliefs which influenced their SWM intentions and led them to either behave or not behave in an environmentally-responsible way (see Figure 5.4).
Attitudes:
The attitude component was foremost in influencing hoteliers’ intentions in relation to SWM. The findings revealed that the majority of hoteliers were very keen to protect the environment for future generations. They exhibited positive attitudes towards prevention (6 out of 9), minimisation (9 out of 9), reuse (9 out of 9), recycle (7 out of 9) and compost (7 out of 9) because of their beliefs that implementing sustainable SWM practices would help the environment in terms of reducing waste disposal into landfill and also would help them achieve financial savings. This is best explained in some of their behavioural and attitudinal beliefs: ‘I am looking to future generations to make things better for them’ (SH2/GDES); ‘personally, I am very environmentally-conscious. I would like to do whatever to save the planet’ (SH1/GDES); ‘I believe the less waste we produce the less money we are going to pay’ (SH8/GDES). However, a number of hoteliers felt negatively about prevention (3 out of 9), recycle (2 out of 9) and compost (2 out of 9) believing that it was difficult to implement. This was clearly demonstrated in some of their beliefs: ‘it is not cost effective for us if we are going to recycle’ (SH6/GDES); ‘I do not think I would like to go to a hotel and see the waste going into a compost heap’ (SH7/GDES).

Subjective Norms:
It was clear that the Subjective Norm factor did influence the performance of the behaviour but its effect on hoteliers’ behavioural intentions to perform or not to perform SWM behaviours was minimal in comparison to the other
factors involved within TPB (Attitude and PBC). The majority of hoteliers interviewed perceived little normative motivations from significant others, particularly staff (7 out of 9) and customers (6 out of 9), which positively influenced their intentions, to some extent, to manage their hotel waste effectively. This was illuminated in some of their normative beliefs: ‘our staff are more receptive to save the planet’ (SH2/GDES); ‘I think there is greater awareness and a lot of people are more discerning now and they are looking for eco-hotels’ (SH3/GDES). Likewise, most hoteliers (7 out of 9) did not perceive any social pressure from the local community and suppliers to handle their waste appropriately but only two hoteliers took active steps to communicate with other businesses in the local community to help them undertake environmentally-friendly practices and buy from local suppliers: ‘we are situated in an area with natural beauty, we do not want to spoil the surrounding where we are’ (SH3/GDES).

**Perceived Behavioural Control (PBC):**

The PBC variable was largely influencing hoteliers’ intentions. In essence, all hoteliers interviewed perceived a range of obstacles to implement sustainable SWM behaviours. Some of these obstacles were associated with the internal environment of small hotels (e.g. lack of time; lack of space; cost; smell; higher rate of staff turn-over), whereas some other obstacles were external to small hotels (e.g. lack of recycling facilities; lack of composting facilities; lack of awareness; cheap landfill; poor manufacturers’ production and packaging strategies; location of the business; limited
government support product take-back schemes). However, the majority of hoteliers prevailed over the internal obstacles because they were very positive towards SWM practices but they still lacked the external support, for instance, to prevent, recycle and compost the hotel waste.

**Behavioural intentions:**

As a result of the previously explained factors (Attitudes, Subjective Norms and PBC) hoteliers’ behavioural intentions were determined as positive or negative. Truly, the majority of hoteliers held positive attitudes towards SWM practices and partially perceived social pressures to manage their solid waste effectively. Consequently, they had favourable intentions to perform the behaviours but, unfortunately, they were constrained with the facilities (PBC). So, for example, most hoteliers intended to recycle illegally via using the domestic recycling system because of the unavailability of the recycling service from the public sector. On the other hand, a few hoteliers showed negative intentions towards particular SWM practices (e.g. recycle and compost) and thus an external support/pressure are much required to re-influence their behavioural intentions and lead them to implement all the options of the waste management hierarchy.

**SWM behaviours:**

As GDES certified, the majority of hoteliers committed to environmental responsibility and undertook a waste audit to identify sources and quantities of waste streams produced. Most hoteliers implemented SWM programme
based on the waste hierarchy. The findings revealed that six hoteliers out of the nine reacted positively towards prevention to prevent the waste at source and buy from local suppliers. Almost all hoteliers valued minimisation and reuse believing that both options were significant to manage hotel waste effectively. They actually adopted varied practices to minimise hotel waste and also considered reusing a wide range of waste materials either in-house, donation to charities or selling. Furthermore, the majority of hoteliers (7 out of 9) were very keen to recycle. However, five hoteliers recycled illegally because of the unavailability of the recycling service from the public sector, whereas two hoteliers were hardly recycling part of the hotel waste through contracting with private waste carriers.

Moreover, the majority of hoteliers (7 out of 9) felt positively about composting. Practically, three hoteliers considered making in-house composting while four hoteliers were very willing to compost through a commercial composting service but they were constrained with the absence of the facility. Indeed, the implementation of landfill differed amongst hoteliers. In this respect, the majority of hoteliers (7 out of 9) implemented landfill to a lesser extent and even used it as the last resort, whereas two hoteliers extensively relied on landfill as a SWM option. As explained earlier, most hoteliers tried hardly to overcome the challenges facing them to manage their hotel waste effectively. They encouraged staff and customer participation in the hotel’s SWM programme.
5.12 Summary

Despite having very modest free support from Arena Network, most GDES small hotels committed to environmental responsibility. They implemented a variety of low or no cost environmental measures and maintained records for monitoring purposes. Indeed, most hoteliers held positive attitudes towards the sustainable options set in the waste management hierarchy. They reacted positively towards prevention and minimisation and largely depended on reuse as a significant SWM alternative. They were very keen to recycle and compost through a commercial service, whereas, unexpectedly, some hoteliers still undertook landfill as a primary waste disposal route. Most hoteliers supported staff and customer participation in the hotel’s SWM programme. The chapter highlights the key motivations for achieving GDES in addition to a range of potential support to help small hotels manage their solid waste effectively. Finally, it concludes and explains a modified model for SWM in GDES small hotels. The following chapter explores SWM strategies and practices of the public and private waste carriers.
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6.1 Introduction

This chapter presents the findings of SWM practices undertaken by the public and private waste sectors in a Welsh local authority. Both sectors were considered significant parts of the case study of non-GDES small hotels in a Welsh local authority (see chapter four). In practice, small hotels have the decision to either contract with public or private waste carriers whose role is very critical to support them to manage their solid waste effectively. The chapter highlighted the capability of the public and private waste sectors to work with businesses in terms of prevention/minimisation, recycling and composting their waste. It explores the possibility of them to work in a partnership on the base of recycling/composting commercial waste. The chapter concludes by developing an input/output process model for the government to encourage the public and private waste sectors to implement sustainable SWM practices (see Figure 6.7). The model identifies the support/pressure needed to drive both sectors to work with businesses towards all the options listed in the waste management hierarchy.

6.2 Public waste sector

6.2.1 Council plans in regards to prevention/minimisation of commercial waste

Indeed, the local authority did not play an adequate role in terms of the prevention/minimisation of commercial waste. Although WAG had set waste minimisation targets for all local authorities in the Welsh waste strategy 2002 (Wise about waste), the local authority had no plans to assist businesses to cut and reduce their waste. The only role the council provided regarding
these targets was to signpost businesses to other specific organisations (e.g. Arena Network and Envirowise) to support them regarding environmental management aspects (i.e. waste prevention/minimisation). BRASS (2006) similarly indicated that most local authorities did not have a real commitment to reducing commercial waste.

The local authority’s waste management officers interviewed asserted that the council did not have the resources to deal with these targets for businesses. They indicated that the council did not have enough fund to provide more awareness and educational services on SWM to different stakeholders in the local community. Even the educational team within the local authority was not enough to carry out educational services (site visits, seminars and training) to educate householders, commercial and industrial businesses on how to implement all the options of the waste management hierarchy. Two officers interviewed stressed the role of the government to provide more fund to help local authorities to deal with these targets and to provide comprehensive manuals in which local authority’s educational teams could use to educate all types and sizes of businesses along with householders on how to prevent, reduce, reuse, recycle and compost their waste.

At the time the research was undertaken, the council considered their waste prevention/minimisation targets as secondary objectives, whereas their primary targets were to meet the recycling rates. However, one of the local
authority’s officers interviewed expected that these targets would be very important to the council in the near future as a result of the increasing pressure being put by WAG upon the council to deal with these targets the same as recycling and composting. Thus, in the future, the local authority would have to provide training, education and awareness campaigns targeting commercial businesses and householders regarding waste prevention/minimisation. The excerpt below best illustrates their answers:

No, we do not have the resources to do that work (prevention/minimisation) for businesses but we definitely support that. We signpost businesses to other organisations that can help them with that like Envirowise and that kind of organisations...at the moment, those are secondary targets but I imagine when WAG revises the strategy some of those may become in the primary targets for us to meet.

(Officer 2)

Most of the officers interviewed argued that PTB system represented a good opportunity to help small hotels as well as other commercial and industrial businesses to cut/reduce their waste. However, PTB relied on the manufacturers who would accept their products or packaging back to reuse or recycle them. One of the officers interviewed indicated that the UK government should take the lead role to develop a comprehensive PTB system and force manufacturers to take-back their packaging and electronic waste products. This result is consistent with the findings of Adams (1998) and Mayers and France (1999) who reported that the government should make PTB system mandatory and force manufactures to commit to it.
At the time the research was undertaken, the PTB system in the UK was limited and still did not allow small businesses to take part, particularly for packaging waste. One of the officers indicated that the Packaging Waste Regulations 1997 in the UK required businesses to recover and recycle packaging. However, these regulations applied only on businesses which produced over 50 tonnes of packaging a year which was not the case in a small hotel business. Moreover, the WEEE Regulations 2006 implied two different cases for small business end users to take-back their electrical appliances (see section 2.6.4.5). Nevertheless, it was apparent that the WEEE take-back for businesses was largely subject to the negotiation with the suppliers/retailers which might not be a successful process. One of the officers interviewed indicated that commercial businesses would be charged with another 10 – 15% of the price of the product (i.e. TV) to take it back at the end of its life. So, they pay for the discharge at the end. A typical comment was:

\textit{That could definitely work as long as the market supported it. There is no point of taking that back unless the manufacturer is going to do something with it. At the moment in the UK there is no real scheme that works too well even in drinks industry because it is cheaper to them to make new bottles than refill them.}

(Officer 2)

6.2.2 The local authority’s recycling system for commercial businesses

The council had just started commercial recycling in January 2006. Initially, they did cardboard and glass recycling because it was easy to target these markets, for example supermarkets for cardboard and pubs for glass. Then,
after nine months they commenced the mixed recycling bag scheme for the rest of general waste streams, i.e. paper, plastic, cans etc. This meant that when conducting the interviews with non-GDES small hotel owners/managers (May – August 2006) they still had not got the recycling service from the public sector. However, a month later the council offered the service (mixed recycling bag scheme) to all commercial businesses in the local authority. The council operated three different schemes for commercial recycling, including: cardboard, glass and mixed recycling bag collection. They collected glass separately while cardboard and mixed recycling bags were collected together. The recyclable items were then taken to the council’s MRF; tipped off, sorted, baled, processed and sold to various companies who would reproduce waste materials into useful products. The council provided orange label for cardboard and a clear orange bag for mixed recycling.

The council built a new extended MRF in 2006 with a highly-installed technology and machinery which could process about 90,000 tonnes of recyclable waste per annum. Previously, the MRF had an operational capacity of dealing with only 6000 tonnes per annum. With the new MRF, the laborious manual tasks for sorting waste streams were kept to a minimum as the segregation processes were done through a screening system (see Figure 6.1). This reflected that the council currently possessed an effective plant to recycle large quantities of waste streams and stop disposing of the waste into landfill. With the participation of businesses, this would no doubt
assist the local authority in achieving its recycling targets set by WAG in regards to MSW. However, surprisingly, the local authority had limited the MRF to their waste recycling collection. They did not allow other private sector waste carriers to use the council’s MRF to recycle their waste for a charge.

**Figure 6.1: The new extended MRF of the local authority**

Originally, the local authority was focusing only on recycling waste from domestic properties because the operational capacity of their old MRF facility could not allow them to deal with commercial businesses. Now after they built their new MRF they extended the service to have a recycling system for commercial businesses. However, they used to separate between the
domestic and commercial recycling systems. Although the materials were going to the same segregation and baling processes, the collection of domestic and commercial recycling systems was entirely separate. A typical comment was:

_Literally, we have just started commercial recycling. It mirrors the domestic recycling system. We currently collect about 20,000 tonnes of waste from commercial sector; 99% of which is being gone to landfill. So, now our target is half of that waste should be recycled and half should go to landfill. We do a cardboard collection, a glass collection and a mixed recycling collection in a bag._

(Officer 2)

The council intended to provide the recycling service to the whole commercial sectors located within the local authority’s boundaries. Initially, the council planned to focus on their current clients who dealt with (3500 business) and try to get most of them recycling. Afterwards, they would target the rest of the businesses in the locality (6500 business). Interestingly, the council planned to offer the service to any business wanted it regardless of size, location or type of materials produced (except hazardous waste). One of the officers interviewed said: “We have not got a specific target in terms of number of businesses. We want to push it to as many businesses as we possibly can” (officer 2). They organised leaflets explaining the recycling service, how to do it and the importance of recycling which would be mailed to all businesses in the local authority to inform them about the council’s recycling service. Hence, small hotels could recycle most of the waste streams produced through using the local authority’s waste carrier. This is best explained in the following excerpts:
We will offer the service to anybody who wants it. I got a leaflet going to print today. So, every business will be mail shot with these leaflets to explain exactly what we are doing. We have 10,000 businesses in the city, we have decided to hit our current customer base first (3500 customers) and then a month latter we will mail shot the other 6500 that we do not actually do any work with.

(Officer 3)

All of the officers interviewed argued that the local authority had to provide commercial recycling in order to reach their recycling targets which were set by WAG otherwise they would face huge fines imposed by WAG and European Parliament. The local authority was required to achieve 40% recycling rate of MSW by 2009/10. In Wales, these targets were based on both domestic and commercial waste streams. Thus, the local authority could not achieve their recycling targets until they rerouted part of the commercial waste from landfill as well. They confirmed that commercial recycling would benefit the local authority as well as other parties in the local community. Recycling would help the local authority to generate income, conserve the useful life of the landfill site and stimulate the economy in terms of producing recyclable products which could be used in Wales or anywhere else in the UK. The council would continue in doing commercial recycling as long as more businesses wanted to recycle. As one local authority officer said:

Well, it forms part of our municipal waste. We have a strategy to recycle and compost. So we cannot ignore it. We have to do it otherwise we will face fines from WAG and the European Parliament. These fines could amount millions of pounds if we did not work with businesses to recycle. I mean that is the main driver.

(Officer 2)
6.2.2.1 Mixed recycling bag scheme

All of the officers interviewed argued that the mixed recycling bag scheme was the most convenient and efficient system for small hotels to recycle their general waste. This scheme would make recycling easy for businesses because they would not need to separate their waste materials and thus eliminating most of the obstacles associated with the process of segregating waste (e.g. time, space and cost). With the mixed recycling bag scheme, all the materials that should be going into the bag were printed on it. It was very critical for the success of such scheme that the waste materials should not be contaminated with non recyclables (i.e. food waste). If it was contaminated the collection team would not be able to pick up the bag and the business would be subject to pay £75 fine because it was a littering left on the street. This is best explained in the following excerpt:

I think offering a mixed recycling collection is incredibly convenient to businesses. They do not need to have different bins for all different materials. They can have the bags and put it all together and as long as they do not contaminate with non-recyclable materials there will be no problem and it will be cost effective to do it and easy to use.

(Officer 2)

Furthermore, this scheme made the service easy and efficient way to be delivered by the council because they did not have enough vehicles to run separate recyclable collection as some other local authorities did. Instead, they collected all the materials mixed in one bag and then they invested in separating them later in their automated MRF. Nevertheless, a large number of business operators might have a misconception about the scheme. They would think that the council would not recycle the materials because all of the
recyclable items were put into one bag. This was the case with some hoteliers who recycled illegally using the domestic recycling system. They were frustrated when the council transferred the recyclable materials mixed in the same lorry. They thought that the materials would not be recycled and thus felt that their effort which put in separating out waste materials had not been used, as explained below:

_We collect recycling mixed in one bag and separate it out later in our plant because we do not have the vehicles and/or the provisions for collecting glass separately, cardboard separately, paper separately and so on. So, we collect it all together but businesses and residents often will think that we will not recycling it because we collect it all together, where in fact we do. That is really an efficient way for us to get it basically._

(Officer 2)

### 6.2.2.2 Constitution of networks between small hotels

On asking the interviewed officers about the possibility for the local council to lead an initiative to get small hotels working together (networking), most of them were more interested and stressed the importance of the idea to the council as well as small hotels. They indicated that they would be very keen to look at this issue in their future strategies. It would be very effective if small hotels in the same street had some communal arrangements so that they could separate their waste together prior to collection. So, instead of running individual waste collection the council would collect the recyclable materials altogether. Likewise, such networks would help small hotel operators to share information about SWM issues and benefit from successful cases. This result is consistent with Apotheker (1995) and BRASS (2006) who
commented that networking could be an effective mean to help local authorities to collect recyclables from small businesses.

At the time of conducting this research, the local authority’s waste management officers had showed a great commitment to the commercial recycling system. One of the officers asserted that they would collect the recyclable materials from any business wanted the service even if there was only one business did recycling along the street. They recognized that it would not be a cost effective for the council to run individual recyclable collection from small businesses on the short-term but they would use that as an opportunity to build a customer base for recycling in the future. The excerpt below best illustrates some of their opinions:

*Definitely, I think it is a good idea because from our point of view if we can get them working together it will be more effective for us to collect. We will definitely do it. I will be interested in that … even if we know that there is only one business that makes it we will still do it but it will cost us a lot more money but if we get one customer we are going to knock on the doors of all other businesses in that area and trying to get those businesses too.*

(Officer 2)

### 6.2.2.3 Establishing Commercial Waste Recycling Centres (CWRC)

When the interviewed officers were asked about the possibility to build CWRC, most of them believed that it would be an important facility to support commercial businesses to recycle their waste. One of the officers indicated that this issue was investigated recently by one of the local government team who reported that CWRC was a forward step to encourage commercial
businesses to recycle. There were a number of factors that should be considered in the decision of building potential CWRC for businesses, including: location of the facility, availability of land and number of businesses in the area to feed the facility.

However, officers referred to some difficulties obstructing the implementation of the initiative: the price of the land was extremely expensive in the locality and it was so difficult to find a place to set a facility for waste beside businesses because that kind of sites was not preferable from the local residents. This finding is in line with Gray (1997) who indicated that local communities often lobby to waste projects to be set aside. Moreover, one of the officers added that the council could not provide any waste recycling site for businesses until they increased those used for domestic properties in the locality. One local authority officer said:

_That was looked at, there was a local government’s body did a full survey to see how many businesses would use it. He said that it would be quite good but again that would be in the future. The price of land was absolutely ludicrous and there were not a lot of places where you could set up a facility for waste, nobody wants it, do they?_

(Officer 3)

6.2.3 Constraints upon the local authority to recycle small businesses’ waste

Location of small businesses was often considered a restriction upon the council to collect recyclable materials from them. The council was restricted with the size and accessibility of the roads as most of SMEs were located in very narrow lanes where the council could not reach them with their vehicles.
to collect recyclable materials. The physical buildings and structure of the city, in regards to domestic properties, had been converted slowly to small businesses, e.g. some small hotels and B&B in the city were originally domestic houses. As one local authority officer commented: “the businesses where they are located”. However, with the current recycling system for commercial businesses, the council would collect recyclable materials from any business as long as they were located within the boundary of the local authority. One of the officers interviewed asserted that the council would change its waste collection methods or use smaller trucks in order to suit the needs of small businesses and reach any business wanting to recycle.

Almost all of the officers interviewed asserted that lack of financial resources was the most important factor influencing and/or obstructing the council’s waste management plans. Actually, they were constrained with a very small budget allocated to SWM activities. It constituted only about 3 – 4% of the whole fund given to the council. They argued that SWM was very costly business and such a small fund covered only a small part of SWM operations, e.g. salaries, vehicles, MRF, maintenance and facilities. This result is consistent with previous research (Coopers and Lybrand, 1993; Ooi, 1995; Adams, 1998; Biswas et al., 2000; Cohen, 2006b) which argued that all local authorities in Wales lacked the resources to provide a comprehensive recycling system. One local authority officer said:

> Basically, the biggest influence impact upon us is finance. The fund that we spend comes from different sources: 20% come from domestic rates, 40% come from businesses rates and the other 40% come from grants (WAG and European funding). As
a county council we have to look at the varied services for the residents of the city, e.g. social services and education, that is taking lots of money. Currently, waste management has been given about 3-4% of the whole fund. Our biggest bill here is salaries because it is a labour intensive plus also the resources that we use like lorries which cost about £50,000, you just think of a lorry very very located equipment.

(Officer 1)

Also, lack of personnel resources was one of the significant obstacles facing the local authority’s SWM operations. Most officers explained that the local authority’s waste management team had an insufficient number of officers to cope with the different SWM activities, e.g. education, enforcement, collection and processing. As one local authority officer said:

We are trying to educate as many people as we possibly can but we are physically not enough to do that. In the past, there were things that we could not do better but that had purely been down to financial constraints and there were physically not enough people.

(Officer 4)

Obviously, the local authority could have a problem with the frequency of collection. At the time of conducting this research, the council had a limited number of vehicles used for commercial waste collection. However, they had plans in place to invest in buying more vehicles and waste storage bins as the bins would give clients greater storage capacity rather than bags. Thus, the council would not need to collect so frequently. Moreover, contamination of the waste was a big challenge facing the local authority in recycling commercial waste. Most of the officers interviewed argued that it was very difficult and expensive to segregate contaminated waste. Thus, small hotel operators would have to put some efforts in it and maintain the materials not
contaminated with food waste to make it happen. They stressed on the importance of educating businesses on how to do it. As one local authority officer commented:

In theory, we can have a hundred percent diversion from landfill but practically it is not going to happen. I mean we are relying on our customers to do all these things. If it is contaminated it will be sent to landfill, that is out of our control. That is the biggest problem. It is all about educating our customers on what to do.

(Officer 3)

On the other side, the council would have no problem with the quantity of recyclable waste produced by a small hotel. One of the local authority officers demonstrated that even if a small hotel generated one bag of recyclable materials the council would still commit to collect it. He said: “we sell them bags so even if they put one bag out we are still going and get it” (officer 2). Similarly, finding a market for recyclable materials was not an obstacle over the council to collect recyclable materials from small businesses. At the time the research was undertaken, the local authority recycled most of the waste streams in their MRF and because they collected from domestic sources as well so they got huge volumes of recyclable items. Thus, they could find a market for each waste stream quite easily. They only had got a problem with marketing mixed products, as explained below:

Market is not a huge issue for us. The only products we have problems with are composite materials where it may be plastic mixed with paper and/or polythene and that is because of the design of the plant because the polythene bags will clog all the conveyors. We are looking at that now and other processes for separation, storage...etc.

(Officer 2)
6.2.4 Composting facility

The local authority had not actively explored composting to reach their targets set by WAG (the authority was required to compost 40% of MSW by 2009/10). At the time the research was undertaken, the local authority was more interested in recycling commercial waste to keep it manageable. As one local authority officer said: "It is one step at a time for us. Basically, we are developing a business" (officer 3). Although the council had a programme specifically directed towards promoting composting at home they did not provide any facilities to help businesses (i.e. small hotels) compost organic waste other than providing informal advises if anybody asked. As one local authority officer commented:

\[
\text{With food waste, it is very difficult anyway because most of operators do not have the facility within their hotels to effectively compost it and keep it healthy.}
\]

(Officer 2)

The council only collected green waste from domestic properties for composting because they had an open windrow plant. However, the council could not collect food waste because they still did not have the invessels operating facility (closed windrow) to compost it. Interestingly, the local authority developed a plan to finish the structure of its closed windrow plant by 2008 and then they would be able to deal with food waste and process it. The council recognised the importance of composting food waste as the locality had a large number of food service outlets. Collectively, they produced large quantities of food waste, most of it disposed into landfill. Therefore, they would have to look at small hotels in the future as a part of
the food service market in order to collect greater volumes of food waste that
worth composting. This meant that small hotels would hardly have any waste
to dispose into landfill because currently the council offered a mixed recycling
bag for general waste, and in the future the council would be able to collect
food waste and compost it, as explained below:

_We will be able to take food waste on board from 2008. I think because now our composting side is what we term ‘open windrow’. So, at the moment, we can only take green waste and compost it. From 2008, we will also look at closed composting operation which we can use heat to actually progress the composting process and we can take food waste at that stage._

(Officers 1)

### 6.2.5 Major elements to influence SWM practices in commercial businesses

Interestingly, the local authority’s waste management officers interviewed
identified four main factors that could act as incentives and lead hoteliers to
do recycling: (1) **the cost of recycling** – there should be an effective recycling
system offering the service cheaper than landfill. So that businesses could
achieve financial savings. (2) **Legislation** - the government should set
legislation for recycling. (3) **Convenience and ease of recycling to do by small hotels.** The public sector as well as the private sector’s waste carriers
should make recycling an easy option for business operators and provide
them with the tools and facilities required for recycling. (4) **Awareness** - small
hotel operators had to understand the importance of recycling, particularly for
their businesses as the environment represented a significant part of the
tourism industry. One local authority officer said:
I think cost is the most important thing. If you can prove that it is going to save the business some money they probably will do it. If it is easy to do they will do it. If you can collect it regularly and on time all will take part. I think recycling is important part to that kind of businesses to their product. It makes a good business sense. If the streets of the city are full of rubbish, if the environment is continued to be polluted we will not get any visitor. So that should be an incentive and plus the fact that it is cheaper to recycle than to dispose of waste to landfill.

(Officer 2)

6.2.5.1 Cost

All of the local authority’s waste management officers interviewed agreed that the charge of waste disposal would be the most effective motivator to encourage businesses to do recycling. At the time of the study, it was about 20% cheaper to recycle than dispose of the waste into landfill. It was £1.02 per bag for general waste which disposed into landfill and 89p per bag for recycling. In this case, the charge would not be encouraging to most hoteliers to do recycling. They would not do recycling to save 13p a week per bag. However, one of the officers argued that it was not a massive gap at the moment but in the near future the gap would be widen as a result of the continuous rising in the landfill tax. So there would be cost saving and real financial motivation for hotel operators to do recycling. Martin and Scott (2003) similarly commented that the current landfill tax in the UK had failed to significantly change or influence small business SWM strategies. This is best explained in the following excerpts:

Yes, that is the main encouragement. It is probably about 20 percent cheaper to recycle than landfill but that gap is going to wide as we go on and as landfill costs rise. It is just too early to say at the moment.

(Officer 2)
It is very difficult to find people to do it for 13p unless they are huge users but for one bag 13p a week does not make a lot of difference to the wallet does it? Unless they really want to do it they are not going to do it.

(Officer 3)

The UK landfill tax was much lower in comparison to other European countries, e.g. Germany. In this respect, most of the officers interviewed asserted that the local authority had only two years left in the useful life of its current landfill site. Thus, they intended to sustain this site and reduce the amount of commercial waste disposed into it. They believed that this could not be achieved unless the charge for landfill had been continuously increased and the charge of recycling was reduced. This finding is in agreement with that of Morris et al. (2000) who indicated that the diminishment of landfill sites was a powerful incentive for most local governments to cut down the quantities of waste discharged into landfill and promotes alternative waste disposal methods.

The local authority charged businesses either by the bag or by the bin. It was a business decision to choose between those two systems. Basically, it depended on the amount and types of waste a business would produce and also the available space allocated for waste storage area. The council’s charge for waste collection would be influenced by the frequency of collection and size of the bin. Interestingly, one of the officers interviewed added that they might charge businesses in the future by weight and this would be an incentive for most businesses to cut down their waste, as
Fullerton and Kinnaman (1996) indicated that ‘pay as you throw’ was an effective policy to encourage businesses reduce and recycle their waste. This is best explained in the following excerpt:

We charge by the bin or by the bag. We sell them a roll of bags; all our bags come in a roll of 13. The price of the bag includes the charge of the bag as a product and the charge for collecting it. Also, we currently used 360, 660 and 1100 litres bins for commercial businesses. These sizes are options for them but we use 240 litres bins for domestic houses.

(Officer 3)

By law, the local council must keep records for waste collection. At the time of this study, these records could show the quantity of waste that had been collected everyday from commercial businesses as a whole. Thus, the only feedback they could provide to businesses was regarding the volume of waste. For example, how many bins or bags had been collected? One of the officers interviewed said: “We cannot tell individual businesses the details of exactly how much they get by weight” (officer 2). However, the council would look at charging businesses by weight in the future. So that, they could inform customers on how much waste they produced every turn.

6.2.5.2 Legislation

The local authority is the governmental body who responsible for enforcing the legislation along with the Environment Agency. At the time of this research, there were two main aspects which the local authority could use to control businesses using the legislation: (1) ensuring that businesses disposed of their waste correctly, and (2) employing a licensed waste carrier. In this respect, businesses must have a waste contract with a licensed waste
registered carrier and maintain a WTN for the local authority for a minimum two years. The WTN would basically describe the types of waste produced, who was picking it up and how the carrier disposed of it. This contract was considered the proof for the local authority that the waste carrier disposed of waste in a legally-responsible manner and not tipping it somewhere. As one local authority officer said:

*Since the first of April 1991 by law you must have a waste contract that proves who or how you get rid of your waste. That contract must be with a registered waste carrier. The Duty of Care in law states that the business has to take all reasonable steps to legally manage its waste.*

(Officer 4)

Moreover, one of the officers interviewed argued that commercial businesses must be aware and comply with section 34 of the Clean Neighbourhood Act which was known as ‘Duty of Care’. It was a legal responsibility for any business to store, present and dispose of its waste properly. For example, commercial waste cannot be stored on the highway for any reason. Likewise, it was the business duty to ensure that all staff aware of the possible ways to get rid of its waste correctly, e.g. training. Most of the officers interviewed confirmed that legislation could be an effective tool to force small hotels as well as other commercial businesses to make recycling. However, one of the officers felt that it might be legislation to pressurize business operators to recycle but it would be for larger businesses not smaller ones. Two of the officers interviewed asserted that enacting legislation was a political issue and it needed to be discussed and sorted with the Environment Agency,
WAG and UK government because the local authority alone did not have the power to enact legislation.

At the time the research was undertaken, the local authority could use section 47 of the EPA 1990 and force businesses to put their waste materials into a designated container but by doing that they would lose customers. The private waste sector had no legal obligations to do recycling. Therefore, a large number of businesses might prefer to deal with the private sector’s waste carriers if they were enforced to do that by the local authority. However, if there was legislation in place to do recycling the public and private sector’s waste carriers along with commercial businesses would commit to it. A typical comment was:

*There is legislation for the local authority as I said section 47 in the EPA. We can say to someone you must put your materials in that container. If we force that all they do is go to Biffa or Violia etc. where it makes no difference to them. It is all money driven.*

(Officer 3)

On asking the interviewed officers about the council responsibility to educate businesses about how they could legally manage and dispose of their waste, most of them indicated that education was very important as well as enforcement. The council got a job to promote what they were doing more widely. They built a new website and all the information would be available on the internet. They published all the new legislation in the national newspaper, i.e. South Wales Echo. Also, the council held seminars to help businesses understand their legal responsibility in disposing of waste. One of
the officers asserted that it was the business responsibility not the council to find out more about SWM issues. If they just telephoned or e-mailed the council and asked they would get a response on their enquiries. As one local authority officer said:

*Education is just as important as enforcement. We are in a process of writing a lot of press releases for this new legislation which will be published in Capital Times, south Wales Echo, Western Mail and Business Wales. All these information is available freely on the internet or people just ring and ask about it. It is a business’s individual responsibility to find out not for us to go out and educate. We are trying to do more education but it is the business primarily job to find out.*

(Officer 4)

### 6.2.6 Liaison with the private waste sector

All of the officers interviewed asserted that it was very difficult to cooperate with the private waste sector on behalf of reducing commercial waste because there was a competition between them and both of the public and private waste sectors had different targets. The private sector was more concerned with picking up large quantities of waste for landfill. Predominantly, waste companies were landfilling while a few companies did cardboard and glass recycling. The private waste sector only did commercial waste collection to make money and please their shareholders. So, as long as they collected large quantities of waste they would keep doing it. One of the officers indicated that some larger waste companies used to buy of lands and use it as landfill sites across the country because it was a profitable business. However, if they started to help businesses reduce their waste they would lose money. One of the officers interviewed described private waste sector as: “*It is a mafia becoming legal*” (officer 3).
On the other side, the local council collected commercial waste because they believed that it could contribute positively to reach their recycling and composting targets and also they could generate income from it. Most of the officers interviewed felt that it was very difficult to integrate between the targets of both sectors because the private sector did not have the same obligations as the public sector to divert the waste from landfill. One of the officers commented:

*The private sector is a massive problem. We do not speak to each other. I mean we are in a competition. The private contractors can pick up whatever they want and take it to landfill. It does not matter to them. All they want is the money and please their shareholders. Our target as a local authority is to divert it from landfill. They have not got the same obligation as the local authority to pull it out from landfill, totally different ball game.*

(Officer 3)

Officers argued that in the past there was very little coordination had been done with the private waste sector. As some of the larger waste companies had serviced the council’s bring sites. Likewise, the local authority had informally spoken to the key players of the private waste companies regarding the collection times in the city centre because the council put specific times for waste collection in the city centre. Interestingly, most of the officers interviewed appreciated the cooperation with the private waste sector and hoped to have more interaction with them regarding commercial waste recycling.

At the time the research was undertaken, the local authority serviced about a third of the whole businesses in the locality and the other two thirds dealt with
the private sector’s waste contractors. In this respect, businesses had no obligation to contract with the council but the local authority offered the service somewhat cheaper than the private sector. It was noted that the council operated both waste collection and waste disposal authorities. This meant that the authority could collect the waste and get rid of it quite easily unlike the majority of the private waste companies.

The local authority had no control over the private waste sector, all managed by the Environment Agency. One of the officers interviewed expected that the private sector companies would no longer be able to play much role in the locality for the long-term because the capacity of the local authority became much greater than theirs after the council had built such huge infrastructure. He said: “I can see the day when the private sector will move out of the city” (officer 2).

Two of the officers interviewed suggested that the UK government had to address two main issues in order to influence the private sector’s SWM practices: (1) make recycling compulsory for businesses and thus waste companies would have to recycle, e.g. packaging regulation. (2) Increase the landfill tax. However, one of the officers was not convinced that increasing landfill tax would effect the private sector’s SWM operations but it would. Once the difference between the cost of recycling and landfilling was very big the private sector would have no option other than recycling or losing market share even if they had landfill sites. They would not be able to pass the
increases in the price to their customers because there would be cheaper
alternatives. One of the officers said:

_The tax is governed obviously by the government, every April it
goes up. Once the difference was a massive gap the private
companies were not going to do anything about it._

(Officer 3)

### 6.2.7 Duties of the council to control illegal dumping

When the officers interviewed were asked to clarify why some hoteliers were
found using the domestic waste recycling system illegally, one of the officers
asserted that a large number of small business operators always had a
misconception about the waste service charge. They thought that the charge
was included in the business rates and thus they used the domestic waste
system which was illegally to use it as a commercial business. This result
accords with Morris _et al._ (2000) who showed that a lot of businesses were
covertly using the domestic waste stream and civic amenity sites. Some local
authorities, e.g. Essex and Lincolnshire reported 10-15% increases in
domestic waste in 1997-98 which increases the council tax by £10 per
household. As one local authority officer said:

_I think there is a misconception within businesses that they
should get a free collection of waste like you have if you do
cycling from your home but that not the case. Also, a lot of
businesses think that the charge is included in the rates and
thus they use the domestic system which is illegal. They think
they can just put a black bag out and it will get collected and it
will because our collection guys do not necessarily know that
this black bag is coming from a business so they tend to pick it
up._

(Officer 2)

To overcome this problem, the local authority planned to start a system in the
future to characterise the bags that had been used for commercial waste
collection in order to control the fraudulent actions and make the bags specific to each business individually. They would put a barcode on the bag and the collection team would have a barcode reader to scan and register the number of bags collected from each business. Legally, officers asserted that if any business was suspected using the domestic waste stream the enforcement team would run the trace and find out the details of this business and then an enforcement action would be taken against him. However, at the time of this research, the enforcement team within the local authority was composed of too small number of officers to trace this huge number of businesses and find out those who penetrated the legislation. In fact, small hotel operators must understand that there was a charge for collecting their waste and education was the only way to do that.

Likewise, officers indicated that commercial businesses were not allowed to use HWRC because these sites were basically designed for domestic properties. However, there were number of small hotels were found using HWRC for disposing of their waste. In this regard, two of the officers interviewed argued that the local authority was working towards improving the security in these sites to stop businesses using them. As one local authority officers said: “any suspicious van would be stopped by the security officer” (officer 4). Moreover, the council was looking at using a system called ‘number plate recognition’ so they could identify people’s vehicles and find out whether they were coming from commercial sources or not. However, it seemed that such a system would not be successful in this issue as all
residents would have the right to obtain a recognition code and thus they would be able to use HWRC but the council still would not know whether they were householders or business owners. This is best explained in the following excerpt:

"No, they must pay for the collection. We have got Civic Amenity Sites and HWRC. That is purely for domestic waste streams not for businesses because again it is funded by the council tax payer and any business do not pay that. So, if they were caught enforcement action would be taken against them."

(Officer 3)

Small hotel operators wanted to get the advantage of the domestic waste recycling system and use it in recycling their hotel waste. However, all the officers interviewed refused any sort of combination between the domestic and commercial waste streams as the domestic waste system was basically funded by the council tax payer (householders) where commercial businesses did not pay that tax. Thus, if the local authority allowed small hotels to use the domestic waste system this would increase the burden and cost on the domestic waste collection system. Furthermore, one of the officers indicated that commercial businesses had to pay for the service because it was not sustainable for the environment to offer them a free service and also to enable the local authority to recover the cost of collection, labour, processing etc. He said:

"I know a lot of councils in Britain have done free service and I know a lot of them regretting that because it will not be sustainable if we offer a free service to businesses."

(Officer 3)
6.3 Private waste sector

6.3.1 Working with businesses in terms of prevention and/or minimisation of the waste

The results revealed that waste minimisation was an integral part of the service provided by some waste companies (3 out of 9), particularly larger waste companies, to their clients. In this respect, they provided a site visit to audit customer’s waste streams and identify sources and quantities of waste produced. They assigned someone who would be familiar with the customer’s business and knew exactly what they produced to develop their SWM system. Obviously, the expert would discuss with the customers the ways of actually reducing the waste, (for example, changing production processes) and advise them on how to cut waste at source in order to eliminate the waste in the first place. The next stage they would help customers to reuse various waste materials (i.e. cardboard cartons, plastic packaging) and improve their recycling index through on-site segregation. In this way, larger waste companies were not only helping the environment but also they saved cost to the customer. This is best explained in the following statements:

*The drive that we push is helping the customer to actually not produce the waste in the first place and if we can change their production processes so they do not actually generate the waste in the first place. We feel as we are really tackling the waste hierarchy in the strongest sense which is minimisation then reuse then recycle then disposal. So, that is the way we tend to operate.*

( Participant 8)

*We will have a look at what type of waste is being generated and if we can identify minimisation opportunities we will say that*
to customers... Individually, we will assess these businesses in order to reuse equipments or reuse pallets or boxes or whatever. So, we can identify avenues of operation and financial advantages to both parties.

(Participant 1)

Moreover, these larger waste companies did not charge businesses any management fees on providing waste prevention/minimisation services but they only charged the customer for collection and disposal of the waste. From another perspective, the participants of these companies did not agree with the type of RM – based contract which implied that the waste carrier should provide waste minimisation services to customers for a fee (Ligon et al., 2000). They believed that providing such services was an integral part of any waste company’s responsibility towards its customers. The waste carrier should have the capability to tackle all SWM options set in the waste hierarchy. One of these participants added that the waste carrier should provide waste minimisation services to customers otherwise they would change to competitors who would offer them such waste minimisation services and help them to reduce cost. It seemed that larger waste companies looked at the bigger picture as helping businesses to reduce and recycle their waste would reduce the onus put on landfill. One private sector participant commented:

*It is part of our responsibility to customers to actually minimise their waste because if we do not offer that service or work in that way then they will go to our competitors who will offer that service.*

(Participant 3)
Surprisingly, the participants of these waste companies which helped businesses in terms of prevention/minimisation of waste claimed that they did not actually provide any support to small businesses regarding such alternatives rather than helping them to recycle. They limited such facilities to larger waste producers, (e.g. manufacturing sector). As one private sector participant commented: “we carry out a responsibility to help businesses to minimise waste but for larger businesses only” (participant 8). This suggests that it is necessary that these waste companies should consider providing the waste prevention/minimisation options to smaller businesses as well and not focusing only on larger waste producers.

On the other hand, the majority of waste companies (6 out of 9), particularly small waste haulers, could not work with businesses in regards to prevention and/or minimisation of their waste as they did not have the capability to do that work for businesses. One of the participants interviewed demonstrated that every business had different nature and the waste carrier was not necessarily aware of how other businesses worked. They believed that the waste carrier had very little to provide in regards to waste prevention/minimisation objectives. One of the private sector participants argued that the carrier could only help with recycling by visiting the customer’s site and trying to help the customer to recycle as most of the waste streams produced. He commented: “most of the work that we do is reducing the actual impact of disposal by recycling” (participant 2). Most waste companies put the responsibility over the business to coordinate with
other specific organisations that could help them to reduce or cut their waste at source. As one private sector participant said: “they should be talking to specific groups and organisations that would help them to manage the waste which they produced” (participant 5).

It was found that larger waste companies which provided waste prevention/minimisation services to their customers refused a common belief of the majority of smaller waste haulers in regards to tackling waste minimisation option on behalf of their customers. Most participants of smaller waste companies believed that providing waste prevention/minimisation services to customers would contradict with their strategic objectives in making profit. Typical comments were:

No, because if they are reducing their waste where I gonna make my money. So, I am not gonna encourage them. I want their waste.

(Participant 6)

Well, that is not our objective. We are here to make money not to help them reduce their waste.

(Participant 2)

However, larger waste companies perceived waste prevention/minimisation approach as a long-term investment. One of the participants indicated that working with businesses to help them reducing/recycling their waste and saving cost was a good strategy to retain customers and attract more new customers. This finding is in agreement with previous studies (Hart et al., 1997; Bel and Miralles, 2003) which indicated that the private sector had
more incentives to innovate its services than the public sector in order to gain
greater market share. This is best explained in the following excerpt:

_We are trying to take a long-term view on it. I mean to a certain
degree you may lose money but I do not see as losing money really because that money that you are losing you are really investing in that customer. I mean if you can go to a customer with these strategies for minimisation and reducing money and reducing costs, if you retain that customer that money will spend in my pocket because they will keep come back and back and back. It is much cheaper to retain a customer than go out and try to find new one all the time._

(Participant 1)

### 6.3.2 Handling commercial waste

#### 6.3.2.1 Recycling

Unexpectedly, most private waste sector companies (5 out of 9) were more concerned in recycling. Two of them were offering a complete package of recycling, (e.g. cardboard, glass, metal, plastic and paper). One of the participants interviewed demonstrated that they operated two different schemes for recycling (clean waste and mixed loads). For clean waste scheme, if customers segregated their waste then they would be given a second container for glass or cardboard or paper etc. The waste carrier would then identify with customers a schedule time for collection and offer them two collection services (one for general waste and the other for recyclables). For mixed loads scheme, the waste carrier would collect the waste mixed from customers and then invest in segregating it in their recycling facility. As one private sector participant said:

_Some loads are coming mixed. So, you may have paper, plastic and cardboard in one lorry. So, it needs to be segregated by people over there._

(Participant 1)
It was found that these waste companies which offered recycling service had either a manual recycling facility or a waste transfer station where they could segregate and recycle their waste (see Figure 6.2). The segregation processes were carried out manually which was very difficult process, time consuming and labour intensive. They actually invested in separating and recycling wide-range of waste streams, like cardboard, plastic, metal, glass and paper.

Interestingly, it was found that one of the private waste companies did not invest only in segregating and recycling waste materials but also they operated a processing facility to process most of the segregated waste materials for producing new raw materials. This had actually facilitated the process of finding a market to recyclable materials (see Figures 6.3, 6.4, 6.5 and 6.6). For instance, they shredded up tyres and sold the rubber chips to be used for building horse arenas. They chipped up wood and sold it to factories to make kitchen, desks etc. Likewise, they processed and baled cardboard, plastic and metal which would be sold to the appropriate market for making new products, as explained below:

*We do car tyres. We cut them up; take the wire out and we use the rubber chip for horse arenas; for training race horses. It gives a bounce. We also send lots of tyres to cement kiln for burning as a fuel rather than burning coal or oil. The calorific value of tyres is far higher than coal. We take out wood. We fragment it up and that goes to chip board factories to make kitchen, desks and also burning it for electricity.*

(Participant 2)
Figure 6.2: Waste segregation and recycling activities undertaken by a private waste company
Figure 6.3: Facility to slice and fragment wood
Figure 6.4: Facility to process and grind wood

Figure 6.5: Facility to process and break down tyres
The findings showed that most of these companies which interested in recycling would like to recycle every waste stream but they still had a difficulty in recycling specific materials (e.g. certain types of plastic, mattresses and clothes). Consequently, they disposed of these items through landfill. One of the participants argued that they could segregate these waste streams in their recycling facilities but the problem was that there were no outlets to send them (lack of recyclable markets). This reflected that as long as the waste carrier was able to market the waste material he would be very interested to recycle it because at the moment it was a cost over the waste carrier to dispose of the waste into landfill. As one private sector participant asserted: “the waste comes here then we segregate it in our waste transfer station, part of that waste sent to landfill but we cut that down since I found homes where I could put things” (Participant 5).
Overall, there were very limited number of waste transfer stations in the locality (about 4 or 5), and thus such facilities were not available to every waste carrier. From another perspective, not all waste companies that run waste transfer station accepted other carriers' waste into their facilities. This was, in fact, an important issue because with the upcoming legislation the waste could not be just disposed directly into landfill but it had to go through a waste transfer station to be pre-sorted and some waste streams taken out of it before it was disposed into landfill. This suggests that WAG should invest in building more waste transfer stations across Wales as an alternative to landfill and distribute their geographical locations properly to avoid miss-placing.

Generally, the charge for waste collection depended on the size of the container and the frequency of collection. However, two of the private sector participants indicated that the charge would be cheaper if the customers segregated their waste at source. They tried to encourage their customers to recycle through offering them a cheaper recycling service and containers to segregate their waste. However, the decision to recycle depended ultimately on the producer of the waste. At the time of the research, the cost of recycling offered by most of the private waste companies was not really encouraging to commercial businesses to recycle because it was not economically-viable. As one private sector participant said: “it is probably about 10% saving to recycle than landfill” (participant 4).
6.3.2.2 Composting

Almost all the private sector waste companies could not work with small hotels in the Welsh local authority to compost their food waste as they did not have a facility to compost. Landfill remained the primary route used by private waste carriers for disposing of food waste. Nevertheless, one of the private sector participants argued that he would be interested to transfer food waste to a suitable facility to get composted but only if it was large volumes which was not the case with small hotels. Moreover, most of the participants interviewed were not willing to invest in building composting plants in Wales. As one private sector participant said: “No, it is a specialized area and there is not a lot of money in it” (participant 2). This company worked in a partnership with the local authority to compost green waste. However, they found composting less economically-viable to them.

6.3.2.3 Landfill

It was found that some private waste companies (4 out of 9), particularly smaller waste haulers, did not have the resources, infrastructure or the facilities, e.g. MRF to actually cope with recycling. They just collected the waste from clients and took it straight to landfill. The corporate social responsibility was something that lowered down in their priorities unlike the economic objectives which were dominant. One of the participants interviewed felt that by delivering waste into landfill his responsibility was done successfully. Surprisingly, the Environment Agency was the governmental body that should end up the process of disposing of the waste
into landfill. However, they remained issuing of waste management licenses which literally permitted the waste carrier to collect the waste and tip it into landfill (waste carrier license). As one private sector participant said: “we have not got the facility to recycle. We just pick it up and take it to the tip” (participant 7).

Moreover, the findings showed that two private waste companies of those who run waste transfer stations to segregate and recycle waste still disposed much of their waste into landfill. As one private sector participant said: “on average, we collect 250 tonnes of waste daily. We recycle only about 15% of the waste collected” (participant 3). This result could be explained by the fact that both companies invested only in recycling waste streams that were actually pre-sorted by waste producers, whereas mixed waste was disposed directly into landfill. One of the participants argued that it would not be a cost-effective to recycle mixed waste because it was labour intensive. They put the onus on the producers of the waste to actually stream it to make it a viable opportunity for recycling. It appeared that although some private waste companies provided commercial recycling they still disposed much of waste into landfill. This result supported Read (1997) indicated that the public sector had a greater commitment to reduce the dependency on landfill and use other sustainable SWM alternatives than the private waste sector.

6.3.3 Main barriers for recycling waste

Most of the participants interviewed (7 out of 9) agreed that the costs involved in recycling had made it prohibitive. They explained that it was very
costly for the waste carrier to run a MRF or a waste transfer station with the cost of machinery, staff, equipment, vehicles, rates, insurance and license fees to segregate and recycle waste. It cost hundred thousands of pounds a year to run a recycling facility, just before doing any work, to spend on these varied aspects. In addition, some waste companies (4 out of 9), particularly smaller waste companies, did not have the facility to segregate the waste. This was actually making landfill far more attractive to most of the private waste companies to get rid of their waste as it still represented a cheaper option for disposing waste. As one private sector participant said: “capital funding is a big issue, buying the machinery to do the job, at the end of the day whether it is profitable or not” (Participant 1).

Furthermore, some of the participants interviewed (4 out of 9) indicated that finding outlet for the materials was one of the biggest obstacles facing them in recycling. Thus, it was very critical for the waste carrier to think about the market before taking any decision to recycle any waste material. They demonstrated that there was a lack of market for recycling some waste streams in Wales (i.e. certain types of plastics, fabrics, clothes). Adams (1998) and Hall (2003) similarly pointed out that recycling did not always constitute the PBEO as, in some cases, it was difficult to get rid of the recycled materials.

In this respect, two of the participants interviewed argued that they were operating waste transfer stations to sort out and recycle the waste collected.
However, they were still paying to discharge of some waste streams as they either lacked the marketing facilities or the recyclers did not want to give them a rebate for the waste. So, at the end, they were still paying for the disposal of recyclable waste together with the enormous cost involved in segregation processes. One of the participants pointed that most waste carriers in Wales could hardly find a recycler or a company to collect recyclable materials and give them a rebate, whereas in England there were lots of companies that would buy a wide range of recyclable waste streams from the waste carriers. Typical comments were:

_I can find a market but not in this area. If we lived up in London I could probably have a rebate of things but being here we could not. So, I got to pay. There was a company said that they would buy glass but they were too far from the area. They were in Birmingham and it would not be worthwhile. So, the only place where you can put textile, glass and some types of plastic is landfill because there are no places where you can take them to or they are too far._

(Participant 6)

_It is difficult to find home for some of the recycled materials because not everybody wants it._

(Participant 2)

However, one of the participants interviewed added that there was a market for recyclable waste materials (e.g. wood, plastic and fabrics) but there were very few processing plants in Wales (see Figures 6.3, 6.4, 6.5 and 6.6). A facility to resort, process and breakdown the materials so it can be reproduced. He indicated that the whole process of SWM in UK needed to be reviewed in order to move up the waste hierarchy and encourage more sustainable SWM alternatives rather than landfill. He questioned: what
processing plants were being put in place by the local or central government to replace landfill? Why Germany was better than UK in regard to SWM? As explained in the following statement:

*There is no-where to send it to be processed. The government should give us the alternative. We need processing plants; we have not got any.*

(Participant 5)

Moreover, one of the participants raised the issue of client lethargy. He indicated that a lot of business operators were just unwilling to recycle or actually see that there was an opportunity to save cost on waste disposal. He said: *“it was frustrating to see a lot of customers were not interested; you cannot force the customer to recycle; you can only encourage”* (participant 8). For small hotels, it would be impossible or too expensive for the waste carrier to invest in recycling general waste, (e.g. food mixed with paper, cardboard and plastic). Most of the participants interviewed stressed on the importance of not contaminating the materials with food waste. Hoteliers should segregate their hotel waste or at least keep it clean to make it easy for recycling, as illustrated below:

*It is too expensive to segregate all the dirty waste (i.e. food mixed with paper, cardboard and anything else), you could not do it. So, it all goes to landfill. It needs to be separated in businesses.*

(Participant 1)

### 6.3.4 Motives to consider sustainable SWM practices

Most of the participants interviewed (5 out of 9) agreed that increasing the landfill tax would be an effective tool to encourage private sector’s waste
carriers to recycle (see section 6.3.4.1). One of the participants demonstrated that, historically, the landfill cost in south Wales was very low and there was an extensive loss of landfill void space as the cost of landfill was far more attractive to both producers and carriers of the waste than recycling. Obviously, lack of landfill sites in Wales would be a significant factor to drive public as well as private sector waste carriers to recycle. This is best explained in the following excerpt:

*We have an issue with landfill, at the moment, the council’s landfill site down the road here is going to be full in the next twelve months. They stocked it to the council vehicles; nobody else can tip in there now because they are trying to save the space.*

(Participant 4)

Moreover, the majority of the participants interviewed (6 out of 9) argued that enacting legislation for recycling would drive all private waste carriers to recycle. A lot of businesses now, particularly larger businesses, were pressurised by central government to recycle (e.g. Packaging Regulations 1997). So, the waste carrier had to offer packaging recycling to stay in that market. However, two of the participants asserted that the government should not set general legislation for recycling unless they secured markets for all recyclable waste materials and provided enough facilities (i.e. processing plants, waste transfer stations) to help private waste companies to segregate and recycle their varied waste streams. As one private sector participant commented:

*If legislation told me you could not put the waste into landfill then end of story. The problem was, if the government told me that I could not put mattresses or cardboard or whatever in landfill, what I would do with that. They have not provided*
anywhere for it other than landfill. There may not be enough recycling plants in my area so they cannot say do not put it in there.

(Participant 5)

In addition, three participants out of the nine suggested that the government should restrict the amount of waste disposed into landfill by setting stringent recycling targets for each private waste company and those waste carriers who exceeded their targets should be encouraged with a slight incentive (i.e. tax credit, reducing license fees). As one private sector participant explained: “by law, you have to send your waste return report every quarter to the Environment Agency; every company has to do that. So, the Environment Agency knows exactly how many tonnes are coming in and how much is going to landfill. If they restricted the amount you sent to landfill to a certain percentage within the business that might help because it would encourage companies who were not recycling to recycle” (participant 4).

It was found that making a profit was one of the main reasons which motivated some of the private waste companies (5 out of 9) to make recycling. One of the participants interviewed explained that the waste carrier initially charged businesses for collecting their waste and then they would invest in segregating and streaming it into their waste transfer stations. Afterwards, they would transfer the recyclable waste materials to different processing plants and get rebate or money back for selling some waste streams (e.g. cardboard and metal). However, there were some recyclable waste streams where the carrier still paid for their disposal or recyclers just
took it free (e.g. glass, wood, mattresses and clothes). Overall, there was potential revenue to be made rather than cost to be paid for the disposal. As one private sector participant explained:

*If we recycle wood it goes to processing plant and it gets chipped up and it gets recycled but we have to pay for that … We get money back for the metal and cardboard. They buy them from us. We would take glass down to biffa (free tip).*

(Participant 5)

Most private sector participants (5 out of 9) indicated that ‘customer demand of the service’ could act as a significant pressure over the waste carrier to recycle. One of them added that ‘customer demand of the service’ would not only pressurize the waste carrier to recycle but to work with customers towards all the options listed in the waste management hierarchy. If producers of the waste asked for the service (prevention, minimisation, reuse, recycle, compost) then the waste carrier would have to provide such facilities otherwise they would not exist in the market anymore. Recently, the corporate social responsibility issue had increased intensely with a lot of businesses wanted to recycle to show that they acted in a socially-responsible manner. As one private sector participant said: “**There are more demands from customers to recycle to meet their corporate social responsibility element. Our clients are looking at it more seriously**” (participant 8).

One of the participants argued that, currently, there might be a lot of waste companies that were just concerned with collecting and landfilling of waste but basically because their customers were not really concerned about
recycling. Nevertheless, in the next few years, SWM industry in the UK will become more regulated and there will be more pressure put upon the producers and carriers of the waste alike to recycle. As such a lot of these landfill companies will be pushed out from the market as they do not have the facility or the infrastructure to cope with recycling.

### 6.3.4.1 The effectiveness of the landfill tax in diverting the waste away from landfill

The majority of the private waste sector respondents (5 out of 9) agreed that increasing the landfill tax was an effective approach to pressurize private waste companies to divert the waste away from landfill and encourage recycling. One of the participants demonstrated that in south Wales the landfill tax in 2008 was £32 a tonne plus a gate fee for landfill as well. Overall, the landfill cost was between £65 and £70 a tonne and it was going to increase every April. This is now starting to make waste producers and carriers look at different waste disposal options. He said: “it is stunning become more commonplace now” (Participant 8).

Interestingly, the results also showed that smaller waste haulers who just interested in collecting and landfilling of waste could not afford the continuous rising in the landfill tax. As one private sector participant commented: “it is killing us” (participant 7). It would put a lot of smaller waste companies out of business. They would not be able to recover the cost of landfill as most producers of the waste would not accept any increase in the charge of waste disposal. In practice, the results revealed that the landfill tax changed the
way where some waste companies (2 out of 9) tended to operate. They recycled as much as they possibly could to reduce the cost of landfill and save money. As one private sector participant said:

*If I have my way nothing will go to landfill because it is too expensive; that is where I lose my money. This is why I am on to the boys down there all the time and say to them keep pulling out as much as you can because landfill cost as you know is increasing over night. So, the more you segregate the less goes to landfill the more money I make.*

(Participant 6)

Moreover, one of the participants asserted that the landfill tax was designed basically to encourage producers of the waste to recycle and save cost. He said: “*it should be motivating for the customer to recycle because the cost would be increased*” (participant 3). In addition to the potential positive effect of the landfill tax in making private waste companies as well as waste producers more receptive to recycle, one of the private sector participants was also more concerned about the environment. He was aware of the problems facing the planet, (e.g. ozone layer depletion and pollution problems) and explored recycling as an avenue to fulfil his corporate social responsibility and at the same time achieve profit.

On the other hand, two private waste company executives rejected the governmental strategy in increasing the landfill tax believing that it was not the total solution for ending-up the problem of landfill in the UK and Wales. One of these participants demonstrated that the landfill tax might be deterrent for some waste company executives who previously not pre-sorting anything and wanted to send all their waste into landfill but it would not be effective for
the majority of waste companies. They argued that they could segregate all waste materials in their waste transfer stations but they still unable to recycle some waste streams, (e.g. certain types of plastic, wood, clothes and mattresses) as there were no processing facilities in the locality and across Wales where you could send the materials to get processed and recycled. As one private sector participant explained:

Putting the landfill tax up is not going to change that because I am still going to use landfill; no matter what they charge. I cannot get rid of that waste anywhere else because there is nowhere for it to go. There is no processing facility to deal with it.

(Participant 5)

Both of the participants put the onus over the government to build up such facilities as an alternative to landfill. They suggested that the government could use the money collected from the landfill tax and invest in building waste transfer stations and processing plants in order to encourage recycling. In this respect, one of those two participants indicated that the landfill tax was not used as a mean for encouraging environmental improvement but it was used as a tool for generating revenue for the government. This is best explained in the following excerpt:

You can put it up to £1000 a tonne and you will not stop landfill. The government does not give us any destination. We can reduce the amount of waste sent to landfill. We are taking everything out that can be recycled but we cannot recycle it because there is nowhere for it to go to be processed, that is the problem. The government is not helping. It is putting up the landfill but they are not offering an alternative. They do not go any further. They are not saying ‘from the money we use for landfill we will set up processing plant’.

(Participant 6)
One of the participants interviewed added that increasing the landfill tax would encourage fly-tipping by waste producers as the waste carriers would pass the increases in the landfill tax to their clients who might prefer to dispose of their waste illegally. He said: “ultimately if the landfill tax goes up the increases will be passed down to customers” (participant 9).

6.3.5 Working with the public sector

The findings revealed that some private waste companies (3 out of 9), particularly larger waste companies, worked in a partnership with the public sector on the base of recycling/composting waste. However, only one participant indicated that the partnership which they had with some local authorities in Wales (e.g. Cardiff Council, Rhondda Council and Vale of Glamorgan Council) to assist them achieving their recycling targets was beneficial. He demonstrated that they had taken the waste collected by these councils to be sorted out in their recycling facility as these councils did not have such a facility. However, the partnership with Cardiff Council was stopped since they built their recycling centre in 2006. He said: “this partnership with Cardiff council was beneficial in both financial and environmental aspects” (participant 1). Gray (1997) and Community Recycling Network (CRN) (2006) similarly pointed that a lot of local authorities in the UK were actively working in a partnership with the private waste sector to encourage the implementation of more sustainable SWM alternatives rather than landfill.
However, two of those participants who worked with the public sector in a partnership to recycle/compost waste described such partnerships as a waste of time. They were not interested to do any more partnerships with the public sector. One of the participants explained that when working with the public sector it took so long time because of such a routine work to implement any new ideas or strategies to improve the service. He said: “We do work with the local authority towards composting green waste but it takes so long to get from A to B. it is really frustrating” (participant 4). One of the participants added that working with the public sector was not economically viable to the company because they did not make a profit. He explained that there was a difficulty to work with the public sector because they had different philosophies. The council’s strategy was to do it properly to reach their targets. It did not matter to the public sector to make a profit while the company’s philosophy was to make a profit. This is best explained in the following excerpt:

*We did composting for Cardiff Council … We are on different levels. They are on the public sector where profit does not count and I have got to make a profit. The council’s philosophy is to do it by the book to fill their political and regulatory duties … they are very frightened that you may make a profit. So, this partnership with Cardiff Council was a waste of time.*  
( Participant 2 )

Interestingly, it was found that one of the larger private waste companies had worked in collaboration with other waste carriers, particularly small waste haulers, allowing them to use its recycling and composting facilities and charging them for that. This was actually considered a good way to handle
the waste in a sustainable manner as most private waste companies still did not have such facilities to sort out waste.

6.4 Input/output process model for the government to encourage the public and private waste sectors to implement sustainable SWM practices

According to the results obtained from interviewing the public and private sector’s waste carriers, which were analysed and discussed along this chapter, an input/output process model for the government was proposed to drive both sectors to implement sustainable SWM practices in handling commercial waste (see Figure 6.7). The proposed model puts the onus on the governmental bodies, including: the UK government, WAG and Environment Agency to collaborate together and review the whole issues of the waste management industry in the UK. The model entails that the government should first provide the input in terms of support infrastructure and services and then set an effective pressure to drive all waste carriers to make the best use of the waste hierarchy. The proposed model will assist the public sector in achieving their recycling and composting targets and will benefit small hotels as well as all other waste producers to find the waste carrier who can actually help them to manage their solid waste effectively.

*Phase 1 – providing an appropriate support and sufficient infrastructure for SWM industry.* Initially, the government should provide the input and/or the foundation required for helping public and private waste carriers alike to undertake sustainable SWM practices. They have to make recycling a
workable option by providing: MRF, waste transfer stations, processing plants and developing recyclable markets for all waste streams.

**Figure 6.7: Input/output process model for the Government to encourage the public and private waste sectors to implement sustainable SWM practices**

In the Welsh waste strategy 2002, all local authorities were required to achieve 40% recycling and composting by 2009/10. It seemed that the government set targets for local authorities but they did not initially support them with the infrastructure and/or the facilities required to achieve their targets. For instance, the local authority, the main focus of the study, still had not got a composting facility and so they were not able to work with
businesses regarding composting and thus could not achieve their targets. Also, at the time the research was undertaken, the local authority had a problem to recycle commercial business waste because they did not have such a bigger MRF that could enable them to recycle waste from commercial and domestic sources. Nevertheless, they had extended their facility in 2006 and then offered a recycling system for commercial businesses.

It was noted also that the public sector had limited its MRF to their waste collection service. In other words, they did not allow private waste carriers to tip their waste in the facility to get segregated and recycled. Moreover, the public sector had neither waste transfer stations nor processing plants all over the locality. Even most of the larger private waste carriers who possessed such facilities similarly did not allow other carriers to use them. Consequently, a lot of private waste carriers, particularly small waste haulers who did not operate MRF or waste transfer station would have a problem to dispose of their waste appropriately to get segregated, processed and recycled because they did not have access to such facilities.

Furthermore, the findings revealed that private waste carriers were facing a difficulty in marketing specific waste streams (i.e. certain types of plastic, glass, wood etc.) and thus they still disposed of them into landfill. They could segregate these waste streams in their waste transfer stations and incur all the cost involved in the segregation process but they would still dispose of them into landfill and pay a landfill tax because of the unavailability of
recyclable markets for these waste streams. In addition, unfortunately, landfill had been used as the primary waste disposal method for discharging of organic waste (e.g. food waste) either by the public or the private waste carriers because they had not got the facility to compost and even private waste carriers had no intentions to invest in such a facility. Thus, it is essential for the government and/or private sector investors to invest in building up more MRF, waste transfer stations, processing plants, composting plants and to develop markets for all recyclable waste streams to encourage the public and private waste carriers to recycle and/or compost their waste. These facilities should be placed as locally as possible to make such alternatives more economically viable to the waste carrier than landfill.

The government should support all local authorities to carry out their waste prevention/minimisation targets. It is necessary for the public sector to develop different means (i.e. seminars, training, brochures) to educate private waste carriers as well as the local community on how to deal with their waste in a sustainable way and make them aware of the negative impact associated with landfill. Surprisingly, the findings revealed that the public sector had ignored their waste prevention/minimisation targets because they did not have the resources to educate different business communities on how to target all the options listed in the waste management hierarchy. Similarly, most private waste carriers did not have the capability and/or the intentions to help businesses regarding waste prevention/minimisation targets and even felt that providing such facilities would
contradict their objectives in making profit. The model also entails developing some sort of partnerships and communications between the public and private waste carriers on the base of recycling/composting commercial waste. Indeed, the Environment Agency should end up the process of issuing waste carrier licenses and instead encourage recycling licenses.

*Phase 2 – providing an effective pressure.* Once the government developed such infrastructure, all waste carriers would have no reason or excuse to dispose of their waste into landfill as the facilities were set in place for them to recycle and/or compost their waste. However, for those who would not pay any attention and continued in disposing of their waste into landfill, the government should consider providing a set of pressure to force them to incorporate all the alternatives listed in the waste management hierarchy. In this respect, the model identified four different means that could be used effectively to pressurize the public and private waste carriers to implement more sustainable SWM practices, including: increasing the landfill tax, enacting legislation for recycling, imposing recycling/composting targets and customer demand of the service.

Firstly, the government should continue with its strategy of increasing the landfill tax to divert the waste away from landfill. As a result, the waste carriers would find landfill not economically viable option to get rid of their waste because they would not be able to pass the increases in the landfill cost to their customers. Secondly, if customers were legally required to
recycle then they would contract with the carrier who could offer them the service and help them meet their legal obligations (e.g. packaging regulations). Most public and private sector participants believed that both increasing landfill tax and enacting legislation for recycling were ideal tools to stop landfill and encourage recycling.

The private sector participants added two different means that could be used to pressurize public and private sector waste carriers to work with businesses to apply the waste hierarchy: setting recycling/composting targets and customer demand of the service. The Environment Agency should restrict the amount of waste disposed into landfill by setting recycling/composting targets for all public and private waste carriers alike and fine those who could not reach their targets. Now there are targets for the public sector but, surprisingly, the government did not provide an appropriate and/or sufficient support to help them to achieve their targets. In addition, there were still no targets for the private waste carriers. Finally, customers can put an effective pressure over the waste carriers to tackle all the options listed in the waste hierarchy. For example, if customers are really concerned with preventing/minimising and recycling their waste then the waste carrier will have no option other than supporting them regarding these targets otherwise they will change to competitors and thus losing market share.
Phase 3 – Working with businesses to apply the waste hierarchy (output).

This phase is built mainly upon the first two phases. By providing the infrastructure required for SWM industry (phase 1) and developing an effective pressure (phase 2) the waste carrier would be directed towards providing total SWM solutions in dealing with commercial waste (output). They would properly target and incorporate all the options listed in the waste management hierarchy for their customers in terms of prevention, minimisation, reuse, recycle, compost and disposal to landfill at the last resort (the least-favoured route). At this stage, the waste carrier would work on behalf of their customers and understand their SWM requirements. They would provide a site visit to identify and evaluate customer’s waste streams and advise him on the best ways to reduce cost (e.g. reuse boxes and ballets).

6.5 Summary

This chapter explores the possibility of the public and private waste carriers to work with small hotels to manage their solid waste streams effectively. Although the public sector should be more committed to apply the waste hierarchy they ignored their waste prevention/minimisation targets and regarded them as secondary objectives. They even had a difficulty in meeting their composting targets because they still had not got a composting facility to compost food waste. Indeed, they could not assist businesses to achieve these targets. However, the public sector was more committed to recycle and intended to offer the service to any business wanted it since they extended their MRF.
With the exception of some larger waste companies, most private waste carriers did not have the capability and/or the intentions to deal with waste prevention and/or minimisation targets on behalf of businesses. The findings revealed also that many private waste carriers were interested in recycling but they perceived a range of difficulties in recycling (lack of markets, lack of processing facilities and cost issues). Nevertheless, small waste haulers were still landfill companies. Moreover, private waste carriers could not work with businesses regarding composting because they did not have a composting facility and also had no intentions to invest in such a facility.

Despite one private waste company had a successful partnership with some local authorities, the chapter highlighted that both sectors had different targets and thus most private waste carriers believed that it was difficult to work with the public sector in a partnership. The chapter finally develops an input/output process model for the government to drive both public and private waste sectors to implement sustainable SWM practices (see Figure 6.7). The model considered three stages. The government should firstly provide the input (adequate support) and then introduces a powerful pressure (increasing landfill tax, enacting legislation for recycling and imposing recycling/composting targets), together with the pressure that could be excreted by customers. This would lead public and private waste carriers to work with businesses towards all the options of the waste management hierarchy. The following chapter links, evaluates and discusses SWM practices obtained from all sources of evidences.
Chapter seven: An evaluation and discussion of SWM practices across all cases studied

CHAPTER SEVEN:

AN EVALUATION AND DISCUSSION OF SWM PRACTICES ACROSS ALL CASES STUDIED

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7.1 Introduction

This chapter aims to present an evaluation and discussion of SWM practices across all cases studied. It first re-explores and evaluates SWM practices in non-GDES small hotels 18 months after the initial interviews with them and after they had the recycling service from the public sector, which formerly constituted the most significant barrier to their recycling behaviour. In essence, hoteliers were negative towards recycling even after the service was provided to them. Unfortunately, they believed that landfill was the easiest, the cheapest and the most appropriate option to their SWM operation ignoring its harmful impacts on the environment. This supported the introduction of a powerful pressure to drive small hotel operators to manage their solid waste effectively. A cross-case analysis was then developed to evaluate and discuss the findings from non-GDES small hotels, GDES small hotels, along with the public and private waste sectors. The analysis process was approached and designed with the aim of developing a best practice model for the public sector to encourage better SWM practices in small hotels (see Figure 7.4). The chapter further evaluates the findings in respect of TPB and ends up with conclusion.

7.2 An evaluation of SWM practices in non-GDES small hotels 18 months after the initial interviews with them

Four follow-up interviews were conducted with the hoteliers of non-GDES small hotels (SH1, SH2, SH7 and SH8) to evaluate their SWM practices 18 months after the former interviews with them. During that time, it is important to note that small hotels had no real excuse to landfill of the hotel waste after
the local authority had provided a recycling system for commercial businesses. However, surprisingly, the results showed no real change happening to SWM practices in non-GDES small hotels. The majority of the hoteliers interviewed were still disposing of their hotel waste into landfill despite the favourable attitudes and concerns towards recycling which they had exhibited in the initial interviews with them (see section 4.2.4.1). As one hotelier commented:

*Like, I told you last time. It is exactly the same. We put the waste in black bags and it goes in the big wheelie bin outside and they just take it over to landfill.*

(SH 1, 23 Rooms)

In addition, one of the hoteliers (SH2) was just continued with her illegal action in recycling via using the domestic waste recycling system. Although the public sector provided a legal route for commercial recycling which previously represented the most significant barrier for not recycling she did not want to pay for the waste recycling collection service and intended to covertly use the domestic system which was free of charge. Tzschentke *et al.* (2008) found that there is always a gap between the individual’s environmental concern and behaviour. It does not necessarily mean that showing a high degree of environmental consciousness would always translated into pro-environmental action. Unfortunately, hoteliers still strongly believed that they were only producing a small amount of waste in comparison to larger hotels, which might not have any impact on the environment. But, in fact, it does have a significant impact collectively (Kirk, 1995).
• **Waste prevention**

The findings highlighted that no change occurred to hoteliers’ attitudes towards preventing the waste at source through undertaking green purchasing practices. Most hoteliers did not think seriously about this option to reduce the amount of waste produced and even felt negatively about it. The cost of the product remained the most important consideration driving their purchasing decision but the environmental considerations lowered down in their list of priorities. As one hotelier said: “no, I have not thought to do it” (SH7). Hoteliers were still ignorant of the principles of green purchasing and also believed that the price of ‘green’ products was more expensive than ‘non-green’ items, which negatively influenced their intentions to prevent the waste at source. On the other hand, only one respondent still believed in prevention of the waste and interested in buying products with less packaging, longer lifespan or buying on need to reduce their waste and costs. She said: “I am not buying something that has a short date on it because if it does not get used you will throw it away, so you throw your money in the bin” (SH 2).

• **Waste minimisation**

Hoteliers’ attitudes and reactions towards waste minimisation which typified with positive or negative feelings had not been changed since the former interviews with them. Two hoteliers remained feeling positively about minimisation of hotel waste undertaking varied practices to reduce hotel waste (see section 4.2.2). They tried to deal with the waste in a sustainable
way after production, e.g. by recycling or composting. However, SH1 and SH7 still held unfavourable attitudes towards minimisation believing that it was an unattainable SWM option. This was due to the fact that they were ignorant of the varied techniques used for reducing hotel waste throughout all the life cycle of the product (input/output and processing stages). Both hoteliers denied the viability of the waste minimisation alternative reasoning that most of the hotel waste came out from customers, which they did not have any control over it. They also believed that small hotels could make a slight change to sustainability issues in contrast to bigger hotels. As one hotelier said:

*It is difficult; I do not see how we can! If somebody left you rashers of bacon what do I do with it, shove it down the toilet, how do I reduce that! I do not know if you take the right example talking to me, you should be talking to a big company, e.g. Holiday Inn or the Marriott where they can make a difference; we can make a slight minuscule difference.*

(SH 1, 23 Rooms)

- **Reuse**

Similarly, most small hotel owners/managers (3 out of 4) had not tried to reuse waste materials believing that ‘reuse’ was against hygiene regulations and would affect customer satisfaction. As one hotelier commented: “*no, we cannot reuse anything here, you are serving a customer*” (SH8). Even durable items (e.g. furniture), hoteliers considered disposing of them into landfill as one of the hoteliers argued that most charity organisations were over-saturated with these items and did not accept them anymore. It appeared that small hotel operators ignored reusing a wide range of potentially reusable items (i.e. plastic bags, refillable soap, paper, plastic
bottles, durables etc.) and still prioritised landfill as a primary SWM option. However, only one respondent (SH2) out of the four hoteliers interviewed had paid more attention to ‘reuse’ alternative and asserted that it saved cost.

- **Recycling**

In terms of recycling, it was found that most small hotel owners/managers (3 out of 4) (SH1, SH7 and SH8) did not put any effort and/or time to recycle the hotel waste even after the public sector had provided a recycling system for commercial businesses. Interestingly, the interviews discovered that these hoteliers had truly unfavourable attitudes towards recycling despite their positive attitudes which they had expressed in the earlier interviews with them (see section 4.2.4.1). In the former interviews, those hoteliers were classified among the group who were ‘positive but not taking action’ because they were positive towards recycling but their action was constrained as a result of the unavailability of the recycling service form the public sector. Now the recycling service was available to them from the public sector but they were unwilling to make recycling. As one hotelier said:

> To be honest there is not much to recycle, we are a small hotel; all of it is bits of food waste, newspaper, bottles and any waste from the rooms. It is not a big deal here; it is not going to change the world.

(SH 1, 23 Rooms)

The public sector had sent letters to all commercial businesses in the locality to inform them about their commercial recycling system and offer them the service. However, most small hotel owners/managers were unenthusiastic and were waiting for the council’s officers to knock their doors and ask them
to recycle which was unreasonable. Again, hoteliers pointed out some deplorable obstacles facing them in recycling, among these: lack of tools, lack of space, lack of time and cost issues. In addition, two hoteliers interviewed described recycling as an unsightly action which they did not want their customers to look at, for example setting waste storage bins in the car park. As one hotelier said: “no, we have not got time, space and cost. It is just looks untidy” (SH1). Clearly, these hoteliers were not interested in recycling.

Only one respondent (SH2) was still carrying on recycling part of the hotel waste streams although it was illegal through the domestic waste recycling system. This reflected that the public sector was still unable to control small businesses which used the household waste recycling system illegally. This hotel had no intention of following up the council’s legal route for commercial recycling believing that the charge of the waste collection was involved in the council tax, whereas in fact a commercial business had to pay for the service separately. In essence, small hotel owners/managers classified their operations as small family-run businesses producing domestic waste quantities. As such, they wanted to be treated the same as households and to get the service free of charge. One hotelier said:

All recyclables go in the green bag altogether and taken away by the council … I do not know how much it costs me because it is all included in the council tax each year.  

(SH 2, 15 Rooms)

Moreover, hoteliers remained unwilling to encourage staff participation in recycling with a slight incentive believing that this would contradict their
objectives in reducing operating costs and making money. One of the hoteliers mentioned that in order to recycle they would have to pay staff to segregate out the waste and this was considered to be an additional burden over the business. Similarly, most hoteliers declined customer participation in the hotel’s waste recycling programme. Only one hotelier (SH8) indicated that most customers would recycle if they were asked although this hotelier had no intention to recycle even after the public sector offered the service as they wished.

- **Composting**

Although composting represents the most favourable SWM option for disposing of organic waste. Most hoteliers (3 out of 4) got rid of food waste by just putting it into black bags and having it taken away to landfill. They were still unwilling to do in-house composting believing that it would create a rat problem and give off bad smells. As one hotelier said: “I would never do it. I would not want people parking outside and smell all this gone-off food” (SH1). Conversely, only one hotelier interviewed (SH8) was still carrying on making in-house composting and felt positively about it (see section 4.2.5).

### 7.3 Revised model for SWM in non-GDES small hotels after 18 months

As it can be seen in Figure 7.1, no change had happened to SWM practices in non-GDES small hotels after 18 months. Unexpectedly, landfill was still the dominant SWM option even after the local authority had provided a recycling system for commercial businesses.
Chapter seven: An evaluation and discussion of SWM practices across all cases studied

Figure 7.1: Revised model for SWM in non-GDES small hotels after 18 months

**Attitudes**

*Positive (ex.):*
- We do everything we can to cut down our waste because the more waste you get the more money you throw away

*Negative (ex.):*
- To be honest, there is not much to recycle, we are a small hotel
- I cannot do it because one lorry comes and takes the whole lot away
- If somebody left you rashers of bacon what do I do with it, shave it down the toilet, how do I reduce that?

**Subjective Norms**

*Positive (ex.):*
- I think everybody keen in helping the environment

*Negative (ex.):*
- It is going to cost me if staff segregate the waste
- I do not see customers will do it

**Perceived Behavioural Control**

**Facilitating factors:**
- Availability of recycling service

**Internal barriers:**
- Lack of time
- Lack of space
- Cost
- Producing small quantity of waste
- Smell

**External barriers:**
- Lack of composting facilities
- Lack of awareness
- Cheap landfill
- Manufacturers’ production and packaging strategies

**Behavioural intentions**

**SWM behaviours**
- Prevention (1/4)
- Minimisation (2/4)
- Reuse (1/4)
- Recycle (1/4)
- Compost (1/4)
- Landfill (4/4)
**Attitudes:**

The attitude was the key factor which influenced hoteliers’ SWM behavioural intentions. The initial interviews with the hoteliers revealed a group of hoteliers (3 out of 9) who were positive towards recycling but not taking action because of the absence of the recycling service. They reported that if they had the service they would recycle but, unfortunately, after they had the service from the public sector they were still landfilling of the hotel waste. Actually, these hoteliers held negative attitudes towards recycling as well as most of the other sustainable SWM options. This was illuminated in some of their attitudinal beliefs: ‘to be honest, there is not much to recycle, we are a small hotel’ (SH1); ‘I cannot do it because one lorry come and take the whole lot away’ (SH7); ‘if somebody left you rashers of bacon what do I do with it? shove it down the toilet!! How do I reduce that?’ (SH1).

**Subjective Norms:**

As described in the initial model (see section 4.7) the Subjective Norm component had the least effect on hoteliers’ SWM intentions. Most hoteliers did not perceive any social influence to recycle and even felt negatively about encouraging staff and customer participation in the hotel’s SWM programme. This was reflected in some of their normative beliefs: ‘it is going to cost me if staff segregate the waste’ (SH7); ‘I do not see customers will do it’ (SH2). However, only one hotelier indicated that customers would create a social motivation upon hoteliers to recycle. She commented “I think everybody keen in helping the environment” (SH8).
Perceived Behavioural Control (PBC):

Indeed, the PBC had a great effect on hoteliers’ behavioural intentions in terms that they could not recycle or compost without having the facility but it was proved that helping hoteliers to have the ability to perform the behaviour was not enough to influence their intentions and lead them to do the behaviour. To demonstrate, hoteliers had the control and the ability to perform the recycling behaviour since the local authority provided a recycling system for commercial businesses, which previously was considered the most significant factor inhibiting their recycling behaviour. However, most hoteliers still landfill of the hotel waste because of their negative attitudes towards recycling. They restated some unacceptable obstacles for not making recycling, e.g. lack of time, lack of space and cost issues. Moreover, there was still a range of external obstacles which acted as barriers for implementing sustainable SWM options, e.g. lack of composting facilities, lack of awareness, cheap landfill and manufacturers’ production strategies.

Behavioural intentions and SWM behaviour

It was clear that providing an appropriate support to help hoteliers take control or have the ability to perform the behaviour was not sufficient to influence and/or motivate hoteliers’ behavioural intentions to perform the behaviour. For instance, the recycling service had been made available to them from the public sector but most hoteliers still prioritised landfill as a disposal route. Instead, hoteliers’ behavioural intentions had largely influenced by their attitudes towards the behaviour which were negatively
characterised. This reflected that besides providing facilitating factors to the barriers identified through the PBC component (e.g. recycling and composting facilities), there should be some sort of powerful motivations (e.g. legislation and incentives) to drive those hoteliers who were just not concerned and influence their attitudes to implement the behaviours (discussed in detail in section 7.6).

7.4 Cross-case analysis and discussion

This part combines, analyses and discusses SWM issues obtained from the two case studies undertaken in this research involving non-GDES small hotels in a Welsh local authority and small hotels committed to GDES in Wales. It also links with the results obtained from interviewing the key executives of the public and private waste sector in the Welsh local authority. This has led to the development of a best practice model for the public sector to encourage better SWM practices in small hotels (see section 7.5). This study has revealed significant variations between GDES and non-GDES small hotels in respect of SWM practices (as explained in detail in the following sections).

7.4.1 Motivations for small hotels to consider SWM

Most SMEs lack the internal motivation to engage in environmental practices and thus they are more reactive than proactive. Commercial pressures can be used to create a win – win scenario (Clark, 2000). Friedman and Miles (2001:200) referred to some of the commercial motivations associated with
effective waste and resource management include: “cost savings; protection against future cost increases; market opportunities for environmental goods and services; enhanced image; improved employee morale; the ability to meet insurer demands or contract specifications”. In addition to these commercial pressures, Ruiz (2001) mentioned that the corporate ethical responsibilities along with legislation are significant pressures to hearten businesses to implement sustainable SWM practices.

The findings obtained supported previous research (Clark, 2000; Friedman and Miles, 2001; Ruiz, 2001) and identified seven groups of motivations which could be used to influence/change the behaviour of small hotel operators and drive them to tackle their environmental responsibility with regards to SWM. These groups include: providing recycling and composting facilities; providing awareness and education; enhancing the economic motivation; encouraging the social motivation; boosting the marketing motivation; enacting legislative pressure; building networks between small hotels (see Figure 7.2). Analysis using TPB indicates that some of these groups are essential to help small hotel operators to have control and ability to perform the behaviour (i.e. providing recycling and composting facilities, providing awareness and education) while the other groups are important to incentivize and/or pressurize the behaviour.
Figure 7.2: Motivations for small hotels to consider SWM

1. Providing recycling and composting facilities

Dewhurst and Thomas (2003) mentioned that most small tourism firms struggle to manage their solid waste sustainably as the facilities and/or the services required to support them are fragmented or unavailable. In this respect, a great consensus had been registered between the participants of GDES and non-GDES small hotels arguing that they did not have the facility to recycle or compost their hotel waste. Indeed, lack of the facilities was considered a significant obstacle which influenced many hoteliers’ behavioural intentions and inhibited them to perform the recycling and composting behaviours. As one hotelier said: “we do not have the facility here to do it” (SH7). It was apparent that most local authorities in Wales, along with the majority of private sector’s waste carriers, particularly small waste haulers, were still unable to provide the recycling and composting services and also the tools necessary to assist commercial businesses
recycling and composting their waste. Indeed, the waste carrier, either the public or the private sector, should have the capability to work with businesses regarding all the waste alternatives of the waste management hierarchy.

2. Providing awareness and education

Both the respondents of GDES and non-GDES small hotels supported the findings of previous studies (Hooper et al., 2000; Simpson et al., 2004) that providing environmental awareness was essential to support small hotel operators managing their solid waste in a sustainable way. Small businesses often need assistance and guidance to get started and adopt environmentally-friendly practices and if this is lacking it can obstruct their eco-behaviour. Rutherford et al. (2000) indicated that the government should encourage businesses go down this road by providing awareness. Revell and Rutherford (2003) argued that there are still very few governmental environmental programmes in the UK which target small businesses and provide information and advice to this sector.

It was apparent that most hoteliers, particularly those of non-GDES small hotels lacked the awareness to consider sustainable SWM alternatives (e.g. prevention, minimisation and reuse). Also, despite being aware to a large extent and implemented most of the options listed in the waste management hierarchy, many GDES hoteliers were looking forward to receiving more support and awareness to enhance their SWM behaviours. This implies that
providing awareness and education is fundamental for better SWM practices in small hotels. Two hoteliers stated:

Yeah, getting the message across, that will be very important … offer training to teach people how to do it, what is the best way to do it and where they can do it. I do not think there is enough education to make people aware of waste management.

(SH 7, 18 Rooms)

Absolutely, I think the way to make people do things for long-term is to encourage them by informing them; by educating them.

(SH2/GDES, 8 Rooms)

One of the hoteliers interestingly asserted that people’s behaviour should be managed from childhood by introducing SWM as a part of curriculum for children to learn in elementary and secondary schools and providing bins where children could segregate and recycle their waste. The findings supported also Trung and Kumar (2005) stressing the role of the local authority in providing free environmental training courses and regular meetings with hotel owners/managers to raise their awareness and knowledge regarding cost-effective ways of enhancing environmental performance such as SWM and the importance of doing it. In essence, contracted waste carriers, either the local authority or the private waste sector, can play a significant role in regards to the awareness and education of small hotel operators by providing a site visit to audit customer’s waste streams and identify the best options for managing hotel waste.
3. Economic motivation

Besides facilitating the external barriers facing hoteliers to manage their solid waste appropriately (e.g. lack of the facilities and lack of awareness) which were demonstrated through the PBC variable in TPB, it is necessary to instigate hoteliers’ SWM behaviours. Both GDES and non-GDES participants agreed that the local government should provide an effective recycling system offering the service much cheaper than landfill to encourage hoteliers to reduce and recycle their waste. This result supported previous research (Stabler and Goodall, 1997; Dewhurst and Thomas, 2003) which indicated that the drive for waste management in small businesses is more related to achieving cost savings. They will largely do the action if it is of economic benefits to them. The House of Lords (2008) stressed on the need both to incentivise and educate businesses to change their SWM behaviours and encourage the implementation of more sustainable practices. As one hotelier commented: “they have to keep the cost down. I think this an effective incentive to do the work” (SH1).

At the time of conducting this research, the pricing structures of SWM offered by public and private waste carriers had provided very little economic advantage to commercial businesses. For example, small hotel owners/managers would not make recycling to save just 13p per bag. In addition the landfill tax in the UK was still much cheaper in comparison to other European counterparts. This was an issue that had actually hampered the implementation of sustainable SWM in commercial businesses. However,
Simpson et al. (2004) asserted that the UK government was looking at increasing the landfill tax by 4% yearly and this should be a real pressure to make small businesses proactive and improve their SWM practices. From another perspective, although reducing and/or controlling hotel waste should act as an incentive for hoteliers to reduce waste disposal costs the existing methods used by public and private sector’s waste carriers for charging businesses on waste collection were not supportive to reach this aim. They offered a fixed charge either by the bin or by the bag and remained unable to charge businesses by weight which would be an authentic incentive for most hoteliers to cut down the amount of waste produced to save costs.

4. Marketing motivation

The marketing forces play an increasingly significant role in influencing business’s decision to undertake environmental practices (Chen, 2005). Affirmatively, the majority of small hotels committed to GDES had originally achieved GDES to market their operations and to attract those customers who were interested in staying in a green hotel. This finding supported Dewhurst and Thomas (2003) and Simpson et al. (2004) arguing that most small businesses perceived that adopting environmental management practices could create a competitive advantage and potential new market opportunities. However, fewer hoteliers have actually gained a competitive advantage because of the environmental issues. The environmental attribute was not a consideration for most customer but hoteliers anticipated that in
the next few years this situation would change and customers would prioritise eco-hotels. One hotelier said:

\textit{Absolutely, the eco-tourism is a niche market at the moment but it is becoming more popular. If we looked at the amount of press that we got last year because we were the first accredited eco-hotels in Wales then you would realise that it was a force coming. I think within six to ten years eco-tourism is going to be a lot of competition.}

(SH1/GDES, 12 Rooms)

Practically, many small hotels committed to GDES had found a difficulty in promoting their hotels as a part of GDES because the majority of the public were still unaware of the standard. Therefore, Arena Network intended to help GDES small hotels to get benefit from the standard on the marketing basis and use it as a marketing tool. They planned to promote GDES more widely to the general public and also make it as an option within online booking systems. Interestingly, one of the non-GDES hoteliers suggested that the local authority should help small hotels which managed their solid waste effectively (e.g. recycling) to get a competitive advantage over competitors by raising their environmental profile. For example, organizing and promoting an environmental award to compensate the best eco-friendly hotels in the locality. Bates and Phillips (1998) reported that public awareness of environmental issues was going to increase and customers would choose companies with good environmental profiles.

5. **Social motivation**

Kirk (1996) identified social responsibility as one of the main driving forces which encourages organisations to change their behaviours and adopt
sustainable practices. The findings of this study supported Kirk (1996) since the social effect was mentioned by many small hotel owners/managers, particularly GDES hoteliers, as a significant factor to influence them to undertake sustainable SWM practices. Indeed, most GDES hoteliers were environmentally-conscious and keen about the environment. They achieved GDES to meet their social responsibility and protect the environment from their negative impacts which associated with their hotel activities (e.g. waste disposal). Likewise, one of the main reasons which encouraged some of non-GDES hoteliers to recycle and/or compost their hotel waste was their conscience of what needed to be done to protect the environment and to fulfil their social responsibility. One hotelier stated:

Absolutely, recycling is not about what the individual will get out of it. It is actually about society. If people realize that we cause acid rain that burns trees down, the toxic oxygen has made that change to the weather system and causes droughts in Africa and people die, perhaps they may take it a bit more seriously but the message is not getting across. Again it is more education needed. I mean I know what is going on. I know how importance to do it but there is a large number of people don’t.  

(SH 2, 15 Rooms)

However, Tilley (2000) highlighted a low level of environmental ethics among SMEs owners/managers who tended to sustain economic interests over environmental or social considerations. This was actually the case with the majority of non-GDES participants who were still highly prioritizing the economic benefits over their ethical responsibility. In this respect, more awareness was needed and the key role should be played by the public sector to make small hotel operators aware of their social responsibility with regards to SWM and the importance of managing their solid waste
effectively. One of the local authority’s waste management officers indicated that small hotel operators should value the environmental resource and endeavour to protect it from the harmful effects resulted from their hotel operations as the environment represented the most significant part of the tourism industry.

6. Legislative pressure

This study supported Rutherfoord and Spence (1998) and Rutherfoord et al. (2000) arguing that legislation may be the most effective tool to reach small businesses and force better environmental practices. The UK’s reliance on the voluntary approach will not be successful to achieve significant environmental improvement in this sector. The findings reported a general concurrence between the respondents of GDES and non-GDES small hotels regarding legislative pressure. Hoteliers agreed that legislation would be an effective way to drive small hotels to implement sustainable SWM practices. However, the government should not consider legislation until they make recycling a viable opportunity and provide an appropriate support to encourage businesses to come along. This is best explained in the following statement:

> Our hope that there should not be legislation unless at least giving us the option or guidance and tell us what we could do. They have to assist by giving us a good quality recycling collection system but just putting legislation and say you have to reduce your waste by 20% it is not workable. A lot of businesses would not just last the pace.

(SH 3, 28 Rooms)
Evidently, the findings obtained from re-interviewing some non-GDES hoteliers 18 months after the initial interviews with them and after they had the recycling service from the public sector strongly supported the presence of a legislative pressure. This could be explained by the fact that the recycling service was made available to hoteliers, which previously represented the most significant barrier to their behaviour, but they continued in disposing of their waste into landfill and had no intentions to recycle. Therefore, legislation would be a successful tool particularly for those hoteliers who were just not concerned and wanted to dispose of their waste into landfill. If there was legislation in place small hotel operators would have to respond otherwise they would be penalised. Also, most local authority’s waste management officers perceived legislation as an effective instrument to force small hotels to recycle.

7. Networking small hotels

Networks proved to be one of the most successful ways to engage small businesses in undertaking environmentally-friendly practices. The findings revealed that the majority of GDES hoteliers (7 out of 9) and many non-GDES hoteliers (4 out of 9) felt positively about networking small hotels to exchange ideas and information on SWM issues and learn from successful models. Hoteliers of GDES asserted that it was important particularly for geographically-closer small hotels to work together as a team. This result agreed with previous research (Biondi et al., 1998; Fanshawe, 2000; Friedman and Miles, 2001; Pedersen, 2000; Kernel, 2005) which showed that
collaboration and networks between small businesses or with other stakeholders, such as local authorities and support agencies, is beneficial to engaging small businesses in environmental activities and sharing experiences and knowledge on sustainability actions. This is best explained in the following excerpt:

Absolutely, there is a competitive thing and it is a bit old but people think oh another business is a threat to them and their businesses but you have to look and think outside that box. You have to think I am actually going to learn. I will benefit from talking to other businesses and see what they have achieved. Sometimes when you work in a small business you do not see the wood for the trees and it is nice to get out of that scenario to meet with other people and discuss things and suddenly realise the obvious is there in front of you but you have never seen it and I think networking is very interesting.

(SH2/GDES, 8 Rooms)

The local authority’s waste management officers had welcomed the initiative of networking small hotels to localize waste separation across streets and enhance more communications between small hotels. Officers confirmed that they would enthusiastically look at this idea when developing their future strategies. In essence, hoteliers have to stop thinking about the competition factor and value such networks to interact with other business operators through a regular meeting. They have to believe that they are going to benefit from other’s experiences and also get an external recognition.

7.4.2 Best practice for SWM in small hotels

The findings revealed seven main steps of best practice for SWM in small hotels, including: commitment to environmental responsibility; undertake a
waste audit; work with the contracted waste carrier; implement SWM programme considering the waste hierarchy; overcome the challenges; encourage staff participation in the hotel’s SWM programme; involve customers in the hotel’s SWM programme (see Figure 7.3). Each of these steps will be discussed in details in the following sub-sections, linking with the attitudes and views of GDES and non-GDES hoteliers, together with the local authority and private sector’s participants.

Figure 7.3: Best practice for SWM in small hotels
7.4.2.1 Commitment to the environmental responsibility

A higher level of management commitment is essential for developing an effective SWM programme (IHEI, 1993; Cummings, 1997). A clear distinction had been made between GDES and non-GDES small hotels regarding hoteliers' commitment to the environmental responsibility. On the side of non-GDES small hotels, most hoteliers interviewed did not pay any attention to their environmental responsibility. They did not see the need to formulate an environmental policy. They were too busy with other business’s objectives such as increasing profitability rather than carrying out their environmental duties and implementing practices aimed to protect the environment. Tzschentke et al. (2008) stressed on the importance of making small hospitality firm operators aware that going green does not require a large investment or a major changes in their operational approaches but it can develop in accordance with business’s objectives and priorities.

On the other side, the majority of small hotels committed to GDES had demonstrated a strong commitment to their environmental responsibility which was articulated in three different actions, including: developing an environmental policy, undertaking an environmental audit and setting an improvement plan. Kirk (1996) similarly indicated that developing an environmental policy was the first step for any organisation which wants to introduce actions to protect the environment and at the same time the policy was an indication of the firm’s commitment to environmental issues. The environmental responsibility of GDES hoteliers was executed as a significant
part of the owner/manager duties to ensure that all staff, whatever department they were, undertook eco-friendly practices in the daily operations.

7.4.2.2 Undertake a waste audit

The findings revealed that undertaking a waste audit was not a common action in non-GDES small hotels in comparison to small hotels committed to GDES. As one non-GDES hotelier said: “as long as the waste goes; as long as it is not in the hotel. I do not think about it” (SH5). However, almost all GDES small hotels conducted a comprehensive environmental audit with the support of Arena Network when they first accredited with GDES. This result agreed with Biondi et al. (2000) who declared that most SMEs accredited with a green standard regularly conduct a full environmental audit to assess the effectiveness of their EMS and identify environmental improvement opportunities. SWM was then a significant component of the auditing process undertaken by GDES small hotels to identify sources and quantities of solid waste streams produced. The outcome of the auditing process was registered and updated regularly to involve any changes happened to the operation. This result supported Kirk (1996) and Tang (2004) who indicated that the auditing process is an essential step to move towards better SWM practices.

In essence, hoteliers of GDES small hotels recognised the importance of the auditing process and conceded that their hotel operations had an impact on
the environment, particularly landfilling of waste. This recognition was actually very important step which led many GDES hoteliers to implement certain eco-practices and continuously work towards reducing their environmental impact. As part of their commitment to GDES, hoteliers maintain a file for all environmental records (i.e. waste disposal charts, WTN, environmental policy etc). This represented the key which had enabled them to continuously monitor their hotel’s environmental performance. However, this was not the case with hoteliers of non-GDES small hotels who did not maintain any records for waste generation and disposal routes arguing that it was not necessary for a small hotel business to consider this issue. While, in fact, it was very important to help small hotel operators tracking solid waste generation and working towards the improvement.

Practically, a number of GDES small hotels had actually measured the effectiveness of managing their hotel waste through the development of SWM charts showing types and quantities of waste streams produced, along with disposal routes. One of the hoteliers was looking at developing an input/output process analysis to manage hotel waste streams effectively, e.g. food waste. Formerly, Dahab and Keefer (1992) developed an input/output system analysis which could be used to help small hotels to trace raw materials throughout the various stages of processing and identify sources of waste.
7.4.2.3 Work with the contracted waste carrier

It is crucial for small hotel operators to work with the contracted waste carrier towards the implementation of all the sustainable options of the waste management hierarchy. However, for GDES and non-GDES hoteliers, this type of collaboration was confined to recycling and landfilling of hotel waste. Hoteliers had never asked the waste carrier to assist them regarding waste prevention and minimisation alternatives. From another perspective, it was apparent that the public sector as well as the majority of private sector’s waste carriers did not have the capability and/or the resources to work with small hotels regarding waste prevention/minimisation and composting alternatives (see section 7.4.2.4). Formerly, BRASS (2003) reported that the existing infrastructure of SWM in the UK is not sufficient to support businesses in implementing higher options of the waste hierarchy.

The study had identified a general congruence between GDES and non-GDES small hotels using local authority’s waste carrier for disposing hotel waste. Cost and convenience were the most significant criteria used by hoteliers for selecting a waste carrier. As one hotelier commented: “the best price wins really” (SH8/GDES). For many hoteliers, the waste service provided by the local authority was the cheapest option as they covertly used the domestic waste recycling system illegally which was free of charge. On the other hand, a few GDES hoteliers had contracted with private sector’s waste carriers and argued that the private sector provided more comprehensive service than the public sector.
The findings revealed four main tools to drive public and private waste sectors to work more closely with commercial businesses such as small hotels towards the implementation of sustainable SWM options, including: increasing the landfill tax, enacting legislation for recycling, imposing recycling/composting targets and customer demanding of the service. In fact, if these tools were incorporated properly within the UK and Welsh waste strategy, public and private sector’s waste carriers would be obliged to offer the service (e.g. recycling and composting) in order to stay in the market and avoid being penalised. However, the government should not consider such drivers unless they provide an appropriate support and infrastructure to make all the options of the waste management hierarchy as viable opportunity as possible to public and private sector alike (see Figure 6.7). Morris et al. (2000) similarly indicated that the government’s dependency on landfill tax alone would not lead businesses or waste carriers to implement sustainable alternatives (e.g. recycling). It was essential to make these options as cost effective and accessible as landfill.

7.4.2.4 Implement SWM programme considering the waste hierarchy

7.4.2.4.1 Prevention

The UK government has recognised now the necessity of driving the prevention of the waste and has placed the key roles onto the public and private sectors alike to reach this desired goal (The House of Lords, 2008). In comparison to other developed countries, Chen (2005:930) indicated that “Taiwan government is increasingly using green purchasing as an effective instrument to control solid waste and to mitigate the environmental impacts of
consumption … Most developed countries such as Sweden, Japan, Germany and the Netherlands have positively considered green purchasing as a legal regulation”. In Japan, the government had initially developed a minimum environmental standard for a wide range of products and then made it compulsory by imposing fines for those manufacturers who did not comply (The House of Lords, 2008).

The study had identified a disparity between GDES and non-GDES small hotels in regards to hoteliers’ attitudes towards preventing hotel waste. From the standpoint of non-GDES small hotels, most hoteliers interviewed felt that prevention was not an accessible and/or viable option to implement. In fact, they were ignorant of green purchasing policies. Hoteliers argued that they had no control over manufacturers’ use of packaging. One of the hoteliers also highlighted two critical issues associated with buying recycled products, including: higher prices and low quality. Indeed, all these aspects had contributed to the formation of the negative attitudes by most non-GDES hoteliers towards prevention and made them perceiving a difficulty to perform the behaviour. In practice, only two hoteliers had actually considered the environmental attributes in their purchasing decisions, e.g. buying in bulk or buying items loose. One hotelier commented:

> Of course, we are a small business. We will go for the best quality at the lowest price. So, I do not think too much is taken into account whether it is environmentally-friendly or not.

(SH 7, 18 Rooms)
However, most GDES hoteliers reacted positively towards preventing hotel waste at source. This was because of their beliefs that prevention would help their operations in both the economic and environmental senses. They developed a green purchasing policy sustaining buying from local sources and on demand. They adopted a variety of measures to control and reduce packaging waste at source. Moreover, they took into account buying environmentally-friendly products. This finding agreed with previous research (Friedman and Miles, 2001; Dewhurst and Thomas, 2003) which similarly found successful cases of small businesses were very keen to adopt purchasing practices consistent with the principles of sustainability. One hotelier said:

_We are trying to use as many local suppliers as we can. I cannot think of any one that comes to us from very far._

(SH7/GDES, 19 Rooms)

The findings implied that the UK government should control and regulate manufacturer’s usage of wrapping materials in order to make prevention a viable opportunity for buyers. The government should also encourage producers to consider recycled raw materials for manufacturing their products and offer them at a normal price rate. The Waste and Resources Action Programme (WRAP) supported the introduction of a variable Value Added Tax (VAT), with a lower VAT for products that were more eco-friendly (The House of Lords, 2008). This is actually a good strategy to influence manufacturers to produce sustainable products as it will be more cost-effective to them.
7.4.2.4.2 Minimisation

Similarly, the findings had showed incongruity between hoteliers’ attitudes of GDES and non-GDES small hotels towards minimisation of hotel waste. From the perspective of non-GDES small hotels, despite some hoteliers valued minimisation as a significant SWM option for managing hotel waste, the majority felt that there was no way to control or minimise hotel waste. They believed that it was very difficult to control, for instance food and packaging waste streams. Hoteliers were unaware of the varied techniques which could be used for reducing hotel waste throughout the life cycle of the product. Without a doubt, lack of awareness was an issue which had significantly influenced their attitudes and behavioural intentions and turned them into negative. One hotelier commented:

*How can we possibly reduce the waste? By not buying so much! We do not normally look for waste at all but if you buy anything new these days it is always packed in about three different containers … it is not possible to reduce food waste. If they do not eat it what do we do with it. We do not know how much they are going to eat anyway. I mean sometimes we throw sausages away which have nothing wrong with them. When we put it on a plate for the chaps there was too much for them and they could not eat it.*

(SH 6, 10 Rooms)

However, waste minimisation was an option which was prioritised by all small hotels committed to GDES believing that it was an effective way to reduce waste disposal costs. Hoteliers were actively working towards minimising hotel waste (e.g. food, cardboard and paper). They adopted numerous practices to cut down the waste before it was actually generated, e.g. changing food production techniques and encouraging the use of electronic
mail in hotel’s communications. This finding accorded with the evidence provided by Dewhurst and Thomas (2003) indicated that many small tourism firms in the UK had tried hardly to reduce their waste. As one hotelier mentioned:

_We always think to reduce the quantities of solid waste generated in the kitchen and everything else. Obviously, it goes to benefit our economic side because the less your waste the less money you will pay._

(SH8/GDES, 21 Rooms)

It was noted that hoteliers did not receive any support form the contracted waste carrier (public and private waste sector) regarding waste prevention/minimisation. Surprisingly, no action was taken by the public sector to help businesses to prevent and/or reduce their waste. Their role is only to inform businesses, if asked, to contact other specific organisations to help them with these targets. The council considered their waste prevention/minimisation targets set by WAG as secondary objectives while their major concerns stopped at recycling commercial waste. One of the officers said:

_We direct businesses to other partner organisations like Arena Network to support them in environmental management. There is no much as a local authority that we can do because we do not have the resources._

(Officer 2)

Similarly, the majority of private waste companies did not have the resources and/or the competencies to deal with businesses in regards to waste prevention/minimisation objectives. Even they believed that helping customers to reduce their waste opposed with their objectives in increasing profitability. In essence, there were some larger waste companies who
interestingly cooperated with their customers and helped them in respect of waste minimisation but they confined their services to larger waste producers (industrial sector) which did not include small hotels.

7.4.2.4.3 Reuse

A great dissonance had been registered also between hoteliers’ attitudes of GDES and non-GDES small hotels regarding reusing hotel waste. From the angle of non-GDES small hotels, although some hoteliers felt positively about reuse arguing that it could be used effectively for disposing of durable waste, the majority denied the effectiveness of ‘reuse’ as a significant SWM option for handling waste materials. They did not actually explore the different avenues which could be used for reusing hotel waste in order to prevent a wide range of materials from entering the waste stream. As one hotelier commented:

*It is quite difficult to reuse anything and to what extent you want to reuse it. I would say no, you could not reuse anything. For example, we have two or three milk jugs everyday, of course you can use one may be to water the plants or something, that’s all but we cannot use them everyday*  
(SH 7, 18 Rooms)

Conversely, on the side of GDES small hotels, all hoteliers interviewed responded positively towards reusing hotel waste. They considered reusing a wide range of waste materials in-house or giving them to staff as a sort of encouragement, e.g. partially-used soap, shampoo and other bedroom toiletries. They also reused durable waste (e.g. furniture) which was produced on a longer-term basis by donating it to charities or selling. As
some hoteliers hold an annual car boot sale within their hotel grounds which gave them a great opportunity to sell their old furniture. This result supported the empirical evidence by Horobin and Long (1996) and Trung and Kumar (2005) which showed that many hotels now perceive ‘reuse’ as an important SWM option and tend to implement various practices to reuse hotel waste. One hotelier explained:

_We do what we possibly can. When photocopying we use both sides of the actual paper … We do not throw food away, it is recycled in some way. We do send plastic bags down to stores. There may be partly used soap, shampoo etc. we do not throw them away we actually hold on them and make use of them again._

(SH3/GDES, 23 Rooms)

### 7.4.2.4.4 Recycling

The analysis had noted a great disparity between hoteliers’ attitudes of GDES and non-GDES small hotels towards recycling. On one hand, most non-GDES hoteliers held negative attitudes towards recycling placing the onus entirely over the local authority to segregate and recycle the waste. Although the public sector had provided the recycling service to all commercial businesses, hoteliers continued to prioritise landfilleding despite their attitudes which they exhibited initially. Indeed, most hoteliers had no intentions to proceed further and overcome the personal and internal constraints of recycling (e.g. time, space etc.). Virtually, only three hoteliers considered recycling some of their hotel waste streams, with two of them recycled illegally through using the domestic recycling system.
In comparison, most GDES hoteliers were very passionate about recycling to reduce landfill waste and also to reduce associated costs. The majority of hoteliers had actually recycled but illegally through using household waste recycling system, the same as some hoteliers of non-GDES small hotels. Despite being aware of their illegal action, hoteliers maintained their recycling behaviour ignoring their legal obligations and destroying the quality of GDES believing that recycling was more sustainable to the environment than landfilling. However, a number of hoteliers had explored legal routes to recycle some of their hotel waste streams using private contractors. They wished to recycle everything but they still could not find a waste carrier to help them with recycling. Although hoteliers were facing a number of objective constraints to recycle, they persevered unlike the respondents of non-GDES small hotels.

On the side of the public and private sector’s waste carriers, the findings revealed that the public and many private sector waste carriers in the Welsh local authority (being the main focus of this study) could assist small hotels in respect of recycling. Firstly, the local authority had provided a mixed recycling bag scheme for commercial businesses, which was fantastically appropriate for small hotels to recycle their waste. However, small hotels were still sustaining a landfilling behaviour. Despite facing obstacles regarding the provision of commercial business waste recycling scheme, the council intended to offer the service to all businesses. Secondly, many private sector waste carriers were keen to work with their customers on the
recycling issue as it would be more profitable to their businesses than landfilling with the rising of the landfill tax. However, the private sector continued to face difficulties to provide a comprehensive recycling service and overall small haulers were still landfilling.

7.4.2.4.5 Composting

The study had identified a consensus between the attitudes of GDES and non-GDES hoteliers towards in-house composting. A few hoteliers of both GDES and non-GDES small hotels considered in-house composting and felt positively about it. This finding supported Schaub and Leonard (1996) who indicated that composting was not largely used as a SWM option in the food service industry for disposing of organic waste. In fact, these hoteliers invested in composting without a real support from the local authority or even private sector’s waste carriers and described it as an effortless and odourless process taking very little time. They considered using the output as a fertilizer to their garden.

On the other hand, the majority of GDES and non-GDES small hotel operators had not explored in-house composting and felt negatively about it. They believed that doing in-house composting would influence customer comfort and enjoyment in their hotels due to odour and vermin. Likewise, some hoteliers would not be able to make use of the output soil as they did not have gardens in their hotels. However, some GDES hoteliers were very willing to compost through a commercial composting service but they
perceived a difficulty as the public and private sectors alike were still unable to provide appropriate support for composting.

On the basis of public and private waste sectors, a clear concurrence had been reported between both sectors in regards to their inability to work with small hotels regarding composting. The council did not have a facility to compost food waste. Yet, they provided a very modest service to enhance their in-house composting programme and thus they were in a real problem to reach their composting targets set by WAG. Similarly, all private sector waste carriers did not have facilities to compost and even had no intentions to invest in building up such facilities. They argued that composting was not a profitable business plus it required a technical and specialized expertise.

7.4.2.4.6 Landfill

A clear distinction had been revealed between GDES and non-GDES small hotels in terms of relying on landfill. Many hoteliers of non-GDES small hotels were largely depending on landfill as a primary SWM option for disposing of hotel waste. They simply sealed the waste into black bags and then had them collected by a waste contractor to landfill. As one hotelier mentioned: “all rubbish is put into black bags. We do not recycle or anything at the moment” (SH5). Conversely, most GDES hoteliers had made effective use of the other sustainable SWM alternatives (e.g. prevention, minimisation, reuse and recycling) before considering landfill. In essence, landfill was undertaken by many GDES hoteliers as the main waste disposal option but
only for the food waste stream. This could be explained by the fact that hoteliers did not have the opportunity to compost or even feed food waste to animals because it was banned by legislation.

From the standpoint of the public and private sector’s waste carriers, the public sector had more commitment to divert the waste away from landfill to reach their recycling and composting targets. They developed a recycling system for commercial businesses and planned to provide the service to any business that wanted to recycle. They currently had a problem with their landfill site which had almost reached its full capacity and they had no replacement. Similarly, many private sector’s waste carriers discouraged landfill and sustained recycling. It was noted that some larger waste companies had provided total SWM solutions to handle commercial waste. They approached the waste management hierarchy in its strongest sense. However, smaller waste carriers were still landfilling.

7.4.2.5 Government support take-back schemes

The study had reported a clear disparity between the attitudes of GDES and non-GDES hoteliers towards the participation in the current and potential PTB systems in the UK. From the stance of non-GDES small hotels, most hoteliers interviewed were not willing to participate in any PTB system and felt negatively about the idea. They believed that following this route would be associated with wastage of non-renewable resources, (e.g. petrol) plus the time and cost issues incurred. In addition, hoteliers asserted that they had no space to store packaging. As one hotelier said:
I think you would find most of the people throw it in the lane; people would not like to take a step back. We are not going to double the price of the orange juice. There is a cost involved because you are going to pay for the car park and you have got to drive twice and the petrol. So, all we are going to save in the cardboard will increase the fuel consumption.

(SH 8, 6 Rooms)

On the other side, most GDES small hotels felt positively about PTB system and argued that it was an effective route to reduce waste generation and thus reducing disposal costs. They were enthusiastically eager to participate in any potential national PTB system as the current system is still limited and even excludes businesses end users from participating, e.g. Packaging Regulations 1997 (Fernie and Hart, 2001). Interestingly, four hoteliers out of the nine had set up their own PTB system and agreed with their suppliers to take-back packaging, e.g. cardboard and plastic crates. The principle of take-back is a conditional factor for these hoteliers when contracting a supplier. As one hotelier mentioned: “most of our cardboard I send back to our suppliers so they can reuse it again” (SH2/GDES).

7.4.2.6 Comply with the legislative requirements

A major concurrence had been identified between GDES and non-GDES small hotels in terms of disposing their waste illegally and breaking the legislation. On one hand, the majority of non-GDES hoteliers were not aware of their legal obligations in respect of disposing their hotel waste. As a result, some hoteliers disposed of their recyclable or landfill waste illegally through covertly using the domestic waste system in either the weekly collection or using HWRC and recycling banks. Many hoteliers still had a
misunderstanding about the waste disposal charge believing that it was part of the rate which small hotels were paying to the council yearly. On the other hand, despite knowing their legal obligations and totally confident that they were breaking the law, most hoteliers of GDES small hotels similarly disposed of their waste illegally through the domestic recycling system. It seemed that most local authorities in Wales were unable to control illegal dumping, particularly by small businesses.

This result supported previous research (Hillary, 1995; Gerstenfeld and Roberts, 2000) which attributed the low levels of compliance to environmental regulations amongst small businesses to either lack of awareness with the legislation or inability of small businesses to recognize how far the regulations might affect them. Moreover, Petts et al. (1999) reported that most SMEs perceive that complying with legislation is costly and will affect business’s profitability.

7.4.2.7 Overcome the challenges

A range of common behavioural barriers had been mentioned by hoteliers of GDES and non-GDES small hotels facing them in recycling, including: unavailability of the recycling service, lack of awareness, staff lethargy, separation of the waste, lack of space, time and cost issues. This result accorded with previous research (Maclaren and Yu, 1997; Fanshawe, 2000, Dewhurst and Thomas 2003; Revell and Rutherford, 2003) which indicated
that small businesses always face a lot of intrinsic obstacles hindering them to engage in more proactive environmental behaviour.

However, the findings revealed that most hoteliers of GDES small hotels overcame many of the aforementioned challenges and performed the recycling behaviour unlike the respondents of non-GDES small hotels who were just not interested in recycling, despite the availability of the service. Indeed, unavailability of the recycling and composting services together with the lack of awareness had constituted the most significant barriers facing small hotel operators not only to recycle/compost but also to target all the options of the waste management hierarchy. This is best explained in the following statement:

*Very little support at the local government level. As I said I am not sure where to get the information in order to recycle and what to do with the waste because it has to be collected, of course that is the difficulty of recycling.*

(SH 7, 18 Rooms)

### 7.4.2.8 Encourage staff participation in the hotel’s SWM programme

An obvious divergence had occurred between the attitudes of GDES and non-GDES small hotel operators towards encouraging staff participation in the hotel’s SWM programme. On the first hand, most non-GDES hoteliers did not perceive any social influence from staff to manage their hotel waste effectively (TPB) arguing that it was a business decision more than staff attitude. They held negative attitudes towards encouraging staff participation in the hotel’s SWM programme believing that staff must obey their bosses.
From this point of view, if the manager asked staff to recycle then they would have to do it otherwise they would be disciplined. However, Friedman and Miles (2001) reported that businesses should adopt a policy of attraction rather than enforcement to encourage staff participation in the hotel’s SWM programme.

On the other side, most GDES hoteliers experienced a social influence by staff but to a lesser degree as they agreed with non-GDES hoteliers that SWM was primarily a decision made by business owner/manager. In practice, hoteliers argued that staff held favourable attitudes towards SWM practices undertaken in their operations. They had considered different means to motivate staff to carry out their duties properly in the hotel’s SWM programme. They made staff aware of the hotel’s environmental policy and discussed with them the environmental targets (e.g. SWM) which the hotel sought to achieve. They integrated SWM as a part of the induction training programme given to any new staff to educate and train them on how to handle hotel waste sustainably. Moreover, some hoteliers considered motivating staff by giving them old durable items when renovating their hotels or by giving them partially-used guest room toiletries. One hotelier said:

*We do staff awareness. They have induction training when they start and it depends on the department that they are going to work in. They are given training on how to do their job and be implication of that job has regards to recycling or waste; they will be informed of what to do.*

(SH4/GDES, 29 Rooms)
Neither GDES nor non-GDES hoteliers look at incentivizing staff financially to enhance their participation. Instead, they argued that it was far better to provide them with the tools required to separate the waste and make them aware of how to reduce and recycle hotel waste. Friedman and Miles (2001) similarly indicated that it is important to encourage staff to get involved through allocating work hours for staff meetings to discuss environmental issues within the operation and raise the environmental awareness among staff. Only one GDES hotelier had set financial inducement to encourage staff to come up with effective ways to cut down hotel waste. One hotelier commented:

*As a small family business I do not think we will be looking to give any monetary incentives ... They need guidance not incentives to be able to reduce the waste.*

(SH 3, 28 Rooms)

### 7.4.2.9 Involve customers in the hotel’s SWM programme

A major distinction arose between the attitudes of GDES and non-GDES participants in respect of involving customers in the hotel’s SWM programme. From the perspective of non-GDES small hotels, the majority of hoteliers refused the idea of involving customers in the hotel’s SWM programme to reduce landfill waste. They considered that asking customers to segregate and reduce their waste was a disrespectful question which was unexpected from a small hotel operator. As one hotelier said: *"how can I ask customer who come here and stay for a night or a week and pay his bill to segregate waste! It will be impertinent"* (SH6). Accordingly, most non-GDES hoteliers did not recognize any social motivation from customers to manage their solid waste.
waste effectively, commenting that customers were not coming to a hotel to sort out rubbish. Only two hoteliers held positive attitudes toward the initiative and were willing to cooperate by putting signs and clearly-labelled bins to encourage customers to segregate their waste.

However, most small hotels committed to GDES regarded customers as one of the key players in their hotels' SWM programme. This result accorded with previous studies (Hayward, 1994; Cummings, 1997; Trung and Kumar, 2005) which reported that guest involvement was very important to increase the efficiency of the hotel's SWM programme. Hoteliers had actually made customers aware of their hotel’s environmental policy, where SWM was one of its targets, by putting it in a prominent position in hotel’s reception area or within the welcome folder or by advertising it on the hotel’s website. Moreover, they put eco-tips in guestrooms encouraging customers to behave in an environmentally-responsible manner during their stay in the hotel and asking them to reduce and/or not contaminate the waste whenever possible. In this respect, they put two different bins in rooms – one for food waste and the other for general waste which would be separated afterwards by staff for recycling. As one hotelier commented:

We put our environmental policy to customers in a prominent position within the hotel. Our guests are informed of our environmental practices and their possible input into the scheme. For example, they are told to place plastic and newspaper to one side so that the policy of recycling is continued.

(SH2/GDES, 8 Rooms)
Interestingly, hoteliers reported a positive contribution by many customers to their hotel's SWM programme. As one hotelier said: “the majority of our guests are quite sensible to the environment. They are very happy with that” (SH2/GDES). Nevertheless, currently, the social influence driven by customers was still very small to influence hoteliers’ behavioural intentions regarding SWM. Most hoteliers believed that the environmental aspect was not a priority for most customers at the moment when selecting a hotel but it was going to increase in the future.

7.5 Best practice model for the public sector to encourage better SWM practices in small hotels

The cross-case analysis has actually facilitated the process of developing a best practice model for SWM in small hotels. It evaluates and discusses all the steps of the model from the perspectives of the different associated stakeholders, including: non-GDES small hotels; GDES small hotels; public and private sector’s waste carriers. The developed model builds up basically on the findings obtained throughout the fieldwork, the theoretical model for SWM in small hotels (see Figure 2.12) and the key SWM issues identified in the literature. During the fieldwork, the theoretical model had been explored and modified according to the results to develop a best practice model for SWM in small hotels.

The model starts with identifying seven means of motivations that are crucially to encouraging small hotel operators to commit to their environmental responsibility and to manage their solid waste appropriately,
including: providing the tools and facilities, providing awareness and education, enhancing the economic motivation, encouraging the social motivation, boosting the marketing motivation, enacting legislative pressure and building networks between small hotels (discussed in section 7.4.1). It appears that the government plays the key role for developing most of these instruments to influence small hotels’ SWM practices. The model then considers seven main steps for implementing better SWM practices in small hotels (see Figure 7.4), as follows:

**Step 1 Hotel commitment to environmental responsibility.** It provides the base for developing a successful SWM programme. Small hotel operators have to consider their environmental responsibility and formulate an environmental policy aimed to save the environment from the negative impacts associated with their hotel operations, e.g. waste disposal. It is important to note that the seven means of motivations which has been set initially will be successful in driving small hotel owners/managers to commit to their environmental responsibility and manage their solid waste effectively. It will encourage hoteliers to devote resources, time and manpower to tackle SWM issues. The commitment represented the foundation level in Cummings’ SWM hierarchy model (1997) (see Figure 2.9), it was emphasised also in the environmental management guidelines published by the IHEI (IHEI, 1993). It is the most critical factor for an effective long-term SWM programme (Bigger, 1991; IHEI, 1993).
Figure 7.4: Best practice model for the public sector to encourage better SWM practices in small hotels

Chapter seven: An evaluation and discussion of SWM practices across all cases studied
Step 2  **Undertake a waste audit.** An audit process should be carried out to identify types, quantities and sources of waste streams produced and then decide on the best option for managing each waste stream. Hoteliers can seek advice or help from external consultants (e.g. Arena Network, Envirowise and the waste contractor) to audit the hotel waste streams as they may not have experience to do this action. It is very useful also to make an input/output process analysis to support the implementation of waste minimisation and/or prevention approach. The input/output analysis will enable hoteliers to identify all the materials going into the system and adopt appropriate control measures to reduce the amount of waste produced during all the life cycle of the product. Records of waste generation, disposal routes and the auditing process must be kept and updated continuously to measure the effectiveness of managing hotel solid waste.

Step 3  **Work with the contracted waste carrier.** Under the EPA 1990 small hotel operators have the choice to either contract with the local authority or a private sector contractor to get rid of hotel waste. The regulations do not require the waste producer to deal with a specific waste carrier but to comply with what is called ‘duty of care’. Hoteliers should work with the contracted waste carrier to approach all the options listed in the waste management hierarchy. The findings revealed that the waste carrier could have a significant direct influence on small hotels’ implementation of all the options listed in the waste hierarchy. Therefore, local authorities and private sector’s waste carriers alike should have the capability to tackle all SWM options and
provide total solutions to customer waste. They should provide waste minimisation, recycling and composting services to support small hotels as well as other commercial and industrial businesses to manage their solid waste in an appropriate way.

**Step 4: Implement SWM programme based on the waste hierarchy.** This step implies that small hotel operators should put a greater emphasis onto the most favoured options listed in the top of the hierarchy and investigate the different ways to apply them for managing hotel waste, including: prevention, minimisation, reuse, recycling and composting respectively. Disposing of the waste into landfill should be considered at the last resort. Whatever waste alternative used, hoteliers must comply with the Duty of Care EPA 1990 and dispose of their waste in a legally proper manner.

Moreover, the findings revealed that the government support take-back schemes along with the manufacturers’ production and packaging strategies had a significant influence on SWM in small hotels. Indeed, the UK government should develop an effective national PTB system covering a wide range of waste streams and allowing small business end users, like small hotels, to take-back their products (e.g. packaging). Likewise, the government should adopt a strategy of producing zero-waste and encouraging and/or forcing manufacturers to consider producing clearly-labelled green products so as to enable businesses cut waste at source.
Step 5  *Overcome the challenges.* The findings identified a range of intrinsic barriers facing small hotel operators in managing their solid waste sustainably, including: lack of space, time, support, awareness and cost issues in addition to hoteliers’ attitudes themselves which acted like a constraint with many hoteliers were lethargy and/or unwilling to handle their solid waste streams effectively. Accordingly, small hotel owners/managers have to show more commitment and prevail over such challenges and find some ways to tackle SWM issues in an environmentally and economically viable manner.

Step 6  *Encourage staff participation in the hotel’s SWM programme.* Hoteliers should consider different means to provide an internal environmental awareness to all staff to enhance their participation in the hotel’s SWM programme. The findings indicated that the best way was to integrate SWM as a significant part of the hotel’s induction training programme which given to any new employee to educate them on why and how to reduce, recycle and compost hotel waste. It is important to motivate staff participation also by giving them some sort of incentives, e.g. partially-used guestrooms toiletries. Cummings (1997) and Friedman and Miles (2001) emphasised the great need to communicate meaningful incentives to maximize staff involvement in the hotel’s SWM programme. They also added that employees must be educated on SWM practices required in the daily administration and performance of the roles.
Step 7 Involve customers in the hotel’s SWM programme. Customers represent one of the key players the same as staff in the hotel’s SWM programme. Small hotel operators should encourage customers to behave in an environmentally-responsible manner and take-part, for example, by putting notes in guestrooms asking customers to consider buying locally green products whenever possible, reduce and not to contaminate their waste. Consequently, hoteliers should place two clearly-labelled bins in guestrooms and also throughout other areas in the hotel (e.g. corridors) to maintain customer waste not stained with food waste and thus making it a viable opportunity for recycling. Previous research (Cummings and Cummings, 1991; Hayward, 1994; Cummings, 1997; Trung and Kumar, 2005) reported that educating customers is a significant aspect of the hotels’ SWM programme. Hoteliers should develop tools to make all customers aware of the different activities taken to reduce waste (i.e. recycling) and the importance of their participation in the programme.

7.6 An evaluation of the findings in respect of TPB

In this research, a qualitative approach was used with the theoretical framework of TPB to avoid many of the aforementioned shortcomings associated with using questionnaire surveys in environmental studies (e.g. inconclusive and inaccurate results) (see section 3.2). Previous research (e.g. Smith and Biddle, 1999; Davis and Morgan, 2008) similarly concluded that future research should use TPB with a qualitative perspective because of the difficulties in capturing the real attitudes of respondents towards the
behaviour via using a questionnaire survey. Also, “TPB requires large data sets to facilitate a detailed analysis, thus the length and complexity of the survey tool is unattractive for many individuals to complete” (Davis and Morgan, 2008:115).

The TPB is one of the most applied models in environmental studies, particularly for determining and understanding waste minimisation and recycling behaviours (e.g. Davis and Morgan, 2008). The TPB model combined with best practice of SWM behaviours had been used as a theoretical base to guide this research. The components of TPB (Attitude, Subjective Norms and PBC) had been operationalized by asking hoteliers open-ended questions to elicit and understand their attitudinal, normative and control-based beliefs towards the implementation of sustainable SWM behaviours.

The TPB (Ajzen, 1985) had contributed significantly in understanding hoteliers’ attitudes and behaviours in relation to SWM. It helped in identifying the most appropriate tools which the public sector could use to influence and/or change SWM behaviours in small hotels (see section 7.4.1). Analysis using TPB revealed that the attitude component had a significant effect on hoteliers’ behavioural intentions to perform or not to perform SWM behaviours. However, it was important to reach the real attitudes of hoteliers towards SWM issues as many people tended to show favourable attitudes and give information which was socially accepted while they might not have
intention to perform the behaviour, particularly in ethical and environmental studies. For this reason, TPB was used with a qualitative research approach. In addition, some hoteliers of non-GDES small hotels were re-interviewed after 18 months to explore if their positive attitudes towards recycling had been translated into action or not, particularly after the public sector provided a recycling system for commercial businesses.

The PBC component proved also to have a significant effect on determining hoteliers’ behavioural intentions. Indeed, hoteliers were constrained with the lack of the facilities and limited external support to implement all the options listed in the waste management hierarchy. Moreover, the social factor (Subjective Norm) which could be created by significant others (staff, customers, competitors and local community) showed to have a small effect on hoteliers’ behavioural intentions and not as important as the attitudinal or the PBC factors. Previous research similarly (Sheppard et al., 1988; Ajzen, 1991; Godin and Kok 1996; Terry and Hogg, 1996; Terry et al., 1999) provided little support to the role of Subjective Norm as a predictor of intentions to perform the behaviour in TRA and TPB.

However, this research proved that the TPB with its main components (Attitude, Subjective Norm and PBC) was still not adequate to predict and/or explain the behaviour of small hotel operators in relation to SWM and additional factors needed to be incorporated. Despite the considerable support of using TPB, several previous studies (Cheung et al., 1999; Terry et
al., 1999; Davies et al., 2002; Davis and Morgan, 2008) used TPB in predicting the recycling behaviour and similarly indicated that TPB was not sufficient in explaining the behaviour and so additional factors should be incorporated. The TPB when originally modelled by Ajzen stipulates that a person’s behaviour is formed as a result of his intention to perform or not to perform the behaviour and intention is, in turn, determined by three main factors including: the person’s attitude towards the behaviour, Subjective Norm and PBC. The more positive the Attitude and the Subjective Norm and the greater the PBC the more likely the person will perform the behaviour (see Figure 7.5).

**Figure 7.5: The Theory of Planned Behaviour**

![Diagram of the Theory of Planned Behaviour](Source: Ajzen, 1991)

Applied to this research, a group of non-GDES hoteliers (3 out of 9) had initially showed positive attitudes towards recycling and were very willing to recycle but they perceived a difficulty because of the unavailability of the
recycling service from the public sector. However, when these hoteliers re-interviewed 18 months after they had the ability to make recycling as the local authority had provided a recycling system for commercial businesses hoteliers still landfill of the hotel waste. According to TPB, hoteliers had the ability to recycle after the public sector provided the service (PBC), which previously constituted the most significant obstacle facing hoteliers in recycling and they held favourable attitudes towards recycling (Attitude towards the behaviour). This gave a significant indication of hoteliers to perform the recycling behaviour. However, in the follow-up interviews, hoteliers exhibited negative attitudes to recycle and would continue in disposing of their hotel waste into landfill.

Ajzen (1991) the TPB is flexible and open to further incorporation of additional variables if it is seen that they can contribute effectively in explaining the behaviour, particularly after the theory's main variables are considered. This study concluded that a modification should take place to make the TPB more effective in determining and explaining the behaviour of small hotel operators in respect of SWM. In addition to the three main components of TPB (Attitude, Subjective Norm and PBC) which influence the behavioural choices, a motivational variable (e.g. incentives and legislation) needs to be added to help predict and understand why small hotel operators do or do not engage in certain SWM behaviours (see Figure 7.6). The results revealed that if hoteliers perceived economic or legislative motivation to manage their solid waste effectively then they would be more likely to
perform the behaviour. This was confirmed by Davies et al. (2002:40) “if there is a local incentive which is salient to a particular individual then it may instigate the behaviour”.

**Figure 7.6: The behavioural motivation variable and TPB**

![TPB Diagram]

### 7.7 Conclusion

This chapter revealed no change to SWM practices in non-GDES small hotels after the local authority provided a recycling system for commercial businesses. Hoteliers still undertook landfill as a primary SWM option and had no intentions to recycle. This highlighted the great need to a further motivation and/or pressure to influence hoteliers’ behavioural intentions and drive them to manage their solid waste effectively. The chapter explains great
variations between SWM in GDES and non-GDES small hotels through a cross-case analysis (see Table 7.1). The analysis process has led to the development of a best practice model for the public sector to encourage better SWM practices in small hotels (see Figure 7.4).

The model entails seven means of motivations to drive small hotel operators to tackle their environmental responsibility and manage their solid waste effectively. It then identifies seven steps to reach the goal of SWM best practices in small hotels. The model has emphasised the role of the waste carrier (the local authority and private waste sector) together with government support take-back schemes and the role of manufactures in influencing SWM in small hotels. The chapter also concludes that TPB with its main components (Attitude, Subjective Norm and PBC) is not adequate in explaining and/or predicting SWM behaviours in small hotels and recommends that additional motivational variable should be added to the model to make it effective in understanding the behaviour (see Figure 7.6). The next chapter of the thesis gives conclusion and recommendations.
Table 7.1: Summary of the cross-case analysis, involving: non-GDES small hotels, GDES small hotels, public and private sectors’ waste carriers

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Non-GDES small hotels</th>
<th>GDES small hotels</th>
<th>Public sector’s waste carrier</th>
<th>Private sector’s waste carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential motivation to consider sustainable SWM practices</td>
<td>A large consensus between GDES and non-GDES small hotels identifying seven means of potential motivation required to influence SWM practices in small hotels, including: providing the tools and facilities, providing awareness and education, enhancing the economic motivation, encouraging the social motivation, boosting the marketing motivation, enacting legislative pressure and networking small hotels</td>
<td>Increasing the landfill tax and making recycling compulsory are the most significant tools to influence SWM practices in small hotels as well as private waste sector.</td>
<td>The government should not consider increasing the landfill tax or force recycling unless they provide the infrastructure required, e.g. MRF and waste transfer stations.</td>
<td></td>
</tr>
<tr>
<td>Hotel’s commitment to environmental responsibility</td>
<td>Little or no attention has been paid to the hotel’s ecological responsibility with the majority of hoteliers believed that a small hotel had little or no impact on the environment.</td>
<td>A strong commitment to the hotel’s ecological responsibility is expressed through developing an environmental policy, setting an improvement plan and undertaking an environmental audit</td>
<td>The audit process which supplied by the local authority is restricted only on helping customers to recycle.</td>
<td>Larger waste companies provide a site visit to audit larger business waste streams and identify opportunities for tackling all the options of the waste management hierarchy, whereas smaller carriers do not have the capability to do a waste audit on behalf of their customers.</td>
</tr>
<tr>
<td>Undertake a waste audit</td>
<td>Never taken an audit</td>
<td>A comprehensive environmental audit, which SWM represents a significant part, undertaken once when certifying with GDES and updated regularly.</td>
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</table>
### Chapter seven: An evaluation and discussion of SWM practices across all cases studied

| Work with the contracted waste carrier | Mostly use the local authority’s waste carrier. Cost and convenience are the most significant factors considered in selecting a waste carrier whereas the environmental measure, for example selecting a carrier who disposes of the waste sustainably, is not a consideration by most hoteliers. | Officers very keen to work with all businesses to recycle but they find it difficult to work with the private waste sector on the base of reducing and recycling commercial waste because they have different targets. | Most waste carriers, except some larger waste companies, believed that working with businesses to reduce their waste contradict their objectives in making money, the same process as working with the local authorities. |

| Implement SWM programme considering the waste hierarchy: |  |
| --- | --- | --- |
| **Prevention** | It is not an accessible SWM option. Most hoteliers are ignorant of how to cut waste at source. | It is an effective SWM option to prevent hotel waste at source. Most hoteliers undertake green purchasing practices. The government should control, encourage and/or force manufacturers to produce green products. | The local authority does not have the resources to work with businesses to prevent and/or reduce their waste. They just signpost businesses to other specific organisation like Arena Network. Currently, they consider their waste minimisation/prevention targets as secondary objectives. |
| **Minimisation** | Hoteliers believed that it was very difficult to minimise hotel waste streams. They were not aware of the varied techniques which could be used for reducing waste throughout the product’s life cycle. | Hoteliers valued minimisation as a SWM option. They undertook varied practices to minimise hotel waste either in-house or donation to charities or selling. | Larger waste companies provide an appropriate support in respect of waste prevention/minimisation but they confined such services to larger waste producers. Smaller waste companies do not have the resources and/or the experience to work with businesses regarding these targets. |
| **Reuse** | Reuse was not a feasible option limited only to plastic bags and fluid soap. | Hoteliers effectively reused a wide range of waste materials and prevented them to go into the waste stream, e.g. guestroom’s toiletries. |  |
| **Recycling** | Most hoteliers were not interested and/or indolent to | Most hoteliers were very keen to recycle to save cost and | The council had recently provided a recycling system |
|  |  |  | Many waste companies had the facility and worked with |
**Chapter seven: An evaluation and discussion of SWM practices across all cases studied**

| **Composting** | Composting was not largely explored by hoteliers of GDES and non-GDES small hotels. Although a few hoteliers successfully did in-house composting most hoteliers felt that it would create a lot of problems in their hotels. Many GDES hoteliers were very willing to separate food waste for composting if it was collected commercially. | The public sector still could not work with food waste producers such as small hotels in regards to composting as they still had not got the facility. | The private waste companies did not have a composting facility in Wales and even they were not willing to invest in composting believing that it was not profitable. |
| **Landfill** | Landfill had been used as a primary SWM option for getting rid of hotel waste. Landfill was not largely preferred by most hoteliers but it was used primarily for disposing of food waste as composting still unavailable to hoteliers. | The council had a greater commitment to divert the waste away from landfill and reach their recycling targets. | The majority of small waste companies were still more interested to collect and landfill of waste materials. |
| **Government support take-back schemes** | Hoteliers were not willing and felt negatively to take-part in any potential government support take-back scheme. Hoteliers see PTB scheme as a good way to reduce hotel waste. They were very eager to participate as some hoteliers currently set their own take-back system. | | |
| **Comply with the legislative requirements** | Many hoteliers were breaking covertly using the domestic waste recycling system either in the weekly collection or HWRC illegally. Although hoteliers identified a range of objective obstacles to recycle (e.g., space, time and cost issues) but they prevailed over. In fact, lack of the facilities and awareness were | The public sector showed a number of constraints to recycle commercial waste but they overcame: lack of financial and personnel resources; location of the | The private waste sector had experienced a range of difficulties to recycle, including: lack of resources; lack of recycling and processing facilities; lack of |
| **Overcome the challenges** | Hoteliers perceived a range of behavioural barriers that prevent them to manage their solid waste effectively and they were unenthusiastic to overcome: lack of the facilities; | | |
### Chapter seven: An evaluation and discussion of SWM practices across all cases studied

<table>
<thead>
<tr>
<th>Encourage staff participation in the hotel’s SWM programme</th>
<th>lack of awareness; separation of the waste; lack of time, space and cost issues.</th>
<th>the real barriers facing GDES small hotels to manage solid waste effectively.</th>
<th>businesses; frequency of collection; contamination of the waste.</th>
<th>recyclable markets; client lethargy.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hoteliers</strong></td>
<td>Hoteliers adopted a strategy of enforcement rather than encouragement believing that staff paid to do whatever the boss required them to do.</td>
<td>Most hoteliers trained and educated staff on SWM issues through an induction training programme. They enhanced staff participation by giving them, for example old durable furniture when refurbishing their hotels.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Involve customers in the hotel’s SWM programme</strong></td>
<td>Most hoteliers believed that it was difficult to involve customers in the hotel’s SWM programme as they regarded that as an impolite action.</td>
<td>Customers played a key role in the hotel’s SWM programme. Most hoteliers considered different means to motivate customer participation.</td>
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</table>
CHAPTER EIGHT:
CONCLUSIONS

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8.1 Introduction

This chapter concludes this study on managing solid waste in an environmentally-responsible way in the context of the small Welsh hotel sector. It opens up with a review of the research objectives and provides an overview of the research major findings. The chapter then moves onto outline the significant contributions of the study to theory and practice. It highlights the limitations of the study and identifies opportunities for further research. The chapter ends up with the researcher’s final thoughts and reflections on the research process.

8.2 Review of objectives and major findings

8.2.1 Objective 1

Undertake a critical review of relevant literature on SWM and small hotels to explore the different alternatives which small hotels could use to manage their solid waste, the issues facing them in implementing sustainable SWM practices and to develop a conceptual framework to guide this research.

This objective was achieved through undertaking a thorough critical analysis of relevant literature on SWM concerning small hotels. Reviewing the literature has given a better understanding of tackling the environmental responsibility by small hospitality businesses, the way they tend to manage their solid waste, the barriers and the drivers to environmental performance improvement. It was clear from the literature that most small hotels observed their environmental responsibility as a peripheral activity; with the majority of
small hotels were thinking individually of their impact on the environment while ignoring their cumulative impact. Nevertheless, the literature highlighted that EMS – certified hotels, such as GDES, were paying more attention to their environmental responsibilities and inclined to undertake eco-friendly practices to reduce their impacts on the environment rather than non-green hotels as one would expect. The literature addresses also some of the theoretical frameworks which were widely used to understand people behaviours in relation to environmental issues (TRA, TPB and ITB).

The waste management hierarchy is one of the key issues that have been largely emphasized in the literature to be deployed as the base for managing solid waste in small hotels. The varied concepts, avenues and difficulties for implementing all the options listed in the waste hierarchy, starting with prevention of the waste all the way through to dispose of the waste into landfill, had been explored. It was apparent that landfill was the dominant waste strategy in Wales and all over the UK as it was the most accessible and cheap waste alternative for all waste producers. The landfill tax in the UK remains ineffective as a mean of discouraging landfill and drive small businesses to make use of other sustainable SWM alternatives.

Another key issue that has been addressed in the literature is that the PTB systems in the UK were confined to packaging and electronic waste. Nevertheless, the packaging system was built upon excluding small business end users from the cycle and the WEEE system depended largely on
negotiations with retailers. Accordingly, small businesses in the UK are not able to take-back their products for recycling in comparison to other European counterparts, such as Switzerland and Germany. The critical review of the issues, concepts and opinions revealed in the literature provided the basis for the development of a theoretical model of best practice for SWM in small hotels (see Figure 2.12).

8.2.2 Objective 2

Investigate SWM practices in non-GDES small hotels in a Welsh local authority and explore the support available to them from the local authority and the private waste sector to manage their solid waste in a sustainable way.

This objective is linked with answering three main research questions addressed in this thesis: What are the challenges of implementing sustainable SWM practices in small hotels? How could public and private waste carriers support small hotel owners/managers in managing their solid waste effectively? What could influence the behaviour of small hotel owners/managers to manage their solid waste appropriately? (see section 1.3). To accomplish this objective and answer these aforementioned research questions, an exploratory case study of non-GDES small hotels was researched in a Welsh local authority to explore SWM practices in non-GDES small hotels and focus on the support available to them from the waste carrier either the local authority or the private waste sector. A summary of the major findings of this objective are given under two main headings, as follow:
• **SWM in non-GDES small hotels in a Welsh local authority**

Careful analysis of the findings revealed that most of the sustainable alternatives of the waste management hierarchy had very little or no applications in the non-GDES small hotels, which was expected, especially in comparison to GDES small hotels. An initial model for SWM in non-GDES small hotels was developed based on the findings obtained by interviewing non-GDES hoteliers (see Figure 4.3). In essence, a few hoteliers were positive and take an action to manage their solid waste effectively. Nevertheless, the majority of non-GDES hoteliers did not explore prevention, minimisation, reuse, recycle and compost and even felt negatively about these options, except recycling. Despite being the most undesirable SWM option, landfill was still used as the main waste strategy for disposing hotel waste by most hoteliers.

The findings of this case study also informed the design of a revised model for SWM in non-GDES small hotels following the introduction of improved SWM practices by the local authority for the support of businesses (see figure 7.1). The model identified the real attitudes of hoteliers, particularly towards recycling, which they successfully managed to hide in the initial interviews with them by showing favourable attitudes and reasoning that the service was not available. However, the results revealed no change to SWM practices in non-GDES small hotels after they had the recycling service from the public sector, which formerly constituted the most significant barrier to their behaviour. Most hoteliers still implemented landfill as a primary waste
disposal route believing that small hotels produced a small amount of waste which would have no or minuscule impact on the environment. The findings implied that powerful legislative and economic motivations needed to influence hoteliers’ behavioural intentions and drive them to manage their solid waste effectively.

Most hoteliers believed in enforcing rather than encouraging staff participation in hotel’s SWM programme. A few hoteliers indicated that staff should be made aware of their responsibility in managing hotel waste and provided with the tools necessary to fulfil their duties. In the same way, most hoteliers discouraged customer participation in hotel’s SWM programme believing that it was impolite to urge customers to segregate their waste. However, a few hoteliers were positive towards such activity believing that most customers would be interested. Moreover, almost all hoteliers refused to take part in any potential PTB system in the UK reasoning that there would be a time, space and cost constraints to follow up this route. Only one hotelier had demonstrated favourable attitudes towards PTB systems. In essence, networking was a concept which was lacking the desirability by many non-GDES hoteliers because of the competition factor. However, some hoteliers had showed positivity towards networking to cooperate with other small hotel operators and exchange ideas and information on SWM.

• SWM operations by the public and private waste sector

(1) Public sector
The findings highlighted a gap between the public sector’s waste strategy and practices. Although the council had waste prevention/minimisation targets set by WAG in the Welsh waste strategy 2002 they were unable to work with businesses in regards to achieving these targets. They currently considered their waste prevention/minimisation targets as secondary objectives signposting businesses, if asked, to other specific support organisation to help them with these targets. Actually, the local authority did not have the resources and the experiences necessary to deal with businesses and help them prevent/minimise their waste.

On the base of recycling, the authority developed a recycling system for commercial businesses in 2006 offering cardboard, glass and mixed recycling schemes after a long time focusing only on domestic recycling. The mixed recycling bag was an appropriate scheme for small hotels to recycle their waste as it did not require hoteliers to separate the waste but not to contaminate it and thus eliminating most of the obstacles declared by hoteliers in terms of segregating waste materials, i.e. time, space etc. The authority confronted a range of obstacles in recycling commercial waste but they prevailed over and committed themselves to collect recyclable waste from any business wanted to recycle. Also, the local authority’s officers showed more interest to investigate the process of networking small hotels when developing their future strategies to get them working together and also localise their waste separation systems.
Furthermore, the local authority could not work with small hotels in respect of composting because they still had not got a closed windrow plant to compost food waste. They ignored their composting targets set by WAG and even provided very modest service to enhance their in-house composting programme, which limited only to providing advice on request. Officers identified cost and legislation as the main tools to drive small hotels as well as other commercial businesses to manage their solid waste effectively. However, the cost of recycling offered by the public sector was still not encouraging for most hoteliers because they would not recycle to just save 13p a bag. Moreover, the local authority’s officers believed that it was difficult to work in a partnership with the private waste sector on the base of reducing commercial waste sent to landfill because they had different targets.

(2) Private waste sector

It was clear that most private waste companies could not work with small hotels in terms of prevention/minimisation of their waste as they perceived these targets as hindrance to their profit-making objectives. In essence, some larger waste companies provided a third-party experience to support businesses in terms of prevention/minimisation of their waste but they confined such services to industrial waste producers which were not the case with small hotels. Moreover, many private waste companies were found very keen to recycle but they experienced a range of difficulties in recycling (e.g. lack of recyclable markets) and thus they asked for governmental support. Similarly, the private sector could not assist small hotels in respect of
composting as they did not have composting facilities in Wales or even intentions to invest in composting believing that it was difficult and unprofitable business. Yet, the majority of small waste carriers were still landfilling.

The findings informed a range of tools that could be used to drive private waste carriers to work with businesses in terms of all the waste hierarchy options, including: increasing the landfill tax; enacting legislation for recycling; setting recycling and composting targets for each waste company; customer demanding of the service. However, the government should not consider these tools until they make recycling and composting an attainable opportunity, for example by building waste transfer stations and securing recyclable markets for each waste streams.

8.2.3 Objective 3

Explore the attitudes of the owners/managers of GDES small hotels regarding the implementation of more sustainable SWM practices and comparing them to the non-GDES small hotels studied in the second objective.

This objective seeks to address three questions of the main focus of this thesis, including: How do small hotels committed to GDES manage their solid waste? Does GDES support hoteliers in relation to SWM? What could influence the behaviour of small hotel owners/managers to manage their solid waste appropriately? (see section 1.3). This objective was fulfilled by
developing an embedded explanatory case study of small hotels committed to GDES in Wales to identify SWM practices in GDES small hotels, determine hoteliers’ attitudes and the rationale behind the implementation of more sustainable SWM practices and explore the support available to them from Arena Network.

A modified model for SWM in GDES small hotels was presented as a result of hoteliers’ beliefs, attitudes and comments which were captured through semi-structured interviews with them (see Figure 5.4). Most GDES hoteliers were more committed to tackle their environmental responsibility which demonstrated three main issues: developing an environmental policy, undertaking an environmental audit and setting an environmental improvement plan. They considered different means to measure the effectiveness of their hotels’ environmental performance and continuously worked towards the improvement. As Arena Network lacked the funding to work with GDES organisations some hoteliers sought help and advice from other business support organisations such as Carbon Trust and Envirowise.

The waste management hierarchy had been used as a guiding principle to shape SWM practices by most GDES hoteliers. They were targeting the waste hierarchy in its significant order of alternatives, starting with prevention of waste at source. They had a green purchasing policy developed mainly to protect the environment by purchasing eco-friendly products and from local suppliers. Nevertheless, some hoteliers felt negatively about prevention and
agreed with the view of non-GDES hoteliers that there was a difficulty in buying eco-friendly products because of the higher prices, quality defects and less variation of green products. Moreover, minimisation and reuse alternatives were highly prioritized by all GDES hoteliers undertaking various practices to reduce and reuse hotel waste streams.

Most GDES hoteliers were very keen to recycle with the majority of them followed an illegal route for recycling, despite knowingly their legal obligations in relation to SWM. In practice, most hoteliers overcame the internal constraints but ‘lack of the external facilities’ was one of the real barriers facing GDES small hotels in either recycling or composting. Many hoteliers were very interested to separate food waste for composting but they had not got an access to a composting facility by either the public or private sector. Indeed, landfill was considered as the last resort by most GDES hoteliers but out of their control landfill represented the main waste strategy for disposing food waste because hoteliers did not have the opportunity to compost or give it to animals for feeding.

Furthermore, most hoteliers appreciated the key role that could be played by staff and customers in a hotel’s SWM programme. They also perceived take-back as an effective way to recycle hotel waste. They were eager to participate in any potential PTB system if it incurred no costs to them. Indeed, the need to obtain financial savings, protect the environment, create a competitive advantage and be eligible for having grants were the primary
motivations which led most hoteliers to achieve GDES and manage their solid waste effectively. Finally, most hoteliers believed in developing some sorts of cross links, communications and partnerships between small hotels. A cross-case analysis was then developed in which the key issues arising from both case studies undertaken in this research identified. This led to the development of a best practice model for the public sector to encourage better SWM practices in small hotels.

8.2.4 Objective 4

Make recommendations in relation to SWM strategies appropriate to small hotels.

This objective is connected with the last research question addressed in this study “What are the potential solutions to improving SWM practices in small hotels?” To achieve this objective and answer this research question, the thesis evolved a best practice model for the public sector to enhance SWM practices in small hotels (see Figure 7.4) and proposed an input/output process model for the government to encourage public and private waste sectors to implement sustainable SWM practices (see Figure 6.7). Both models implied a number of recommendations to different associated stakeholders, including: small hotel owners/managers, UK government and public and private sector’s waste carriers, which would add to SWM strategies and assist small hotels to manage their solid waste effectively (as explained in the following sub-titles).
(1) **Recommendations to small hotel owners/managers**

- An auditing process to hotel waste streams should be carried out either by hoteliers themselves or with the support from the waste carrier to identify sources and quantities of solid waste generated and how the hotel could effectively manage each waste stream produced. Hoteliers should maintain records for waste generation and disposal routes (e.g. waste disposal charts) and continuously measure the effectiveness in managing their hotel solid waste.

- Hoteliers should consider and prioritize the waste carriers who dispose of the waste in an environmentally-responsible manner, (e.g. by recycling and/or by composting) over those who just get rid of the waste into landfill. Hoteliers should also require the waste carrier to help them tackling all the options listed in the waste management hierarchy which in turn would pressurize the waste carrier to provide total SWM solutions.

- The waste management hierarchy should be used by small hotel operators as the base to guide their SWM practices. Hoteliers should consider buying from local suppliers and value the environmental attribute of the product when purchasing to cut down the waste at source. They should next explore the different avenues for reducing and reusing hotel waste to prevent it from entering the waste stream. Afterwards a waste separation programme should be incorporated throughout the hotel for recycling and composting the hotel’s general and organic waste. Landfill should be utilized as the last option.
It is essential to encourage staff participation in the hotel’s SWM programme and make them aware of how to manage hotel solid waste by incorporating SWM as a part of the induction training programme. Likewise, customers should be asked to take part and provide them with the tools necessary to maintain their waste not contaminated.

Hoteliers must understand that solid waste generation is a real threat to the environment and landfill is not the way forward to treat the waste. Nevertheless, by managing it effectively they are helping the environment as well as their businesses in terms of creating economic, social and marketing advantages and also complying with the upcoming regulations.

(2) Recommendations to the UK government

The success of SWM in small hotels is strongly dependent on the lead which would be given by central government. The UK government should revise its national waste strategy and pay more attention to target and reduce solid waste generation at source by forcing and/or encouraging manufacturers to consider producing clearly-labelled green products and at accessible prices. To achieve the national recycling and composting targets, it is essential also for the government to understand the conditions facing each local authority individually and provide sufficient funds to help local authorities to carry out their waste management activities.
Small hotel operators lacked the awareness to adopt a proactive SWM behaviour. Thus, it is essential for the UK government to provide more environmental programmes specifically tailored for small businesses the same as Envirowise to enhance their environmental awareness and educate them on how to target all the options listed in the waste management hierarchy. The government should also direct and promote people’s attitude since childhood by introducing SWM as a part of curriculum for children to learn in schools and carrying on through secondary and higher education to know the dangerous effects of solid waste on the environment, the problems facing the planet and how to manage solid waste properly. The Brundtland Commission previously commented that “the environmental education should be widened and should run through other disciplines of the formal education and curriculum at all levels” (World Commission on Environment and Development (WCED), 1987:113).

The government intervention is essential to develop a comprehensive PTB system involving a wide range of products and allowing small business end users to take-back their products (e.g. packaging and electronic waste).

The UK government should continue in its strategy in increasing the landfill tax and consider enacting legislation for recycling to divert the waste away from landfill. This would drive small hotels as well as private waste carriers, particularly small waste haulers, to recycle.
Nevertheless, the government should not think about these drivers until making recycling an accessible opportunity for the producer and the carrier of the waste alike by setting more waste transfer stations, processing facilities and stimulating markets for each recyclable waste stream.

➢ The Environment Agency should stop issuing waste carrier licenses which permit the carrier to just collect and landfill waste. They should also set strict recycling and composting targets for each waste company based on its waste collection reports which the carrier must submit to the Environment Agency on a quarterly basis.

(3) Recommendations to the public and private sector’s waste carrier

➢ The local authority should encourage small hotel’s environmental responsibility and tailor specific SWM training programmes to assist and educate this sector on how to implement all the options listed in the waste management hierarchy and also make them aware of their legal obligations in regards to SWM. In addition, an effective system should be set in place to control small businesses using the domestic waste stream and prevent illegal dumping.

➢ The environmental programmes such as recycling are also attractive to small hotel operators because of the possibility to create a positive image. Thus, the authority should incentivize small hotels by supporting them to get benefit from managing their solid waste on the marketing side via setting and promoting an environmental
award on annual basis to compensate those hotels that are best managing their solid waste in the locality.

- The local authority should deal with their waste prevention/minimisation targets set by WAG as primary objectives and provide appropriate support, awareness and site visits to audit business’s waste streams. They should also develop convenient and easy recycling and composting systems for commercial businesses and consider their in-house composting programme to enable small hotels as well as other commercial businesses to manage their solid waste sustainably.

- The private waste sector either larger or smaller waste companies alike should have the experience, facilities and capability to work with all types and sizes of businesses and help them prevent/reduce, recycle and compost their waste. They should perceive that as a long-term strategy for investment.

- The waste carrier either the public or the private waste sector should provide a cheap recycling service than landfill and encourage businesses to segregate their waste at the first place of generation and support them with the tools essential to do that. The waste carrier should also charge businesses by weight so as to incentivize them to cut down the amount of waste produced.

- The authority should take the lead role and build networks between small hotels to localize waste separation system across streets and
also get small hotel operators to work together and exchange ideas and information about SWM. The authority should also consider developing partnerships with the private waste sector on the base of recycling/composting commercial waste and phasing out of landfill.

8.3 Contributions

8.3.1 Contributions to theory
The study contributed an enhanced understanding of SWM issues in the context of GDES and non-GDES small hotels in Wales and the main issues confronting small hotel sector to move further up the waste hierarchy towards the implementation of more sustainable options rather than landfill. The study added to the growing SWM literature through its review of previous research, generation of new ideas and interpretation of rich data collected from different associated stakeholders in respect of SWM in small hotels. It also boosted the understanding of the potential pressure and support required to lead small hotel sector in the UK to tackle its environmental responsibility and dispose of its solid waste in non-environmentally damaging manner. Moreover, the study had provided an empirical evidence to support the uptake of EMS at the SME level to green the business and implement eco-friendly practices. On an overall basis, the study grounded the theoretical base for SWM in small hotels using a phenomenological approach which would undoubtedly help any researcher wants to investigate further in this field.
A major contribution of this study to knowledge was made by presenting a theoretical model of best practices for SWM in small hotels. The model was developed based on the key issues arisen from critically reviewing a wide range of related literature taking into consideration a number of previous models, particularly of the main concern of this research. The proposed model integrated the main components of TPB to understand hoteliers’ attitudinal and normative beliefs along with the barriers facing them to implement sustainable SWM practices (see Figure 2.12). It also emphasized the concept of the waste management hierarchy in targeting hotel solid waste streams, at source (prevention), during the production stage (minimisation) and after generation (reuse, recycle and compost) in order to reach a stage of zero-waste disposed into landfill.

Another significant contribution of this study to theory is the usage of TPB with qualitative research methods by asking open-ended questions to understand and explore more in-depth perceptions about the attitudes and behaviours of small hotel operators towards SWM issues. To date most of the studies which used TPB in social science had used quantitative methods (see Hansen and Jensen, 2007; Davis and Morgan, 2008). Furthermore, the study proved that TPB with its main components (Attitude, Subjective Norm and PBC) was still not adequate in predicting and/or understanding the behaviour of small hotels in relation to SWM. It proposed that a new motivational factor should be incorporated within the main components of the
theory to enhance its effectiveness in understanding SWM behaviours in small hotels (see Figure 7.6).

8.3.2 Contributions to practice

This thesis contributed significantly to practice by introducing a best practice model for the public sector to encourage better SWM practices in small hotels. The proposed model was formed as a result of exploring the beliefs, attitudes and opinions of small hotel owners/managers in two different case studies (GDES and non-GDES) on varied SWM issues involved in this research. It also considered the views of the executives of the public and private waste sector which their role was critical for better SWM in small hotels. The model was also sustained by the evidence revealed in the literature. The proposed model will serve as an effective tool to assist small hotel operators to manage their solid waste effectively and incorporate all the options listed in the waste management hierarchy in handling hotel solid waste streams. It covered seven main steps which were essential to optimize SWM practices in small hotels (see Figure 7.4).

The proposed model emphasized the strong government involvement in supporting, incentivizing and pressurizing small hotel owners/managers to consider their environmental responsibility and use the waste management hierarchy as a guiding principle in handling hotel solid waste streams. It also underlined the potential role of the government in relation to networking small hotels, developing an effective national PTB system and forcing or
encouraging manufacturers to consider producing clearly labelled-green products at accessible prices to support small hotels manage their solid waste sustainably. Moreover, the model stressed the potential role of the contracted waste carrier either the public or the private waste sector to work with small hotel operators and assist them to move further up the waste hierarchy towards applying all the sustainable options in handling hotel solid waste streams.

Another significant contribution of the thesis to practice was that it introduced an input/output process model which could provide the way forward to implement sustainable SWM practices by the public and private waste sector (see Figure 6.7). The successful implementation of the proposed model will undoubtedly have its positive effect on SWM practices in small hotels. The model had emphasized the ultimate role of the government in supporting and pressurizing public and private waste carriers to handle commercial waste streams sustainably. Initially, the government should provide an appropriate support focusing on providing waste transfer stations; processing plants; composting plants; recyclable markets; awareness and education. Afterwards, the government should involve and drive those waste carriers, particularly smaller ones, who were just not interested to stop landfilling by continuously increasing the landfill tax, enacting legislation for recycling and also imposing stringent recycling/composting targets for public and private waste carriers alike.
Indeed, both models developed in this study are going to contribute to the Welsh and the UK’s waste strategy and assist partially in achieving the national recycling and composting targets imposed by the European parliament on the base of small hotel sector if they are properly implemented. These models can also be applied specifically in other countries which undertake landfill as a primary SWM strategy and plan to phase out of landfill. They can be updated and new elements can be added to suit different countries’ context.

8.4 Limitation of the research

Generally, getting an access to the primary sources of data is not an easy task for any researcher and specifically accessing small hotels in Wales to investigate the area of SWM is very difficult. Many small hotel operators were not interested at all to serve such research purpose. However, achieving a response rate of 41% and 60% for the first and second case study of small hotels respectively is undoubtedly a satisfactory result particularly in qualitative research. The research is limited to study SWM issues in small Welsh hotels. Although it is based on choosing two representative case studies in addition to obtaining such higher response rate cautions must be taken into account when generalising the findings of this research to other incidents as generalisation in qualitative research still an area of great debate.
Much of the results of this study were based on the interviewees’ perception and attitudes which might not reflect the reality. To identify the real beliefs and attitudes of small hotel owners/managers particularly in such environmental study are very difficult process as the respondent may show concern and demonstrate favourable attitudes towards the behaviour mainly for ethical reasons while, in fact, internally refusing it. Therefore, the researcher tried to overcome this problem using much of cross-linked questions which were successful to a large extent in revealing the accurate attitudes of hoteliers towards varied SWM issues. In addition, some hoteliers were re-interviewed after they had the recycling service from the local authority to identify if any alteration had been made to their SWM behaviour.

The research had some limitations because of the data. There is still a great ambiguity in the literature on a definition of small hotels using number of rooms or employees as the measure for classification. For the current study, small hotels selected as those having 30 rooms or less to enlarge the research boundary and involve a large number of small hotels as the research was going to serve environmental reasons which were rigorously required, particularly in Wales. It was also difficult to identify the type of the hotel operation from its name as hoteliers use the terms of small hotel, B&B and guest house interchangeably for marketing purposes. For instance, one of the hotels was registered on the website as a small hotel and on another webpage as a guest house while the actual sign of the hotel referred to B&B. Thus, all hoteliers interviewed were asked about the type and nature of the
business to avoid any miss-leading as the study focused only on small hotels. Moreover, there was a considerable problem within the online marketing sources of the data which were not updated with the latest information about small hotels. For instance, some hotels were closed down and others changed the nature of the business however their details remained on the website as being hotels.

8.5 Opportunities for further research

The study is quite complex and comprehensively explored a wide range of issues surrounding SWM not only in the context of GDES and non-GDES small hotels in Wales but also involved other associated stakeholders such as the public and private waste sector. It opens up opportunities and provides some potential research areas for future investigation. One exciting area for further research is to build on this thesis and subject the results for critical comparisons via investigating the issue of SWM in different situations. For instance, focusing on the hotel sector in some other European countries which have an effective SWM system in comparison to the UK’s system or focusing on the hotel sector in developing countries such as Egypt, determining how far SWM practices differ than those identified in the present study, the extent of applying the waste management hierarchy in handling solid waste streams and assessing the government support.

Future research could use the developed model of SWM as a tool to improve, evaluate and measure the success of SWM practises in the hotel
sector. The model can be used in its present design or can be further modified to meet different businesses and countries context. This thesis highlighted that customers and staff represented the key players in the hotel’s SWM programme. Nevertheless, it did not explore the opinions and attitudes of the customers and staff themselves. This could provide an opportunity for further research to investigate in-depth customers and staff’s views and attitudes towards taking part in the hotel’s SWM programme and possibly focusing on identifying whether customers would prioritize those green hotels which undertook responsible SWM practices rather than non-green hotels.

The study used qualitative methods to explore in-depth SWM issues in small hotels and assess the effect of other associated stakeholders (e.g. public and private waste sector and Arena Network Organisation). Perhaps another possible area for further research is to investigate SWM practices focusing on larger hotels across the UK and using another methodology, particularly survey method to cover larger populations. This may explore new issues facing the hotel sector in terms of SWM. Also, this study used TPB with qualitative research methods to explore hoteliers’ attitudinal, normative and control-based beliefs regarding different SWM behaviours. Possibly, further research can use the TPB model with quantitative research by using hoteliers’ positive and negative statements towards the implementation of more sustainable SWM practices, along with the main issues arisen in this study to build up a comprehensive attitude questionnaire to assess hoteliers’
attitudes regarding varied SWM issues. This will give the opportunity to survey a large population and thus enhance the potential for generalization.

Moreover, the study highlighted that the UK government had a strategy to increase the landfill tax by 3% every April. Future research is important to assess the effectiveness of the landfill tax rising in influencing the behaviour of small hotel operators and also the private waste sector, particularly small waste haulers, to stop landfilling. Likewise, the findings revealed a great deficiency in the quality of GDES in relation to the marketing side, the support available and also certifying and monitoring procedures which could be a subject for future research to explore in-depth different avenues to enhance the quality of the standard and thus making it a real opportunity to support the hotel sector undertaking environmentally-friendly practices.

8.6 Personal reflections

This thesis is the outcome of a four-year PhD research study attempting to identify the challenges of implementing sustainable SWM practices in the context of small Welsh hotels. It is my aspiration that the developed best practice model for SWM in small hotels, in addition to the proposed model for influencing the public and private sector’s SWM operations, will inform solutions for implementing appropriate SWM practices specifically in the Welsh small hotel sector and help in resolving SWM problem in the UK. I hope also that this study through its rich data will provide a valuable source
for those who will carry on undertaking further research in the field of SWM in the hotel sector.

This research has really added to my knowledge and contributes effectively in developing my research’s ability and skills. It gives me the opportunity to explore an area of research and issues which I am sure that so many researchers are not interested in. During the research journey, I have acquired and explored issues which I find interesting, especially those that came up while developing the model, conducting the interviews with the different associated stakeholders and the search for appropriate methodology and theoretical perspective. At the beginning of my research, I adopted very much bottom-up approach to the study, selecting qualitative research methods that fit the scope of the study but while the research was going I had enriched my experience and understanding of the research process. I have now been able to adopt a more holistic approach to the research design recognizing epistemological and methodological issues. I am eager to share the experience which I have gained through the development of this thesis and also my knowledge with the research process itself and the system of conducting and supervising research students in UWIC with my colleagues and students when I return back to my position as a staff member in the Faculty of Tourism and Hotels in Suez Canal University in Egypt.
APPENDICES:

Appendix 1  A fax letter to small hotel owners/managers
Appendix 2  E-mail to local authority’s waste management officers
Appendix 3  Interview schedule for small hotel owners/managers
Appendix 4  Interview schedule for local authority’s waste management officers
Appendix 5  Interview schedule for private sector’s waste carriers
Appendix 6  Interview schedule for small hotels committee to GDES
Appendix 7  Interview schedule for Arena network’s officials
Appendix 8  Interview schedule for small hotel owners/managers after 18 months
Appendix 9  Interview pattern with a small hotel owner
Appendix 1: A fax letter to small hotel owners/managers

Dear Mr/Mrs

My name is Hatem Radwan, a PhD research student at Welsh School of Hospitality, Tourism and Leisure Management, UWIC University, Cardiff, UK. I am currently undertaking a study sponsored by the Egyptian Education and Culture Bureau into solid waste management as an aspect of the environmental management of hotels. The main aim of my research is to provide recommendations to help small hotels manage their solid waste effectively. In my research I intend to hold interviews with hotel managers as part of a case study of small hotels in the locality to explore their solid waste management practices and the challenges facing hoteliers to minimise or recycle their waste. All respondents will have access to my findings should they wish. It would also be helpful in order to reach the overall aim of the study if I could have a copy of the hotel waste records and have permission to take some photographs around the waste bin storage areas of the hotel but I will understand should you not be able to help me with these two matters.

I will contact you in the next 24 hours by telephone to see if you will grant me an interview and if appropriate to arrange a time to meet with you.

Kind regards,

Hatem Radwan

PhD Research Student
Cardiff School of Management
UWIC University
E-mail: H.R.Radwan@uwic.ac.uk

Tel: 02920416425 ext: 7152/ 7147
Mobile: 07890939811
Appendix 2: E mail to local authority’s waste management officers

Dear Sir/Madam

As a part of my research to understand how small hotels in the locality can manage their waste effectively, I have completed 9 interviews with the owner/managers of small hotels (less than 30 rooms) and I have some interesting results. It becomes apparent that the Council, as a local waste collecting authority, plays a very important role in supporting small hotels to cut, reduce or recycle their waste. Therefore, I have developed a list of questions that I would like to put to council officials who are working with the commercial sector in the city. I attached a schedule of the questions and I would like to ask please can you advise how I could arrange to meet with potential respondents?

Would it also be possible to develop a more formal partnership between UWIC and the Council on the question of how waste produced by small hotels in the city could be better managed? Perhaps you can give some thoughts to how such a partnership might be established.

Kind regards,
Hatem Radwan

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UWIC University
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Tel: 02920416425 ext: 7152/ 7147
Mobile: 07890939811
Appendix 3: Interview schedule for small hotel owners/managers

Section 1. Solid waste in your hotel
1.1 What is the real value of the waste mean to you?
1.2 How much waste does the hotel produce per week/category?
1.3 Does the hotel have a written plan or procedure on how you manage your solid waste? If yes, tell me about the targets of this plan
1.4 How can the hotel measure the effectiveness in managing solid waste? How frequently is such measurement performed?
1.5 Does the hotel maintain records of waste generation and disposal routes and costs? Are these records present any difference in the waste generation in the last three years? Why?
1.6 How do you comply with the waste legislation?

Section 2. Waste prevention & minimisation
2.1 Has the hotel assessed the possibilities for minimising waste generation? What are the practices adopted to reduce the quantities of solid waste generated? How much?
2.2 Does the hotel currently have green purchasing policy? What are the considerations taken into account in making any purchasing to the hotel?
2.3 Do you ask guests to minimise their solid waste? What are their attitudes towards waste minimisation?

Section 3. Waste recycling & reusing
3.1 What does recycling mean to you?
3.2 Does the hotel have a recycling program? If yes, what materials do you recycle? How much recycling is carried out by each type?
3.3 How do you recycle?
3.4 What are the reasons for implementing a recycling program?
3.5 What are the obstacles facing you in recycling?
3.6 If no, is the hotel willing to recycle? Why/why not?
3.7 Do you consider reusing solid waste materials? Why/why not?

Section 4. Waste disposal
4.1 How do you dispose hotel waste? Residual and food waste?
4.2 How do you store the waste until disposing?
4.3 Does the hotel contract with the local council or with a private waste company? On which measures would the hotel make a decision?
4.4 Do contractors recycle some of the hotel waste? If so, what benefit does it provide?
4.5 How much does it cost you to have your waste uplifted per year? How do you control disposal costs?
Section 5. Staff attitudes

5.1 What kind of incentives could be given to employees to cut waste at sources or encourage better source separation?

5.2 Do you provide regular employee training to promote waste prevention, reuse, recycling and resource conservation? Tell me about these training courses.

Section 6. Motivation & support

6.1 What could influence small hotels to undertake sustainable solid waste practices?

6.2 What should the council do to encourage small hotels to reduce and recycle their waste?

6.3 What are the current weaknesses in the local council waste services?
Appendix 4: Interview schedule for local authority’s waste management officers

Section 1. Waste minimisation and reduction activities

1.1 Does the unitary authority currently have a recycling plan for commercial wastes? If yes, tell me about the targets, the schemes, and the recycling system offered for businesses. If not, why not?
1.2 I have been investigating how small hospitality businesses, less than 30 rooms, manage their waste, how would you classify these businesses?
1.3 The waste produced by these small hospitality businesses is largely domestic type waste and yet they seem unable to take advantage of the new waste separation system for residents of the city. Why?
1.4 Does the county provide any encourage to small businesses in the city to recycle their waste? If yes, what? If not, why not?
1.5 Does the council provide any help to educate businesses on how to make composting? If yes, tell me about it? If not, why not?
1.6 Does the Local Authority have any plans to cut businesses’ waste at source? If yes, tell me about the current practices for educating businesses to make green-purchasing or the possibility for reusing waste materials. If not, why not?

Section 2 Commercial waste collection/recycling

2.1 What factors influence the process of collecting and recycling waste from businesses?
2.2 What are the constraints that might limit the local authority’s ability to collect and recycle waste from small businesses?
2.3 Does the Local Authority have any plans to overcome these constraints? If yes, How do you think these constraints could be overcome in the future? If no, why not?
2.4 To which extent does the County Council control the private sector’s waste collection industry? Is there any coordination, beyond the legal requirements, between the council and the private sector in terms of reducing and recycling small businesses’ waste?

Section 3. Waste disposal charge

3.1 If a small business contracts the council to collect its waste then, How do you calculate the charges made?
3.2 How effectively do current charges influence small businesses behaviours in managing their waste?
3.3 What are the measures that control the level of charging?
Section 4. Future plans to the council's waste strategy

4.1 What future plans does the council have for waste strategy and commercial businesses?
4.2 In your opinion, what adjustments should take place in order to reach small businesses?
4.3 In your opinion, could the local authority use waste legislation to control small businesses behaviour? If yes, how?
4.4 What do you think of the idea that the council might lead an initiative that would encourage some cooperation between small businesses located around the same streets leading to a localised waste separation system prior to collection?
4.5 Would you be interested in working in partnership with the Cardiff School of Management (CSM) on the matter of small hospitality businesses and waste management?
4.6 I would like to speak to representatives of the commercial waste industry who are active in the city. Can you provide me with any contact names so that I could arrange to meet them?
Appendices

Appendix 5: Interview schedule for private sector's waste carriers

Section 1. The private sector and commercial waste collection

1.1 Does the company deal with any small hospitality businesses in the locality to collect their waste?
   • If yes, then how does the company handle the waste produced by the small hotel sector?
   • If not, then why the company is not interested with this market (waste generated by small hotels)?
1.2 What are the schemes and the facilities that the company provides to collect waste from the commercial sector?
1.3 How do you charge businesses?
1.4 Does the company keep records on the waste collected from commercial businesses? If so, then how do you categorise these records?

Section 2. Waste disposal

2.1 What are the methods which the company use in disposing of the collected waste? If the company relies on more than one method in disposing of the collected waste then:
   • Can you tell me more about the implemented methods?
   • What proportion of waste sent for landfill, incineration or EfW, composting, and recycling?
2.2 How effectively is the landfill tax in encouraging the company to divert waste from landfill into recovery and recycling?
2.4 In your opinion, what would encourage the private waste sector to move up the hierarchy?
2.5 Where does the company landfill waste materials?

Section 3. Waste minimisation and recycling

3.1 Does your company currently have any goals or policies to help businesses reduce their waste? If so, can you please tell me about these targets? If not, why not?
3.2 If the company has a recycling scheme then:
   • Does the company provide any kind of support to businesses in order to recycle waste? If yes, what are the incentives provided?
   • Where is the material taken for recycling? (Operating MRF, Recycling Centre or Local authority)
Appendices

• What materials does the company recycle? Why the company focuses only on recycling these waste streams and not providing a complete packaging of recycling?
• What are the motivations beyond the implementation of the recycling system?

3.3 If the company does not make any recycling or just recycle a specific waste stream then, what are the obstacles for recycling all businesses’ waste?

3.4 Does the company run a composting plant? If yes, tell me please about it? If not, then:
• How does the company handle all food, green and organic waste?
• What are the challenges for making composting?

Section 4. Working in liaison with businesses and local authorities

4.1 Does the company work in liaison with the customers or with other private waste companies on behalf of environmentally disposal of solid waste? If not, why not?
4.2 Does the company work in a partnership with the local authority on the matter of commercial sector and sustainable waste management? If not, why not?
4.3 To which extent RM-based contracts fit the company’s objectives? (RM contract is an emerging alternative to traditional disposal contracting, provides longer-term relationships with customers by creating an opportunity to provide additional environmental services).
Appendix 6: Interview schedule for small hotels committee to GDES

Section 1. About you

1- Name of the hotel: ........................................................................................................
2- Contact person (OPTIONAL). .....................................................................................
3- Age: ..............................................................................................................................
4- Position: ....................................................................................................................... 
5- Standard of the hotel: .................................................................................................
6- Age of the hotel: .......................................................................................................... 
7- No. of rooms: ..............................................................................................................
8- No. of full-time staff ...................... Part-time/ ......................

Section 2. Achieving GDES Level Two

1- Does your hotel have written environmental policy? If yes, can you please tell me more about the hotel's environmental policy? What are the targets of that policy? Why it is not registered in the hotel's website?
2- How did the hotel achieve GDES Level Two? What are the environmental practices undertaken?
3- Does the hotel employ someone with sole responsibility for environmental issues? If yes, tell me more about his responsibilities?
4- What are the negative impacts does your operation cause to the environment?
5- Has your hotel conducted environmental audit? If yes, How often?
6- Has your hotel undertaken any measure to reduce the negative influence of the operation on the environment? If yes, please specify?

Section 3. Drivers for achieving GDES

1- What motivate the hotel to achieve GDES?
2- Does the standard save the hotel money? If yes, please explain
3- What are the attitudes of customers towards green hotels? Do you think that customers prefer to stay in hotels that show concern for the environment?
4- What are the main characteristics used for marketing to the hotel? Does the environmental attribute considered in marketing to the hotel? If yes, please explain
5- How do you see the importance of adopting environmental practices?
6- Have you ever measured the effectiveness of the environmental performance of your hotel? If yes, How?

Section 4. Aspiration to benchmark with higher levels of GDES

1- Does your hotel have any intention to progress further to achieve Level Three? If not, why not?
2- Is it difficult for the hotel to meet the requirements of GDES Level Three? If yes, tell me more about the challenges?
3- How do you see the advantages gained from Level Three or Level Four? Is it equivalent to that of Level Two?
4- Does Level Two appropriate and adequate to assist the hotel implement environmental management? If yes, How?
5- Has your hotel considered introducing environmental management system? If not, why not?
6- Does Green Dragon organisation continuously assess the environmental performance of your hotel? If yes, how is the assessment support the hotel to progress further?

Section 5. Motivation and support

6.1 How do you know bout the techniques used for saving water, energy and reducing waste?
6.2 What are the facilities provided by GDES to support the hotel regarding green issues and specifically for SWM? Is there any positive impact of the GDES on SWM practices in the hotel? If yes, tell me more? If not, why not?
6.3 Does the hotel receive any support from the local authority to manage the hotel waste in a sustainable way? If yes, please specify
6.4 What are the services provided by the waste carriers that help the hotel reduce and recycle waste?
6.5 Does Level Two of GDES appropriate to make the hotel manage its waste in a proper way?
6.6 What are the requirements of the GDES Level Two regarding the hotel SWM?
6.7 In your opinion, what could influence small hotels to undertake sustainable SWM practices?
Appendix 7: Interview schedule for Arena network’s officials

1. How is Arena network structured? How many staff?
2. Does Arena network only do GDS?
3. What are the requirements from small hotels regarding SWM in order to certify with GDS at Level Two?
4. What more do businesses have to do with respect to SWM at Level Three and Level Four?
5. Do you think that Level Two is appropriate and sufficient to help small hotels manage their solid waste in a sustainable way and in accordance with legislative requirements?
6. Does the training for GDS at Level Two explain legislative requirements on small businesses with respect to SWM?
7. Why do most small hotels benchmarked at Level Two have no intention of achieving Level Three or Level Four?
8. Does Arena network continuously monitor businesses maintaining the standard? And what frequency and at what level of detail does monitoring take place?
10. Most of small hotels I have interviewed claimed that they had not received any support from Arena network regarding green issues?
11. Does Arena network have any responsibility for supporting non-GDES businesses regarding green issues? What level of support is provided? And to what extent small businesses respond?
12. How can non-GDES small hotels find out about the GDES? How can they start the process of accreditation?
13. What are the challenges facing Arena network in promoting GDES and providing more support to businesses?
14. Do you think that general public are aware of GDES and what it means? Do you think that businesses can use it as a marketing tool?
15. How is the GDES promoted to the general public?
16. What do you suggest would motivate and/or pressure small hotels to manage their solid waste effectively?

17. Does Arena Network work with small businesses to help them reduce and recycle their waste?

18. To what extent is GDES a paper based exercise or does it involve practical inspection of businesses environmental practices?

19. Is Arena network aware that many businesses are operating illegally and disposing of their solid waste through domestic/community recycling?

20. How can businesses disposing of their waste illegally be awarded the GDES?

21. Is there financial support to a business for doing GDES? What costs are eligible?
Appendix 8: Interview schedule for small hotel owners/managers after 18 months

1. How do you dispose of hotel waste?

2. How much does it cost you to have your waste collected? e.g. the cost of landfill and recycling

3. Does your hotel have a recycling program?
   - If yes: How do you recycle?
   - How much waste does your hotel recycle and which waste streams?
   - How much savings are achieved?
   - What motivates the hotel to recycle?
   - If No:
     - What are the barriers facing you?
     - What would motivate you to recycle?

4. Do you know that the local authority has a recycling system for commercial businesses? Has the council asked you to recycle?

5. Have you received any support from the council to help you reduce and recycle waste? If yes, please tell me more

6. Has the hotel assessed the possibilities for minimising waste generation?
   - If yes: what are the practices adopted to reduce the quantities of solid waste generated?
   - Does your hotel currently have green purchasing policy?
   - If No: what are the barriers facing you? What would motivate you to reduce waste?

7. Do you consider reusing items? If yes, please tell me more
   - If No: what are the barriers facing you? What would motivate you to reuse items?

8. Does the hotel compost organic waste? If yes, please tell me more
   - If No: What are the barriers facing you? What would motivate you to make composting?

9. Did you seek advice or information from the local council or any other environmental organisations regarding SWM?

10. What are the most factors that may enhance the hotel environmental performance?
Appendix 9: Interview pattern with a small hotel owner

Can you tell me little bit about your position and responsibilities in the hotel?
Sure, I am the general manager/owner so it’s my self, my father and my brother.

What are the facilities provided to customers?
We are 28 bedroom hotel. We have 60 seat restaurant and bar with a capacity of a hundred, a function room up here which we are sitting in with a hundred which is also used as a breakfast room. Mostly, the hotel with a busy bar and restaurant. We serve three meals a day, breakfast is upstairs but then in barJas downstairs which is our restaurant and bar there is lunch and dinner. So it is three meals a day.

How do you dispose hotel waste?
Hotel waste at the moment obviously, clinical waste is taken by company called Initial and that would be obviously ladies waste, they would also come out if there were any sort of needles or that sort of things found and they would come and collect those kinds of products. The general waste like bottle waste, we have a recycling with a firm called Green Berg. They come twice a week to collect all that bottles and glass waste. Then, general waste would be collected by the Council. At the moment, we do not recycle paper unfortunately, only there is no safe place to put it. At the moment our main bin is underneath to fire exit in a secure area but obviously the fire officers will not allow a collection of paper to be on the fire exit, so yes the County Council collects the majority of that waste.

On which measures does the hotel contract the local authority?
I think we always had, we have not really decided to go to biffa or any of those. It always was the Council. Council was here and we just continued with them.

How much does it cost you to have your waste uplifted?
I am not quite sure. I think £15 our bin daily, it is taken daily. So we virtually only fill one bin, regardless we fill it or not it is a hire of the bin and it is £15 charge. And for the glass is only £100 a year, two pounds a week, that is almost extremely fair price. The glass has been lifted by bin and collected twice a week. How do you control disposal costs? Well, that actually something that I control personally because there was a stage where the staff were not ripping boxes or were not doing certain things. So we constantly have six or seven bags on top of the bin. In the past the council used to, if you put bags in the top of the bin they would just take that away as well, now of course they do not handle that anymore. They take all of the bin and if you put bags on top, they just take that bags off, they empty the bin, they put the bags back in the bin and leave it. So, this is a stage where you have almost a full bin at the start of the day before we have not started but now I take a personal look at that you know. I mean of staff ripping boxes and
different things like that, compress as much as possible, obviously the glass recycle is very recent so that assists this as well. So, the control measures in place I mainly by me five days a week checking that has been crushed in the boxes so that we do not have any excess waste.

**How much waste does the hotel produce?**
It is one bin, I am not sure the latest size, and it is probably got to be 15 black bags daily.

**What is the real value of the waste mean to you?**
It is a cost you know, it is a heavy cost and this (cost) is going to go up constantly and I believe that they are talking about making plate waste being separated as well and different example apparently like T-bone from the steak may have to go to separate bags and different example like that. I believe that this apparently coming in. So, yes it is a serious problem, we have to look as many avenues as possible to at least control our cost, to be honest in some occasion now we do have excess waste where we would had buy so many orange bags which is produced by the council. I think you buy them at sum of £1.03 each which is almostly for the bag and that involves the collection of it you know. My staff in the past they were coming just have five of those a day just keep on top when I explain to them that was five pounds a day and over 365 day that is another £1800 on waste, almostly they were shocked by that because that is expensive. They all  believe that the council was just want the city cleaner with just collecting but obviously there is only so much waste that everyone can produce before someone says enough is enough, so yes it is a very important issue to us. We do not use many orange bags because we have to control our costs but black bags we buy them; they are not supplied by the council at all (black or orange).

**Does the hotel maintain a plan or procedure on how you mange solid waste?**
No, probably not as I say the procedure is me physically checking five days a week and if not myself then when I am in a holiday my colleague does as well and the head chef is training to do it now. Obviously, the effect if you get managed five days a week going there. The staff we fortunate enough to retain for seven years plus obviously they are switched on to do it as well and our hotel realizes that we cannot have any waste on the side or any thing like that; they have got to try and get it in that bin. So, this is not over written procedure on it (no). We keep the WTN from the council and things like that but it is not actually a staff procedure other than marking bottle bins for the bars so the staff knows that bottle bins go in there and that sort of things, so I suppose it is more verbal than written.

**Does the hotel maintain records of waste generation and disposal costs?**
It records in as much as regarding clinical waste. The clinical waste like the ladies boxes that record in as much as the firm will tell us how often they are
coming or how often they collected and so on. With regards to the council, what we do, we have WTN which we have to keep for minimum two years. We do not control anymore than checking the bill to make sure that they do not charge us for two bins or three bins or anything like that. We only have one bin as long as the cost is the same each week and then that is our way of controlling.

Have you ever thought to measure the effectiveness in managing solid waste?
Not overly you know as I say from what we can see at the moment the way that I am effectively managing it is that is keeping it to one bin if we reduce that to half a bin the council is still going to charge me for one bin. So as long as it is not going above one bin then I am comfortable. My own personal way to control it is by checking that there is no more than one bin. I mean obviously if we effectively, fantastically did it to half size of a bin and they would reduce the cost. So, there is a chance but I struggle to see how we could physically cut our waste by half in this type of unit. We have an old building has been opened here for over 200 years, this building has been going for now. So, there is a limited places otherwise we can recycle paper again will help our general waste that taken by the council but physically no way even if we try to store in the hotel I suppose the only thing that we can do on the flat roof is build a fire proof shouter may be for paper or something like that. I am not quite sure how we can do paper to be honest unless the council provides collection on a daily basis, provides a wheelie bin that could collect paper waste on a daily basis which we would like to have them one day. What can we do, I do not know almostly. A lot of guests leave things in the bedrooms they will leave rubbish bags, they will leave food cartons. So, they will leave waste in the rooms and obviously that is not too much we can control. We do use these types of paper cloth which are wipeable, so they are slightly more expensive, so at least we can get more use out of them you know we do quite a lot of things like that you know, renewable long life light bulbs and things like that. So, I know that is not to do with waste we are actively trying to use things which last bit longer. So, I do not know what else it can be done.

Can you tell me about your concept of waste legislation?
Well, as I say I think the only concept I have on more recent things, this plate waste this has to be done shortly, I am not sure when they bring that in but I believe they are making legislation that any food kind waste because of B.S.E. (disease happened in cows in this country a few years ago and make lots of people worried about eating beef) or different things like that would have to have different storage and different ways of disposal and above from that is the legislation. Well, we get updated as much as we can, as I say personally there should be bins provided by the council for glass because is not at the moment we have to go to different companies and it should be provided by the council, paper is not at the moment as well. We had enquired by the council and they told us that it was six month away. So, it is quite surprising that we do not have a lot of recycled things. So, legislation over
about that you know, it certainly has not effected us and you know as I say whether is going to change in a couple of years because obviously everybody is talking about the amount that everyone is producing and you cannot keep producing so much. So, on the same token we have got to find an answer and I am not sure of the answer.

**How do you comply with the waste legislation?**
We would not allowed to just employ anybody to come and pick our rubbish we have to employ people who are licensed and correctly throw of course otherwise they can just go and tip it anywhere and charges us for it. So, as I say we do get our WTN which we legally have to keep for the council; that says that they are legally bound; they do collect and dispose in a responsible manner.

**What does recycling mean to you?**
Reusing to be honest reuse of something to us, at the moment is glass as I say and we would love to be able to do paper but there is no way to do it. We do not really have a great deal of tins like cups and cans or anything like that to be honest really. Yes, glass which we start doing as I say we also encourage laundry we have signs in rooms asking people to reuse or recycle towels if they can do if they want them change to put them in specific place.

**Whether the local council invited or asked the hotel to recycle?**
No, as I said earlier the council from my last conversation with them which may be a few months ago they still were not able to running to do commercial recycling though. I might be wrong on that now but certainly the last one I ask my details to be put on their database and I have certainly not had a phone call, so the last conversation I had with them that they were getting used to do domestic waste and domestic recycling to be outside the houses but for commercial waste they still have not got a system. So, that is why we have gone out to a different company for glass.

**What are the reasons or the motivations for making recycling?**
A few reasons, one of course, the council do not do it but a part from that I think we all changed now and we realise that we should be recycling as much as possible at home or in work or whatever we can that should be doing; that makes a perfect sense. So, that is our main concern with the waste and then of course I suppose equally as important 50-50 obviously can control the cost you can take three or four bags out of the bin then we can fit three or four bags full waste or whatever exactly. We only fill in one bin so that is not producing extra waste.

**What are the obstacles facing you in recycling?**
We do recycle glass anyway our biggest problem for recycling paper, cups, tins and anything like that is the fact that we do not have store somewhere safe to store them. *Separation of the waste?* I am sure it is difficult but it would be a minor obstacle, I am sure it is a one that we could overcome, you know. I am sure the staff, it might be a bit of a pain up first but I am sure that
we could overcome it. No space to put different bins? Yes, that is a major obstacle, that is a big obstacle. Basically, at the moment we do have waste paper and things like that goes into the main bin which is fire protected underneath a certain area; there is no where else for us to put that we cannot put another bin or anything like that. There is no more in there at all, so rustications of where that put second bin is the reason why we are not doing that at the moment because there is no way to put another bin for it. Providing little waste services? I am not aware of them that they provide any recycling services at all to commercial accommodation, I have not checked again recently but I did ask to be put in on a database whether they have and then they certainly have not contacted me yet. But since the last call I had with them they are not able running to collect commercial recycling. Costly to make recycling? No, I think if it is anything like the glass then I think it will be better for us because obviously if we get a lot of waste been recycling that just two pounds a week then it is going to reduce the amount we put in our main bin. So, no I would say it would save; the cost will be reduced if we were able to recycle. No time for making recycling? I suppose it could be a minor obstacle, of course we are small businesses and we try to make money and obviously if staff have to start separating things here in there; I think in general that would be a minor obstacle. I am sure we could overcome that but I know it is mean that it is obviously we want the staff to get the rooms done as fast as possible. Obviously, to do it properly, of course if they are putting things in different bags, it is going to slow them up a little bit but I think we could overcome it.

Do you consider reusing waste materials?
No, we certainly would not,

Have you ever thought to reduce hotel waste?
As I say in the past probably twelve months ago the council used to take whatever on top but now they would not. I suppose you could say that makes us managing better because they say no we take one bin and that is it you know. If you produce anymore then you have to get pay for it by using orange bags or by having a second bin or whatever. So, I suppose that makes us managing better indirectly without actually speaking to us about it. They have never come and spoken to us about it or send us a letter or anything but the fact that they do not take any extra waste this is making us managing better because it is not a situation we cannot have a full bin at the start of the day because it kept underneath the fire exit protected but if you then produce another eight or nine bags in top then where can we put that, they left in the kitchen which just someone is going to full or put it under the fire exit which that is potentially dangerous. So, it is something that we cannot allowed to have in the building. So, I suppose by doing that indirectly they forced us to mange our waste because we can have the staff aware that they cannot have five bags on the side, all has to go into the bin. So, they did not actually come or send us any literature. Honestly I do not know much about how to recycle paper; how we could reduce it too much more you know. Our chefs are working on a GP (Gross Percentage), they do get a bonus with GP. So,
when you are talking about cooking less food and exactly they do have to achieve a percentage of gross percentage profit on their food. I think our waste is certainly to a minimum with regards to over-cooking. I am fairly confident that the waste is fairly minimum from people eating because obviously if we were not, if people were leaving lots of food then we would not be doing very good job. So, I do not think people leave anything. I think we reduce our waste as much as possible.

**What are the considerations taken into account when you make any purchasing to the hotel?**

We do not believe in buying cheap products for bedrooms or anything like that, we do not believe in buying domestic products to go in a commercial property for instance, we would not do that. So, we would not encourage just to buy things that would be thrown away quickly. We would be looking to buy things that would last a lot longer although it would be more expensive. We employ a maintenance manager to try and fix things and you know is not a case of you want things to be binned even these days apparently it is a cheaper to buy a new one but to be fair we are trying to maintain and keep our current TV system, so all the rooms look the same. So, we do trying limited things that way. **Are there any environmental considerations you take into account when you make any purchases to the hotel?** I think that is coming a new now, I think perhaps may be more responsive to that not to the hotel but to my own expenses, you are going to electrical stores now and you see different graded wash machines or energy efficient and is me aware of that and yes I will probably take that into a part of a decided practices of what we bought, some of that on my own mind but not as a director of the hotel but just as my own personal level.

**What do you think of taking packages back to the producer?**

Yes, that goes back as well to the beer and soft drinks company as I say I am shocked at the moment I will ask few years that they just make all glasses, empty bottles that you know they throw the plastic because plastic crate you have to send it back and then they reuse the bottles, they do not at all now. We used to send it back to reduce our. **From the hotel’s point of view is it possible to take these packages to the original producers?** No, I would not, I am not aware that any company I mean we were buying from brake brothers company if we open up the chips and given them the box back I do not know I imagine if they would unless they have someone come around and collect, certainly they would not be having the advantages to drive and it is not alike it is a local premises, brake brother I think it is Bristol. So, no it would not be a case that we could store boxes and then we drive to Bristol and I am quite sure they would not collect them up, they would not be pleased a full of deliveries and I am sure they are not start taking back empty boxes.

**Have you ever thought to make composting?**

No, I have never got any advice to do it or how and where to do it in this type of business, but are you willing to do it? Yeah, if someone could show me
how to do it, until I just have your question I have never come across anybody trying to advice us.

**Do you ask guests to reduce and separate waste?**

No, *what do you think of their attitude if we ask them to reduce and separate waste?* I think it is going to be already on them I think we can put signs up and hopefully appeal to them then may be it will just a remind them or may be I just suppose when they say minimum waste they probably go and think how those two bins in the room one was paper and one was something else and then perhaps they would do it you know. It is a case as I said the towels we do encourage them to recycle them it just get the message to everybody isn’t it? I suppose whether it be guest or whether it be at home or whatever. *So, from the hotel’s point of view is it possible to put more than one bin in the room?* Yes, it is possible as I said at the moment unfortunately there is no one to style paper that would be one of the things that we could look at. If you know it is not obstacle to the staff because the customers are doing it. So, if there were a daily collection from the council of paper waste then we would use them.

**What could influence small hotels to reduce and recycle waste?**

To be honest the encouragement is the effect of our cost. The cost of the main bin would go down if we could reduce it because we could potentially get a smaller bin and a small charge. So, what is preventing us at the moment is the fact that there is no out there efficient recycling system for paper. *Increasing charges for landfill waste?* Definitely. *Competition?* I would say no, I would not say that because my competitors are doing it we would do it, if he is doing it I would like to see how he is doing it and I would like to do it. I do no know whether I can get the message over to the customers to make them aware that we are doing it. It is interesting if the customers can get the message over. I am just not sure how can we get the message over to customers that we are doing it. So, I do not think so but possibly it is possible if someone else was doing it and was getting the message over that we are not only a nice hotel but we are responsible business. You would love to think that customers would come for that hotel and would rather compare it with your competitor. I am not sure obviously. *Legislation?* I do feel it is getting more and more and more legislation and I understand why we have lots of the council’s people come around from different walks of life to the health and safety or the food management or obviously whatever, It might be ending coming up with different directives all the time and we are just small family businesses. It is hard to continue producing all these extra things and these risk assessment and different things and every single subject got so much opinions and say that should be written down and everything should be this and this and this…etc. You enter a stage where you cannot actually run the business. Obviously, I get too much paper that actually I write down all these directives. Our hope that there is not too much legislation without at least giving us guidance you know, it cannot be legislation unless you come and tell us this is what you can do, this is what you can do. We can do something fair enough or assist in as I said by giving us good quality
recycling collection but by just putting legislation and say you have to reduce your waste by 20% it is not workable. It will not be effective unless they tell us how we reduce it. I would not surprise when they did something like that, we would go on because a lot of things were getting done at the moment and it would be a case of do it otherwise you would be fined. Businesses, they would just not last the pace because of all these different things that people had to do or they will unfortunately go passed because there is more and more legislation, however as I say I do understand it. I understand what the legislation is. It is trying to protect us and insurance from paying stupid claims because people have not decided that this is the way to go through. Legislation will only be effective either give us an option or give us some guidance. Social responsibility? Yeah, definitely that is why I am taking an active role in managing it personally. It is not just the cost but I believe that socially. The social effect certainly something that I believe in. It has to be something that managed effectively across the city.

What should the council do to encourage small hotels to reduce and recycle waste?
Certainly, I need more recycling services as I said earlier I am not aware of the council doing any recycling services (glass or paper) for commercial properties that is a first and foremost, something I said earlier, so that is the virtually only contribution to your question is good quality recycling/reduction services. If they did that then I am sure you know I am certain we could half our actual normal waste if we could recycle products on a daily basis or at worst every two days; we could get rid of glass and paper every two days. It is still the same amount producing you know what I mean but it would be a less because some of these will get a recycled. Providing more recyclable collection? Super, Providing awareness and education to businesses? I think so to bigger businesses. Nobody has ever come to me from the council and said look you know, you need to start recycling these products as you say if someone started to come and say it, but I think the reason they have because they cannot follow it up an effective services. I do not suppose they can ever put any legislation in, until they have got the service. We certainly provide awareness to our staff. Providing incentives? Yeah, definitely, of course, we would do our best. I am not sure the council provide incentives perhaps the council should provide force for the very big companies like producer of different bottles of beer; they should perhaps forcing them to collect them again. For us as I say controlling our waste is already incentive. So, you know if we control that we do not pay much for the bin. At the moment, as I said the bin is fixed cost but if we ever do any extra stuff; we are buying these orange bags that £1.03 a bag; even if we only use 200 bags a year still £200 cost just on rubbish just on one thing. It is a lot of money and you know gas and electric going up many thousands of pounds, so we have to attempt to reduce. Providing more recycling points? Yeah, certainly, I mean it would have to be local and it would have to be difficult in the city centre I would think. It is not a something that we could; you cannot unload outside the hotel really. It would not be practical for me four days a week taking some bags in my car and then drive it to some point; it is something
that could be happen everyday. It would be a nice thought but I do not think it could be happen. In the city centre, it must be difficult but suppose to have storage bins somewhere. I would certainly quite happy sending my staff out, if it took them five minutes walk to take three or four bags.

**Have you ever though to ask the council to charge you by volume or by weight rather than just having a fixed charge (by the bin)?**

No, I have never thought about it; I am not aware. I do not think the council will allow us to do that. I love to check on other firms if they do. The council gives you the bin and then they charge you by the bin. I am certainly aware that we do fill a bin every time you know we have never a half bin. It is always just about to the top and may be if one day we produce too extra bags then we hold them back to the next day. Certainly, it is not something (volume or weight) that the council offered anyway.

**Can you tell me about staff attitude for reducing and separating waste?**

Well, I think they been quite good regarding the glass. I think to be fair they are very decent people and they can see that in the past when we threw away so much glass, it was something wrong. So, I think they certainly be receptive to putting glass in different bins. With regards to managing the rest of the waste, of curse it is a pain of them. In the past some of them would not be ripping the boxes so they would be going in the bin and the bin would be full by 2:00 o’clock in the afternoon but only because they have not ripping the boxes. They have not compressed it. So, I think because of that they used to produce more and more waste and the bin would be full and never be around the place and that is why I am checking daily. They know that they have to ripping the boxes; they know if they can help not to produce waste, for example by compressing the waste in the bin. It is a little bit more work for them, so certainly I believe that now after a few months they cannot produce waste and if it is generated; they do some effort to control it.

**What kind of incentives that could be given to staff to encourage them to reduce and recycle waste?**

As a small family business I do not think we will be looking to give any incentives. If I said to my staff produce less and we can look an incentive, at the end I still have to give them a directive, I have to tell them how they produce less. As I say for instances, what is left in the bedroom is totally out of their control you know, yes we can try encouraging guests to be more sense but if they leave rubbish that totally out of staff control. With regards to the bar, if someone wants a bottle of wine we will have an empty bottle which gladly now can be recycling. They need guidance not incentives to be able to reduce the waste. Obviously it is difficult to give incentive. As I said if we have a good service for collecting recyclable then we will have to look an incentive and that is what I say we would hope the council would pass an incentive and we would pass to our staff. At the moment, there is no a recycling system in place. I am sure if the staff will be encouraged with a slight incentive to separate products in different bags and make them more aware with the environment, of course if there is incentive; there will be more
interested definitely yeah, but again we do not have the service to be able to do that.

What do you think of networking small hotels to separate their waste together or share information about SWM?
Yeah, it could work, of course we are a member of the Hotel Association and every month we got 20-25 of the top hotels in the city meeting and discuss different things. I am sure that could be a topic if they brought up. They could collectively agree or collectively say why this firms are good firms for collecting this and this and this firm for collecting that. Obviously, not acting like a hotel, it still has to be a legal so it has to just debate it and just give a little bit of advice perhaps of which companies are good in recycling and encouraging it and perhaps you know again the council can call award. Certainly, if the council sort of encouraging some kind of award like that for all the hotels and promoting it more, just advertise now or again or send any little sticker to put in your front window; something that says we have this hotel is committed to environmental issues, it could be helpful but again as I say it all comes back to the fact that if the services are there I am sure the majority of the hotels will respond.

Have you ever thought to deal with farmers to come and pick up food waste?
No, I got no advice on that, I have not thought about it. I am not aware that you know whether this is legal or not. If we spoke to someone and if that was legal and option I am sure we would be interested in doing it. It would be a nice idea, no one contact me. I would certainly be interested to speak to farm owners. I am not quite sure if the council or the government bring a legislation to control plate waste and things like that. I would be fairly confident that this is mean you cannot then give it to animals because it goes to control any diseases I only presume that all feed that animals have, you have to know where it comes from.
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