SUSTAINABLE MANAGEMENT OF TOURIST ATTRACTIONS IN IRELAND: THE DEVELOPMENT OF A GENERIC SUSTAINABLE MANAGEMENT CHECKLIST

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Declaration

Declaration of ownership: I declare that this thesis is all my own work and that all sources used have been acknowledged.

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Abstract

This thesis centres on the analysis of the sustainable management of visitor attractions in Ireland and the development of a tool to aid attraction managers to becoming sustainable tourism businesses. Attractions can be the focal point of a destination and it is important that they are sustainably managed to maintain future business. Fáilte Ireland has written an overview of the attractions sector in Ireland and discussed how they would drive best practice in the sector. However, there have still not been any sustainable management guidelines from Fáilte Ireland for tourist attractions in Ireland.

The principal aims of this research was to assess tourism attractions in terms of water, energy, waste/recycling, monitoring, training, transportation, biodiversity, social/cultural sustainable management and economic sustainable management. A sustainable management checklist was then developed to aid attraction managers to sustainability within their attractions, thus saving money and the environment.

Findings from this research concluded that tourism attractions in Ireland are not sustainably managed and there are no guidelines, training or funding in place to support these attraction managers in the transition to sustainability. Managers of attractions are not aware or knowledgeable enough in the area of sustainability. Education and training from bodies such as Fáilte Ireland, the EPA or local county councils, is paramount for these managers if they are to sustain and carry a viable and profitable business into the future, while helping to protect the environment.

If tourism is to stimulate the economy in Ireland and provide jobs for generations to come, then tourism attractions must be developed sustainably. Cost savings are imperative for attractions in this economic climate. Once environmental action is in place, attractions can apply for certification with the hope of achieving an eco label, thus strengthening their competitive stance in the tourism destination.

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AONB	Areas of Outstanding Natural Beauty
BMS	Building Management System
CBD	Convention on Biological Diversity
CHP	Combined Heat and Power
COBA	Cost-Benefit Analysis
CSR	Corporate Social Responsibility
EC	European Commission
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMAS	Eco-Management and Audit Scheme
EMS	Environmental Management System
EPA	Environmental Protection Agency
ETB	English Tourist Board
ETC	English Tourist Council
EU	European Union
GDP	Gross Domestic Product
GEE	Golf Environment Europe
GHA	Green Hospitality Awards
GHG	Green House Gases
GIS	Geographic Information System
GNP	Gross National Product
GSTC	Global Sustainable Tourism Criteria
HVAC	Heat,Ventilation and Air-Conditioning
ISO	International Organisation for Standardisation
ITIC	Irish Tourist Industry Confederation
IUCN	International Union of Conservation of Nature
LACC	Limits of Acceptable Change
NCTE	National Centre Technology and Education
NGO	Non Governmental Organisation
NOX	Nitrogen Oxides
OECD	Organisation of Economic Co-Operation and Development
SEI	Sustainable Energy Ireland
SO2	Sulphur Dioxide
SSSI	Sites of Special Scientific Interest
TALC	Tourism Area Life Cycle
TIES	The International Ecotourism Society
TPER	Total Primary Energy Requirement
UNEP	United Nations Environmental Programme
UNEP-WCMC	World Conservation Monitoring Centre
UNFCCC	United Nations Framework Convention on Climate Change
UNESCO	United Nations Educational Scientific Cultural Organisation
UNWTO	United Nations World Tourism Organisation
WCED	World Commission on Environment and Development
WEE	Waste Electrical Electronic Equipment
WFD	Water Framework Directive
WTMA	Wet Tropics Management Authority
WTO	World Tourism Organisation
WWF	World Wildlife Fund

CHAPTER 1

INTRODUCTION

1.1 Introduction

The protection of the environment is a serious and mainstream issue. Tourism has a complex two-way relationship with the environment Holden (2008). While quality of both the natural and built environment is essential to tourism, many activities can have adverse environmental impacts. According to Fáilte Ireland (2010), common negative impacts on the environment include increased air, water and noise pollution; increased demand for energy, water resources and other natural resources; generation of waste; natural habitat destruction, increased erosion and soil degradation; pressure on wildlife and increased threat to endangered species; as well as aesthetic impacts on landscape.

Negative impacts can eventually destroy the environment which tourism highly depends on. As a tourism destination, Ireland holds an image as a green country with quality environment and beautiful landscapes. With the constantly growing emphasis worldwide on environmental issues and a green agenda, it is encouraging to see that Ireland continues to perform quite well in this regard in the eyes of our visitors. In a Fáilte Ireland visitor attitude survey (2010), a top advantage for Ireland indicated by visitors was the beautiful scenery (96%), closely followed by the friendly people (95%) and unspoilt environment (90%). While it is clear that Ireland's image of a quality environment with beautiful scenery is one of the major tourism attractions as rated 96% in satisfaction. It is important to note that there is a need for tourism that is compatible with this image, and that the tourism industry is heavily dependent upon both this perception and the environmental reality.

A structured approach by visitor attractions to managing the impact of tourism on natural assets is essential to ensure sustainability and the continued enjoyment of those assets for both tourism and recreation. In order to minimise the impacts of tourism on natural assets, attractions need useful information on which to base decisions. Yet despite their importance, many of Ireland's natural assets do not have specific management guidelines for minimising visitor impacts. Sustainable management of natural assets has many

broader advantages: helping Ireland maintain its competitive clean, green image, fulfilling national strategies, and helping the tourism industry remain profitable and effective. Exploring the current sustainable management of tourism attractions in Ireland forms the basis of this research topic.

1.2 Rationale for research intent

The primary intent of this research was to develop a generic checklist in order to manage and maintain tourism attractions in a sustainable manner. This checklist will also intend to be utilised by attraction managers in Ireland. However in order to accomplish this it was first necessary to establish what level of sustainability tourism attractions are at in Ireland and if they implement sustainable practices at any level. The research particularly focused on tourism attraction managers in Ireland.

The purpose of this research became two-fold, as it first investigated the level or any level of sustainability in tourism attractions and secondly if the tourism attraction managers would be willing to utilise a checklist which was developed from this research in order to achieve sustainability. As discussed earlier, in order to minimise the impacts of tourism on natural assets, attractions need useful information on which to base decisions. Yet despite their importance, many of Ireland's natural assets do not have specific management guidelines for minimising visitor impacts. The checklist from this research will facilitate attraction managers with such guidelines.

1.3 Aims and objectives of research

This thesis determines whether a generic checklist can be developed in order to manage and maintain tourism attractions in a sustainable manner and utilised by attraction managers. To this end the following aims were developed for this research;

1. To critically examine the current sustainability of key tourist attractions in terms of, water, energy, waste/recycling, monitoring, training, transportation, biodiversity, social/cultural sustainable management and economic sustainable management.
2. To develop a generic sustainable tourism checklist for tourism attractions which could reduce running costs and facilitate managers in converting their products to sustainable tourist attractions.

In order to achieve these aims the following objectives were developed;

(a) To conduct an in-depth analyses and review of contemporary literature on impacts of tourism at visitor attractions.

(b) To determine the extent to which managers of tourist attractions would be willing to utilise a checklist to minimise the environmental impact of tourist's attractions.

(c) To produce a checklist which attraction managers can use when planning and also in the day to day operation of the attractions to aid the transition to sustainable tourism within Ireland

With the aims and objectives for this study outlined it is necessary to discuss the importance of this research and how it will contribute to knowledge.

1.4 Importance of research and contribution to knowledge

The importance of this research project is paramount at a time when tourism has been recognised with a need to become sustainable in order to protect the environment. As an international tourism destination, Ireland is heavily reliant on its image as an unspoilt environment. As recent as in 2010, the Fáilte Ireland visitor attitude survey reported that 85% of foreign tourists polled considered Ireland to be 'a clean and environmentally green destination'. However, during this same survey, when questioned about other environmental issues such as litter, dumping and other types of pollution, the visitors were not as complimentary. It is clear that Ireland's environment is one of its key attractions to visitors from abroad, and, in the current context of rapid economic growth and development of infrastructure, that more attention than ever needs to be paid by the Irish tourism industry to the maintenance of this aspect of Ireland's attractiveness Fáilte Ireland (2010). This research will contribute to the knowledge of sustainability by producing a checklist which attraction managers can use when planning and also in the day to day operation of the attractions to aid the transition to sustainable tourism within Ireland.

It is hoped that the findings of this research will be of benefit to tourism attraction managers in Ireland and tourists not only in Ireland but globally. This can be realised through effective distribution of the findings and strategies. This research is the first baseline study of this kind and can also be used for future longitudinal studies into this area.

1.5 Irish tourism performance in 2011*

In 2011, an estimated 6.2 million overseas visitors came to Ireland, an increase of 5% on the previous year Fáilte Ireland (2011). Although visitor numbers are looking up, compared to 2010 where the level of overseas visitor numbers fell back to 1998 levels. The last two years have been undeniably tough seasons for the Irish tourism industry.

The increase of 5% with 6.2 million visitors, puts a huge strain on resources and facilities. Sustainability is paramount for Irish tourism to ensure a future for tourism. A sustainable management framework will be developed from this research to help support sustainability within visitor attractions in Ireland.

1.6 Irish tourism and sustainability

The relationship between tourism and the environment has stemmed from a long journey of controversy on whether or not tourism can be sustainable. The protection of the environment is a serious issue. In a Visitor Attitude Survey by Fáilte Ireland (2010), the element of an unspoilt environment is the fifth highest in rank of satisfaction with visitors to Ireland, with 87% of visitors rating their satisfaction with this element. Again this emphasises the importance of maintaining and enhancing environmental quality in order to continue providing this experience for visitors. While it is clear that Ireland's image of a quality environment with beautiful scenery is one of the major tourism attractions as rated 94% in satisfaction. It is important to note that there is a need for tourism that is compatible with this image, and that the tourism industry is heavily dependent upon both this perception and the environmental reality.

The checklist will help attraction managers to plan for the sustainable management of the environment in a tourism attraction context. A structured approach by visitor attractions to managing the impact of tourism on natural assets is essential to ensure sustainability and the continued enjoyment of those assets for both tourism and recreation. In order to minimise the impacts of tourism on natural assets, attractions need useful information on which to base decisions. Yet despite their importance, many of Ireland's natural assets do not have specific management guidelines for minimising visitor impacts. Sustainable management of natural assets has many broader advantages: helping Ireland maintain its

competitive clean, green image, fulfilling national strategies, and helping the tourism industry remain profitable and effective.

1.7 Tourism attractions in Ireland

According to Swarbrooke (1999) "visitor attractions are the heart of the tourism industry; they are motivators that make people want to take a trip in the first place". Therefore it is clear that visitor attractions should have a key and central role to play in the development of sustainable forms of tourism. To highlight the importance of tourism attractions to the Irish tourism industry the following table shows attendances to the ten most popular tourism attractions in Ireland in 2011*.

Table 1.1 Top ten tourism attractions in Ireland (2011).

Name of Attraction	County	2011
Guinness Storehouse	Dublin	1,025,677
Dublin Zoo	Dublin	1,000,000
National Aquatic Centre	Dublin	825,049
Cliffs of Moher Visitor Experience	Clare	809,474
The National Gallery of Ireland	Dublin	624,412
Book of Kells	Dublin	524,119
National Botanic Gardens	Dublin	501,000
National museum of Ireland - Archaelogy	Dublin	402,582
Fota Wildlife Park	Cork	390,124
St. Patricks Cathedral	Cork	362,000

Source: Adapted from Fáilte Ireland (2011).

It is clear from table 1.1 that with such high volumes of visitors at tourism attractions, this puts a huge strain on resources such as water, energy, waste and biodiversity. Visitor attractions are significantly important to the Irish tourism industry, many of which are historic landmarks and staples of Irish culture, identity and history. They generate huge visitor numbers to and within Ireland and employment within Ireland, thus generating government revenue. However visitor attractions can also generate impacts and these need to be sustainably managed. Industry guidelines for attraction managers would be essential in assisting with the sustainable management of visitor attractions. Fáilte Ireland are not doing enough in terms of sustainably managing visitor attractions, they have no guidelines for this. Guidelines have been developed for horse riding facilities, so therefore it is questionable as to why there are no guidelines for visitor attractions. Therefore it is

important to identify if there are sustainable practices at the visitor attractions to ensure that they are managed responsibly for future generations.

1.8 Chapter summary

The following is a brief summary of the various chapters within this thesis. Continuing on from this introductory chapter, chapter two gives a discussion on the various theoretical concepts surrounding tourism and sustainability. The fundamental aim of this chapter is to highlight the relevant issues concerned with the relationship between tourism and the environment and how this relationship has evolved over the years. It also highlights the importance of sustainability in tourism, which allows the research to build upon a theoretical framework for sustainable tourism management.

Chapter three discusses the management of visitor attraction impacts. The relevant theoretical concepts surrounding visitor attractions and the various possible impacts from attractions are discussed, along with how visitor attractions can be sustainably managed in order for attraction managers to help protect the environment and save money. This chapter also allows the research to build upon a theoretical framework for sustainable tourism management.

Chapter four identifies the research methods put in place for the research. It discusses and justifies the research approach and methodology in the context of the research aims and objectives. Both quantitative and qualitative methods for the collection and analysis of data were utilised. Methods of sampling, strengths and limitations are discussed, along with ethics issues in research.

Chapters five discusses the results found on research carried out on the current sustainable management of Irish visitor attractions. It discusses how visitor attractions are managing their impacts in terms of water, energy, waste, recycling, transportation, monitoring, socio-cultural and economic sustainable management. This analysis and discussion chapter also builds upon a framework for sustainable tourism management, towards the sustainable tourism management checklist designed in chapter six.

Finally chapter six will conclude the thesis on the key issues and emergent themes from the research and suggest relevant recommendations. The current level of sustainability at

tourism attractions in Ireland is reflected upon. Conclusions and recommendations are made along with the introduction of the sustainable tourism management checklist. This tool is in the form of a scoping checklist for visitor attraction managers to aid in the transition to sustainably managing their attractions. Finally, this research provides important baseline data on the knowledgeable insight of sustainability within the visitor attraction sector in Ireland for the present and the future.

*These dates and figures are the most up to date at time of print.

CHAPTER 2

TOURISM AND SUSTAINABILITY

'Sustainable tourism provides a high quality product based on, and in harmony with, a high quality natural environment. It minimises adverse impacts on local communities, our built heritage, landscapes, habitats and species while supporting social and economic prosperity' (Fáilte Ireland, 2008).

2.1 Introduction

Its over two decades since the concept of sustainability was brought to the global attention through the Brundtland Report (World Commission on Environment and Development, 1987), sustainable tourism development (STD) outcomes remain problematic and continue to evoke debate. The lack of understanding by tourism developers of the importance of natural resources is reflected in the debate that continues within tourism literature as to whether sustainable tourism outcomes are actually sustainable (Adams and Infield, 2003; Cater and Goodall, 1997; Cater and Lowman, 1994; Enriquez, Lindberg and Sproule, 1996). This chapter analyses the idea and nature of sustainability in tourism. It discusses the issues surrounding the term 'sustainable tourism' on whether it is possible or not. Theory and major models found on sustainability in tourism are assessed, reviewed and critically analysed. The relationship between tourism and the environment is discussed and the need to manage this in a sustainable manner.

2.2 The growth in mass tourism

The international tourism industry has been one of the economic success stories of the post-war period. In 1950 there were estimated to be 25 million international arrivals worldwide, while in 2009 this had increased to 880 million arrivals. UNWTO's *Tourism 2020 Vision* forecasts that international arrivals are expected to reach nearly 1.6 billion by the year 2020. Of these worldwide arrivals in 2020, 1.2 billion will be intraregional and 378 million will be long-haul travellers (UNWTO, 2010). With such huge tourist movement a sustainable approach in tourism management is necessary to preserve our environment (Flanagan, 2010; Gildea and Hanrahan, 2010; Hall and Lew, 2009; Mowforth and Munt, 2009; Holden, 2008;

Font, 2003; Hughes, 2002; Kreag, 2001). Without such an approach the future of our environment and the tourism industry is in serious jeopardy.

2.3 The relationship between tourism and the environment

The reliance of tourism on the natural and cultural resources of the environment means invariably that its development induces change which can either be positive or negative. According to Hughes (2002), tourism is popularly depicted as a kind of quasi-autonomous flow ("the golden hoard" "mass tourism", etc). Spatially this has been represented, at the global level, by a core-periphery model in which tourist flows emerge from the metropolitan centres of industrialized nations and are funnelled through staging points towards destinations on the "pleasure periphery" (Ash and Turner, 1975; Hills and Lundgren, 1977; Pearce, 1989; Prosser, 1994; Shaw and Williams, 1994). New development is forced outward from the original destination as a result of competition for land, raising its prices and general intensification (Cohen, 1978). This cumulative pattern has been given its most coherent statement in Butler's (1980), destination lifecycle thesis which proposes six stages in the evolution of a tourism area: exploration, involvement, development, consolidation, stagnation, and rejuvenation or decline.

Thus, the dominant conception is that tourism is both cumulative and cyclical. The effect of this is to create a picture of a contagious flow, which threatens to overwhelm environmental and social limits by a process of creeping incorporation. Authors such as (Britton, 1982; Mowforth and Munt, 1998), consider this to be fatal for the hosts and argue that tourism is predisposed to economic exploitation and environmental and cultural destruction (Cohen, 1987; Greenwood, 1989; Dann, 1996a; 1996b; Selwyn, 1996). Conversely, others welcome tourism for its culturally constructive contribution (Boissevain, 1996), its environmental protection (Pigram, 1980; Boo, 1990), and positive economic impact (Perry; Steagall and Woods 1994). Another author that discusses the relationship between tourism and the environment is from Holden in 2008.

Holden (2008), discusses how up until the 1960's tourism remained largely immune from environmental criticism, with the image of tourism being predominately one of an 'environmentally friendly' activity, the 'smokeless industry'. This perception was enhanced by the imagery of tourism, embracing virtues of beauty and virginity, as portrayed in landscapes of exotic beaches and mountain areas framed in sunshine. Nevertheless, there

were one or two dissenting observations about the 'smokelessness' of tourism. An example of this is the observation of the effects of increasing numbers of tourists in Europe in the 1960's, which led Mischan (1969), to write:

"Once serene and lovely towns such as Andorra and Biarritz are smothered with new hotels and the dust and roar of motorised traffic. The isles of Greece have become a sprinkling of lidos in the Aegean Sea. Delphi is ringed with shiny new hotels. In Italy the real estate man is responsible for the atrocities exemplified by the skyscraper approach to Rome seen across the Campagna, while the annual invasion of tourists has transformed once-famous resorts, Rapallo, Capri, Alassio and scores of others, before the last war no less enchanting, into so many vulgar Coney Islands."

By the 1970's people were becoming more aware and concerned over environmental issues. Questions about the environmental impacts of tourism began to be raised more widely, as tourism expanded into new geographical areas and the negative effects of its development became more obvious. Recognition of the problems that could be caused by tourism led the Organisation of Economic Co-Operation and Development (OECD) to establish in 1977 a group of experts to examine the interaction between tourism and the environment.

Negative effects on the environment from tourism such as the loss of natural landscape, pollution and the destruction of flora and fauna were already being noted. According to Dowling (1993), 1976 was a landmark year for environment – tourism debate, with a major paper by Budowski, the Director General of the IUCN, exploring the relationship between nature conservation and tourism. Budowski (1976), suggested that the relationship is particularly important when tourism is partly or totally based on values derived from nature and its resources. Budowski (1976), added that the relationship could be one of conflict, coexistence or symbiosis. Budowski stated that conflict occurs when tourism induces detrimental effects on the environment and that the two are in coexistence particularly when there is little contact and each remains in isolation.

Budowski also postulated that the environment and tourism are in symbiosis when each derives benefits from the other, that is, natural attributes are conserved whilst tourism development is attained. Budowski indicated that at that time in the 1970's, the environment-tourism relationship was in conflict. Tourism developers and conservationists were challenged by Budowski to change their attitudes and work together suggesting that this

would lead to the environment-tourism relationship becoming symbiotic. Dowling (1993), suggests that the 1970's were a decade which can be best summarized as one in which the potential conflicts of tourism and the natural environment were realized

By the 1980's, there was a subsequent rising of wider consciousness of environmental issues, including global warming, acid rain and ozone depletion. Holden (2008), also discusses how concern was also being increasingly and vociferously voiced over the depletion of the tropical rainforests of the world for agriculture and logging. The spread of mass tourism beyond the Mediterranean basin into new areas, including South-East Asia, Africa and the Caribbean, meant that this increasing focus on tourism became a form of economic development in developing countries. With economic development came concerns over environmental and cultural consequences of tourism development. Pressure groups including, Tourism Concern, the UK-based campaigning group for humane tourism development and the Ecotourism Society in the USA were established in the 1980's to promote ethically based tourism for both indigenous peoples and nature.

By the mid 1980's, the environment-tourism relationship was more understood. The relationship had embraced aspects of the three states of co-existence, conflict and symbiosis. Since then it has been argued that all three relationships exist simultaneously depending on location and issue (Hall, 1991). While the relationship in symbiosis has been viewed as 'ideal', in reality it has been largely one of conflict (Smith and Jenner, 1989). The environment-tourism relationship needs to be viewed in which both the environment and tourism are a unified whole, minimizing adverse impacts and maximising beneficial ones (Dowling, 1990). This is the essence of sustainable development which was previously advocated in a major global statement by the World Commission on Environment and Development (WCED, 1987). Entitled 'Our Common Future' and generally referred to as 'The Brundtland Report', it examined the worlds critical environmental and development problems and concluded that only through the sustainable use of environmental resources will long term economic growth be achieved (Brundtland, 1987). Hence the term 'Sustainable Development', which was brought into wider use and the concept began to shape the nature of the future debate on the environment-tourism relationship (Dowling, 1993). This discussion leads into the relationship between tourism and the environment in the 1990's.

According to Holden (2008), the 1990's brought new environmental concerns, reflecting both locally and globally. An ethical dimension was increasingly introduced into environmental campaigning over the rights of non-human life, with high-profile and sometimes violent actions taken for the liberation of animals from experimentation. Protests against road building became a central focus for environmental campaigners in Britain and other European countries, as concerns over the loss of countryside and nature grew. Green politics in Europe gained increasing recognition through democratic political routes in the 1990's.

Concerns and worries were heightened over the practices employed by farmers, with the outbreak of BSE and also over genetically modified crops. This subsequently led to an increased demand for organic produced foods. A growing number of tourists became more interested to varying degrees in the environmental aspects of tourism as green consumerism became more popular. Alternative types of tourism, including 'ecotourism' and 'sustainable tourism' became established in the tourism vernacular. Major breakthroughs occurred in the 1990's with the first United Nations Conference on Environment and Development (Earth Summit), in 1992, along with the Kyoto Agreement to control global emission agreed in 1997.

In the first decade of this century, Holden, (2008) also discusses how the term 'sustainable' has become integrated into government policy and industry's strategies. The emphasis on stakeholders' responsibilities to the natural environment has transcended beyond those of government and industry to include consumers. This is exemplified through the debate on tourisms' 'carbon footprint' and the extent to which it is deemed unethical to fly more than a certain number of times per year. The contribution of aviation to global warming received increased press coverage and airlines established carbon offset websites for voluntary donations from customers.

In this decade, global warming became an issue of global concern. The scientific community virtually united in their view that the global temperature rise is a consequence of human activities. The tourism industry and governments acknowledged that climate change will threaten the success of some tourism destinations, especially small islands susceptible to a rise in sea-level and lower altitude downhill ski resorts in which snowfall is expected to become marginal. International agreements were sought on carbon reduction schemes.

Carbon taxation was proposed by some national governments and the Kyoto agreement came into force in 2005.

In October 2008, a major step in sustainable tourism was taken with the launch at the World Conservation Congress of the Global Sustainable Tourism Criteria (GSTC). According to the GSTC (2008), the criteria comprises of a set of 37 voluntary standards representing the minimum that any tourism business should aspire to reach in order to protect and sustain the world's natural and cultural resources while ensuring tourism meets its potential as a tool for poverty alleviation. The GSTC were developed as part of an initiative led by Rainforest Alliance, the United Nations Environment Programme (UNEP), the United Nations Foundation, and the United Nations World Tourism Organization (UNWTO). Over 40 of the world's leading public, private, non-profit, and academic institutions joined together to analyze thousands of worldwide standards and engage the global community in a broad-based stakeholder consultation process. Today, the GSTC are being used by businesses and organizations around the world to better understand the complexities of sustainable tourism and to make sustainability a hallmark methodology in the way we all travel, learn, and do business. The well known Irish visitor attraction, the Guinness Storehouse in County Dublin, was awarded the first ever Sustainable Travel International (STI) Eco-Certification in Ireland. The standards from this award are aligned with the GSTC criteria. The STI's Sustainable Tourism Eco-Certification programme (STEP), was implemented over twelve months, giving the Guinness Storehouse a three star accreditation.

2.4 The relationship between the environment and tourism in Ireland

As the above discusses the relationship between tourism and the environment globally, it seems appropriate to discuss this in relation to Ireland. The relationship between tourism and the environment has stemmed from a long journey of controversy on whether or not tourism can be sustainable. The protection of the environment is a serious issue. The proposed checklist which will be developed from this research aims to assist tourism attraction managers in conducting sustainable practices for their attraction, thus helping to sustain the natural environment.

Tourism has a complex two-way relationship with the environment. While quality of both the natural and built environment is essential to tourism, many activities can have adverse environmental impacts. Common negative impacts on the environment include increased

air, water and noise pollution; increased demand for energy, water resources and other natural resources; generation of waste; natural habitat destruction, increased erosion and soil degradation; pressure on wildlife and increased threat to endangered species; as well as aesthetic impacts on landscape. Negative impacts can eventually destroy the environment which tourism highly depends on. As a tourism destination, Ireland holds an image as green country with quality environment and beautiful landscapes.

Over the past three years, holidaymakers have been asked to comment on Ireland as a clean and environmentally green destination, with results very consistent in this time span. With the constantly growing emphasis worldwide on environmental issues and a green agenda, it is encouraging to see that Ireland continues to perform quite well in this regard in the eyes of our visitors. In a rating of Ireland on destination issues survey (2011), a top advantage for Ireland indicated by visitors was the friendly hospitable people (96%), followed closely by the beautiful scenery (93%) and the natural unspoilt environment (91%). Ireland as a litter free/pollution free destination was voted by visitors at 82%. Of course, Irish natural and cultural heritage were also amongst the distinctive features listed by the foreign tourist. These figures remain relatively the same each year. Below is a figure of this survey in 2011 conducted by Fáilte Ireland;

Figure 2.1. Visitor Satisfaction, 2011*.

	2006 %	2007 %	2008 %	2009 %	**2010 %**	**2011 %**
Friendliness/Hospitality/Pace of Life						
Friendly, hospitable people	93	93	93	94	**95**	**96**
Easy, relaxed pace of life	89	86	87	88	**88**	**88**
Environment						
Beautiful scenery	96	94	94	95	**96**	**93**
Natural, unspoilt environment	89	87	87	87	**90**	**91**
Good range of natural attractions	87	83	86	85	**88**	**91**
Attractive cities/towns	81	79	80	79	**82**	**85**
Litter free/pollution free	71	69	73	70	**71**	**82**
Value/price						
Competitively priced air and sea fares	61	57	61	69	**66**	**76**
Good all round value for money	59	57	52	49	**56**	**59**

Source: Fáilte Ireland's rating of Ireland on Destination Issues Survey 2011.

*These dates and figures are the most up to date at time of print.

In Figure 2.1, the element of an unspoilt environment is the fourth highest in rank of satisfaction with visitors to Ireland, with 91% of visitors rating their satisfaction with this element. Again this emphasises the importance of maintaining and enhancing environmental quality in order to continue providing this experience for visitors. While it is clear that Ireland's image of a quality environment with beautiful scenery is one of the major tourism attractions as rated 93% in satisfaction. It is important to note that there is a need for tourism that is compatible with this image, and that the tourism industry is heavily dependent upon both this perception and the environmental reality.

The checklist will help attraction managers to plan for the sustainable management of the environment in a tourism attraction context. A structured approach by visitor attractions to managing the impact of tourism on natural assets is essential to ensure sustainability and the continued enjoyment of those assets for both tourism and recreation. In order to minimise the impacts of tourism on natural assets, attractions need useful information on which to base decisions. Yet despite their importance, many of Ireland's natural assets do not have specific management guidelines for minimising visitor impacts. Sustainable management of natural assets has many broader advantages: helping Ireland maintain its competitive clean, green image, fulfilling national strategies, and helping the tourism industry remain profitable and effective.

In its Tourism Product Development Strategy 2007-2013, Fáilte Ireland also identified the natural environment as one of its key strength and emphasized how essential it is that natural environment is preserved and protected. Globally, as stated earlier, the UNWTO introduced the twelve aims of sustainable tourism in 2008, called 'The Global Sustainable Tourism Criteria', aiming to ensure a sustainable future in tourism. The tourist attraction sector is a huge component of tourism and has an impact on the environment in many ways, including resource use, waste generation and impact on natural habitats. Therefore it also has great potential for minimizing this impact and enhancing the environment and well-being of local communities.

2.5 Tourism impacts

Over the past decades, the impacts of tourism have received increasing attention in discourses and studies on related development. The industry has a tremendous capacity for

generating growth in destination areas. On the other hand, its increasing impacts have led to a range of evident and potential problems and of environmental, social, cultural, economic, and political issues in destinations and systems, creating a need for alternative and more environment- and host-friendly practices in development, planning, and policies (Saarinen, 2006). During the 90s, the issue of sustainability entered a discourse which started to direct the economic and political structures that constitute the present larger context of the tourism system, the industry and its development (Bramwell and Lane, 1993; Mowforth and Munt, 1998). The major academic concern over its negative effects dates back at least to the 60s, however, and to the tradition of research into carrying capacity.

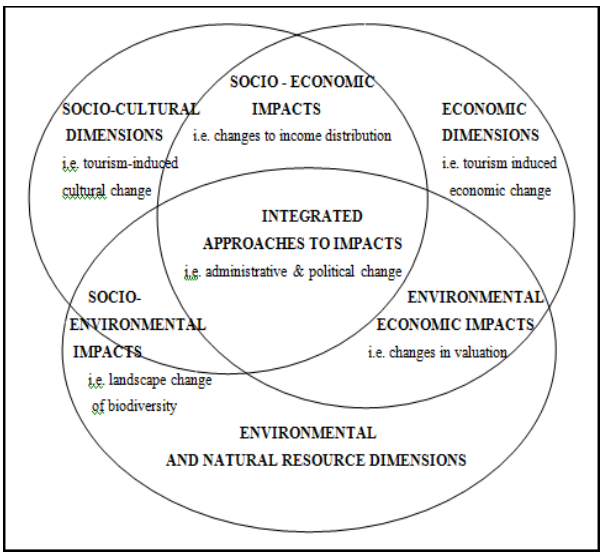
Over two decades, this idea formed a basis for approaching and managing negative impacts, but after the period of enthusiasm from the late 60s to the early 80s, it was realized that carrying capacity could be problematic both in theory and in practice (O'Reilly, 1986 and Wall, 1982). By the early 90s, this issue was largely replaced in research and development discourses by the idea of sustainable tourism. Nowadays sustainability can be linked to almost all kinds and scales of tourism activities and environments (Clarke, 1997), but there is also increasing criticism of the idea, its practices, and its usability (Fyall and Garrod, 1998; Hunter, 1995; Liu, 2003 and Sharpley, 2000). Surprisingly, many challenges outlined for sustainable tourism appear rather similar to past issues concerning carrying capacity. Therefore, it is easy to agree with Butler (1999) when he asks critically whether the current ideas and discussions of the former are anything new.

The concept of sustainability is important for understanding impacts and change and their management. According to Fáilte Ireland (2007), the economic viability and competitiveness of the Irish tourism industry can only be sustained if the quality of its resources such as; The scenic landscapes, rivers, lakes, coastline and cultural heritage are maintained. From this they developed the 'Environmental Action Plan 2007-2009', to maintain Ireland's resources and reduce tourism impacts. With the development of the checklist it aims towards a sustainable tourist attraction environment, hence will aid towards a greater understanding for tourist attraction managers on the impacts of tourism. The impacts of tourism fall into three categories; environmental, economic and socio-cultural.

2.5.1 Dimensions of Impacts

As impacts are generally referred to specific environmental, social or economic impacts, they are often approached in a combined fashion of two or three of these impacts as a tool for sustainable development. Figure 2.2 is a diagram of the dimensions of all three types of impacts combined. Hall and Lew (2009), believe that this is because tourism affects the physical environment; it effects people, communities and the broader social environment; it has economic effects; and it can be very political, especially with respect to how places both attract and manage tourism.

Figure 2.2 Dimensions of the impacts of tourism



Source: Adapted from Hall and Lew (2009).

The above figure 2.2, shows the three components of sustainability: Environmental, economic and socio-cultural dimensions. Environmental sustainability aims to maintain, unimpaired, the sink and source capacities of the biophysical environment. In other words, humankind should learn to live within the physical and biological limitations of their environment – in its role as both a provider of goods and as a sink for wastes Goodland and Daly (1996). Economic sustainability refers to the maintenance of capital as well as greater equity in the distribution of capital Goodland (1995). Social sustainability guarantees for both present and future generations an improvement of the capabilities of well-being for all through both the aspirations of equity, as intergenerational distribution of these capabilities, as well as their transmission across generations Lehtonen (2004). All three dimensions of sustainability are important for tourism Gossling et al. (2009). These three dimensions are

very important fundamental factors for the development of the sustainable management for tourist attractions.

2.6 The environmental impacts of tourism

Tourism is generally considered a "clean" industry, one that is based on hotels, restaurants, shops and attractions, instead of factories Kreag (2001). Tourism can also degrade an environment at a number of different scales. According to Hall and Lew (2009), until the end of the twentieth century, the predominant focus of tourisms effects were at the destination level. Now it is realised that travelling to and from a destination can have enormous impacts on the environment. As a result, increasing attention is being given to tourisms relationship to global environmental issues, such as climate change. Tourism can impact the environment in a number of ways and extensive literature has described the problems of deforestation, degradation of natural habitats, soil erosion, pollution, litter, disruption to wildlife, damage to vegetation and energy use (Mathieson and Wall, 1982; Karan and Mather, 1985; Salm,1986; Bacon, 1987; Edwards, 1987 ; Gartner, 1987; Miller, 1987; Hamele, 1988; Simmons, 1988; Goldman, 1989; Boo, 1990; Kovacs and Innes, 1990; Olokesusi, 1990; May, 1991; Wheatcroft, 1991; Witt, 1991; Shackley, 1994 and 1996; Marullo, 1995; Raj and McNeely, 1995; Gurung, 1998; Chand, 2000; Gurung and DeCoursey, 2000; Dieke, MacLellan and Thapa 2000). Some of these environmental impacts are shown in table 2.1.

Table 2.1 Environmental impacts of tourism

Environmental	
Negative	**Positive**
Pollution (air, water, noise, solid waste and visual)	Protection of selected natural environments or prevention of further ecological decline
Loss of natural landscape and agricultural lands to tourism development	Preservation of historic buildings and monuments
Loss of open space	Improvement of the areas appearance (visual and aesthetic)
Destruction of flora and fauna (including collection of plants, animals, rocks, coral, or artifacts by or for tourists)	A ‘clean’ industry (no smokestacks)
Degradation of landscape, historic sites and monuments	
Water shortages	
Introduction of exotic species	
Disruption of wildlife breeding cycles and behaviours	

Source:Adapted by Kreag (2001).

As can be seen in table 2.1, there are a number of positive and negative environmental impacts of tourism, with the negative outweighing the positive. The guidelines from the developed checklist will aid in tackling the negative impacts, thus promoting the positive environmental impacts of tourism.

2.6.1 Air and water

Tourism has related pollution problems that should be considered. The majority of these are related to traffic, tourist infrastructure and superstructure and the activities of tourists (Hamele, 1988). Air pollution is a result of emissions from vehicles and airplanes. Although tourism likely accounts for very little of the overall emissions problem, the issues of ozone destruction, the greenhouse effect and global warming make tourism related air pollution a concern (Wheatcroft, 1991). Most tourism related air pollution stems from vehicle traffic (Hamele, 1988). Detrimental impacts on air resources are greater in areas with high concentrations of traffic. In rural areas air pollution as a result of tourism is minimal. In congested areas, however, emissions negatively influence vegetation, soil and visibility. Although only one percent of tourism related air pollution is attributed to air travel, airlines are concerned with this problem, are aware of the need to reduce emissions, and have been working to do so (Wheatcroft, 1991). The Irish Government signed the Kyoto Protocol 10 years ago, the aim is to reduce emissions by 5% by 2012 and an agreement to a 13% limit for our pollution growth. The checklist criteria will tackle emissions from tourism attractions. Finally, heating systems of tourist-related buildings emit some polluting substances, but this is minimal relative to vehicle emissions (Hamele, 1988). Water resources are a prime attraction for tourism and recreational developments, and thus suffer impacts.

The tourism industry generally overuses water resources for hotels, swimming pools, golf courses and personal use of water by tourists. This can result in water shortages and degradation of water supplies, as well as generating a greater volume of waste water. Golf course maintenance can also deplete fresh water resources. In recent years golf tourism has increased in popularity and the number of golf courses has grown rapidly. Golf courses require an enormous amount of water every day and this can result in water scarcity. If the water comes from wells, over-pumping can cause saline intrusion into groundwater. Golf resorts are more and more often situated in or near protected areas or areas where resources are limited, exacerbating their impacts. An average golf course in a tropical country such as

Thailand needs 1500kg of chemical fertilizers, pesticides and herbicides per year and uses as much water as 60,000 rural villagers.

Water pollution is a result of waste water generated by tourist facilities and runoff, and occurs on inland lakes and streams as well as in the marine environment. Recently in Ireland in 2008, an outbreak of cryptosporidium and e-coli contaminated the water systems in Galway, forcing hotels to implement expensive water purification systems in order for the guests to do simple things such as brushing their teeth. The checklist will need to take into account the impact of visitor attractions on the usage of water and its impact on ground water, while also noting the implementation on the water works directive.

Much of the water pollution is non-point pollution such as septic tank seepage, lawn fertilizer, road oil and runoff from disturbed soil. Extra nutrients in the water system causes eutrophication of lakes and streams, which in turn influences other aquatic life. Lakes choked with weeds and beaches with algae a process accelerated by human influence, have become common in some areas (Gartner, 1987). Inadequately treated effluent or raw sewage discharged into water resources is a health hazard as well. Water pollution is an increasingly serious problem in some areas such as the Mediterranean (Mathieson and Wall, 1982). Sedimentation is an additional impact associated with tourism, a result of erosion, and thus related to deforestation and plant destruction. It is an especially large problem when tourist facilities are being constructed. Water pollution problems and sedimentation have been directly linked to near-by developments. Sedimentation reduces the clarity of water and affects aquatic life (Goldman, 1989). It can also fill in lakes and reservoirs over an extensive period of time. In addition to the water pollution problems, tourism requires above average quantities of water for washing, swimming pools, lawn water and other uses. This is particularly problematic in areas where fresh water is scarce (Hamele, 1988). The development of the checklist will aid attraction managers in the sustainable management of water use and Co2 emissions where applicable to their attraction.

2.6.2 Flora and fauna

Research looking at the impact of tourism on wildlife has focused on larger mammals and birds in natural environments. Thus, our understanding of tourism effects on wildlife is limited. Research does suggest that tourism affects wildlife in numerous ways. Development is increasingly encroaching on the habitats of numerous types of animals. For some species,

parks and preserves are now the only sanctuary. Unfortunately, for species that require large territories or engage in migratory behaviours, these relatively small areas of protected land are not enough. The impact of consumptive activities, such as hunting and trapping, are obvious. One consumptive activity, the destruction of wildlife for souvenirs, such as elephant tusks and lion-claw necklaces, is due to poaching and is a major threat to wildlife, especially in Africa (Mathieson and Wall, 1982; Olokesusi, 1990). Even non consumptive activities such as observation and photography affect wildlife.

Most of the impacts relate to behaviour disturbances among the animals as a result of the presence of tourists (Kovacs and Innes, 1990; 0lokesusi, 1990). Tourist activity has caused changes or disruption in a number of behaviours such as: predatory and feeding activities, breeding (Edwards, 1987), mother-offspring interaction (Kovacs and Innes, 1990), and other behaviours. Marine wildlife has also been seriously harmed by tourism in some areas. Disposing of waste into the marine environment, either from point sources or non-point runoff, is detrimental to sea life, especially when waste is toxic (Miller, 1987). Wildfire on coral reefs has been damaged and destroyed by trampling from scuba divers; boat anchors, chains and discharge of refuse, including cruise ships and reef walking at low tide.

Over collecting and hunting by divers for both personal and commercial purposes has also harmed reef wildlife (Boo, 1990; Salm, 1986). Perhaps one of the most notable findings for tourism managers regarding tourists' impacts on wildlife is people's behaviour affecting the extent of the impact. Groups that made modest attempts to minimise disturbance, such as walking calmly and slowly into areas containing wildlife, had discernibly less impact (Kovacs and Innes, 1990). Kovacs and Innes (1990) suggested that tourists may have less impact on wildlife if tourists are restricted during certain time periods (such as birthing seasons), and are educated about appropriate behaviour toward wildlife. Vegetation frequently serves as an attraction for tourists, notably the redwoods of California and spruce trees of the Black Hills (Mathieson and Wall, 1982). Some impacts on plant life are caused by development. Constructing buildings necessitates the removal of plant life, which negates the benefits of vegetative cover such as moisture retention and erosion prevention (01okesusi, 1990). Tourism has led to deforestation in an effort to provide for the needs of tourists, with resultant mudslides, flooding and avalanches.

In one instance, deforestation to provide ski areas for tourists resulted in substantial mudslide damage to villages in Tyrol, thus causing impacts beyond the environmental damage (Simmons, 1988). Deforestation and plant removal has also resulted from the collection of firewood (Boo, 1990; Karan and Mather, 1985), over-collecting of some species in certain areas, and forest fires (Mathieson and Wall, 1982). Trampling of vegetation by tourists on foot, on horses, in off-road vehicles, and camping has been documented in many areas. This type of impact has been found in woodlands, grasslands, on cliff tops and on beach dunes (Edwards, 1987; Karan and Mather, 1985). Trampling leads to the destruction of plant life, followed by erosion of paths and sand dune blow outs" (Edwards, 1987). Several ecological problems, such as the alteration of species composition and changes in ecological succession can occur.

Related to the impacts of tourism on wildlife and plant resources are the effects tourism has had on wetlands and estuaries. In a number of cases wetlands and estuaries have been destroyed or damaged due to tourism development. Such areas have been used for access roads, parking lots, airports, resorts, marinas sewage treatment plants or recreational facilities, for insect control, and other projects (Bacon, 1987). Because wetlands are rich in plant and animal life, not only have the wetlands themselves been destroyed, but so has the habitat. The checklist includes a section on biodiversity management and will take all of the above into account. .

2.6.3 Soil and beaches

Much of the impact that tourism has on soil and beach resources is related to the impacts previously discussed. De-vegetation causes erosion problems both with soils and beaches. Other impacts result from compaction by feet, horses, skis and vehicles. Pollution occurs from oil and lead from car exhaust (Hamele, 1988). Tourism and recreation adds to impacts on coastal areas already stressed from other types of development, such as oil refining. Negative effects that have occurred include destruction of dunes from excavation, habitat destruction water pollution and impacts on esthetics (Witt, 1991). Part of the impact tourism has on beach resources is due to the fixed nature of infrastructure and superstructure that must be developed to sustain the industry. Developments cannot adapt to environmental change, and beaches are dynamic resources.

2.6.4 Solid waste and littering

The tourism industry produces large quantities of waste products. Hotels, airlines, attractions and other related businesses that serve tourists throw away tons of garbage a year. The problem seems to be particularly troublesome in third world countries with less sophisticated solid waste management programs and technologies. Much is dealt with through open air incineration or poorly managed comporting. Exposed waste is not only aesthetically displeasing but also attracts health hazardous vermin (Olokesusi, 1990). In areas with high concentrations of tourist activities and appealing natural attractions, waste disposal is a serious problem and improper disposal can be a major despoiler of the natural environment - rivers, scenic areas, and roadsides. For example, cruise ships in the Caribbean are estimated to produce more than 70,000 tons of waste each year. Solid waste and littering can degrade the physical appearance of the water and shoreline and cause the death of marine animals.

In mountain areas, trekking tourists generate a great deal of waste. Tourists on expedition leave behind their garbage, oxygen cylinders and even camping equipment. Such practices degrade the environment with all the detritus typical of the developed world, in remote areas that have few garbage collection or disposal facilities. The Wider Caribbean Region, stretching from Florida to French Guiana, receives 63,000 port calls from ships each year, and they generate 82,000 tons of garbage. About 77% of all ship waste comes from cruise vessels. On average, passengers on a cruise ship each account for 3.5 kilograms of garbage daily - compared with the 0.8 kilograms each generated by the less well-endowed folk on shore.

Recyclable and reusable products rather than disposable, and reclamation processes need to be instituted throughout the industry (Wheatcroft, 1991). Some companies have begun to attempt to eliminate waste. For example, USAir recycles aluminium cans, donating proceeds to the Nature Conservancy and to National Public Radio for environmental education purposes (Wheatcroft, 1991). A related solid waste problem is the litter often left behind by tourists. Even human waste in areas where toilet facilities are non-existent is becoming a problem (Boo, 1990). Again the checklist has a waste management section with criteria to tackle waste consumption.

Construction of hotels, recreation and other facilities often leads to increased sewage pollution. Wastewater has polluted seas and lakes surrounding tourist attractions, damaging

the flora and fauna. According to Khopkar (2004), sewage runoff causes serious damage to coral reefs because it stimulates the growth of algae, which cover the filter-feeding corals, hindering their ability to survive. Sewage pollution threatens the health of humans and animals.

2.6.5 Aesthetic pollution

In addition to direct effects on natural resources, Witt (1991) explains how tourism development can have a negative impact on visual quality. Large, dominating resorts of disparate design can look out of place in any natural environment and may clash with the indigenous structural design. He also notes that this impact is especially noticeable in ribbon or sprawl developments along beaches or scenic byways, which are not only unattractive in themselves, but block the view for others.

2.7 The economic impacts of tourism

Tourism increases employment opportunities. Additional jobs, ranging from low-wage entry-level to high paying professional positions in management and technical fields, generate income and raise standards of living. Particularly in rural areas, the diversification created by tourism helps communities that are possibly dependent on only one industry. As tourism grows, additional opportunities are created for investment, development, and infrastructure spending. Tourism often encourages new elements to join the retail mix, increasing opportunities for shopping and adding healthy competitiveness. It often increases a community's tax revenues. Lodging and sales taxes most notably increase but additional tax revenues include air travel and other transportation taxes, business taxes, and fuel taxes. New jobs generate more income tax revenues (Britton, 1982; Mathieson and Wall, 1982; Mowforth and Munt, 1998). The following table 2.2 shows some of the economic impacts of tourism;

Table 2.2 The Economic impacts of tourism

Economic Impacts	
Negative	**Positive**
Increase price of goods and service	Contributes to income and standard of living
Increase price of land and housing	Improves local economy
Increases cost of living	Increases employment opportunities
Increases potential for imported tax	Improves investment, development and infrastructure spending
Cost for additional infrastructure (water, sewer, power, fuel, medical,etc)	Increases tax revenues
Increases road maintenance and transportation systems costs	Improves public utilities infrastructure
Seasonal tourism creates high-risk, under or unemployment issues	Improves transport infrastructure
Competition for land with other (higher value) economic uses	Increases opportunities for shopping
Profits may be exported by non-local owners	Economic impact (direct, indirect, induced spending) is widespread in the community
Jobs may pay low wages	Creates new business opportunities

Source: Adapted by Kreag (2001).

Most studies have emphasized the economic benefits to destination areas. The development of tourist facilities and recreational opportunities such as public utilities such as water, sewer, sidewalks, lighting, parking, public restrooms, litter control, and landscaping. Such improvements benefit tourists and residents alike. Likewise, tourism encourages improvements in transport infrastructure resulting in upgraded roads, airports, public transportation, and non-traditional transportation (e.g., trails). According to Cohen, (1987); Greenwood, (1989) and Stynes (1992), tourism's economic benefits are touted by the industry for a variety of reasons. Claims of tourism's economic significance give the industry greater respect among the business community, public officials, and the public in general. This often translates into decisions or public policies that are favourable to tourism. Community support is important for tourism, as it is an activity that affects the entire community. Tourism businesses depend extensively on each other as well as on other businesses, government and residents of the local community. The checklist has an element of community support and in kind contributions that the attractions should undertake.

Tourism activity also involves economic costs, including the direct costs incurred by tourism businesses, government costs for infrastructure to better serve tourists, as well as congestion and related costs borne by individuals in the community. Community decisions over tourism often involve debates between industry proponents touting tourism's economic impacts

(benefits) and detractors emphasizing tourism's costs. Sound decisions rest on a balanced and objective assessment of both benefits and costs and an understanding of who benefits from tourism and who pays for it. Tourism's economic impacts are therefore an important consideration in state, regional and community planning and economic development. When considering the economic impacts of tourism, it is essential to understand that tourism businesses often include a significant number of low-paying jobs, often at minimum wage or less. These jobs are often seasonal, causing under-employment or unemployment during off-seasons. Labour may be imported, rather than hired locally, especially if particular skills or expertise is required, or if local labour is unavailable. Some tourism-related businesses are volatile and high-risk ventures that are unsustainable (Mathieson and Wall, 1982). The following section discusses the socio-cultural impacts of tourism.

2.8 The socio-cultural impacts of tourism

When tourists visit a destination tourists interact with local residents and the outcome of their relationship are changes to the host community quality of life, the labour force, attitudes and behavioural patterns Cohen (1979). One of the social impacts of tourism is the demonstration effect which was first introduced by De Kadt in 1979. This is the main impact affecting the tourist-host relationship, it can be perceived as a positive or negative impact of tourism. Examples of this are host communities imitating the tourist's dress code, traditions, lifestyle and behavioural patterns.

This is more lightly to occur when the encounters are short lived. Other studies on socio-cultural impacts include that of Butlers lifecycle model and Doxys irritation index. Positive socio-cultural impacts of tourism include; Strengthening of Communities, tourism as a force for peace, involvement and pride, new facilities for host communities, cultural exchange, employment, rejuvenation of culture and traditions. The Negative experiences of tourists and locals are caused mostly by the lack of exposure to other Cultures. These Impacts include; social stress, culture clash, crime, sex tourism, child labour, loss of identity, including; staged culture, commoditisation, adaptation to tourist demands and standardisation. Table 2.3 show some of the social and cultural impacts of tourism;

Table 2.3 The social and cultural impacts of tourism

Social and Cultural impacts	
Negative	**Positive**
Excessive drinking, alcoholism, gambling	Improves quality of life
Increased underage drinking	Facilities meeting visitors (educational experience)
Crime, drugs, prostitution	Positive changes in values and customs
Increased smuggling	Promotes cultural exchanges
Language and cultural effects	Improves understanding of different communities
Unwanted lifestyle changes	Preserves cultural identity of host population
Displacement of residents for tourism development	Increases demand for historical and cultural exhibits
Negative changes in values and customs	Greater tolerance of social differences
Family disruption	Satisfaction of psychological needs
Exclusion of locals from natural resources	
New cliques modify social structure	
Natural, political and public relations calamities	

Source: Adapted by Kreag (2001)

According to Walle (1996), the perceived social and cultural impacts of tourism refer to the ways in which tourism is seen to contribute to changes in value systems, individual behaviour, family relations, collective lifestyles, safety levels, moral conduct, creative expressions, traditional ceremonies and community organisations. (Pizham and Pokela, 1987; Tosun, 2002), contend that these perceived impacts on host communities or destination areas may be classified into two categories. The first relates to the characteristics of the destination area, which includes the perceived social impacts of the resident-visitor encounter; examples are cultural gap effects, crime, prostitution and the demonstration effect (i.e. changes in values, attitudes, or behaviour of the host population that can result from observing tourists).

The second category concerns social impacts on infrastructure development and their perceived effects on the local resources, for example, pressure on local resources and facilities, local versus imported labour, local language and cultural effects and lifestyle changes (Pizam and Pokela, 1987). It is frequently asserted that the traditions of the host countries are weakened under the influence of tourism (Sharpley, 1994; Crick, 1997). Authenticity and the identity of the traditional cultures are lost as a consequence of the hosts' tendency to imitate tourists who represent for them a more advanced civilisation to which they aspire (Dogan, 1989; Greenwood, 1989; King et al., 1993; Fladmark, 1994; Craik, 1997). The disruption of intimate and personal relations is associated with commercialisation and materialism, which are cited as being one of the most common

consequences of tourism (Burns and Holden, 1995; Robinson and Boniface, 1998). If commercialisation is interpreted as demanding money for services previously provided free, this translates into the replacement of a value system based on moral values, with one based on money.

Tourism transforms human relationships into a source of economic gain and the proportion of non-economic relationships diminishes Cohen, (1995). Previously warm and intimate relationships are thus transformed into commercial forms Dogan, (1989). As some authors view the interaction between different societies and cultures as a threat to traditional cultures and societies, to others it represents an opportunity for peace, understanding and greater familiarity among different societies and nations (DeKadt, 1979; Rojek and Urry, 1997). A suggestion is made by Ratz (2003), that tourism not only creates jobs and business opportunities and helps to stabilise the local economy, but also facilitates cultural exchange between hosts and visitor, brings about an improved image of the host community and provides recreational facilities.

Tourism has also been credited with improving the standard of living, increasing opportunities for recreation and entertainment, promoting cultural exchange, promoting the cultural identity of the host community and increasing the demand for the preservation of historical and architectural monuments (Cohen, 1984; Mason, 2003; Ratz, 2003). By exposing the host to other cultures, tourism is seen as introducing benefits such as tolerance and understanding; the act of presenting ones culture to outsiders strengthens the idea of what it means to live within a community, thus increasing identity, pride, cohesion, and support DeKadt, (1979). The next section discusses models on socio-cultural impacts.

2.8.1 Models on socio-cultural impacts

Studies of the impacts of tourism on local communities in the world have revealed that tourism has a specific, sociological effect on host communities (Cohen, 1988), and several models have been developed to help explain the impacts of tourism and the way in which these are perceived by residents. Doxys Irridex model (1975) and Butlers Tourist Area Life Cycle (1980), are most often invoked to explain tourist-host relationships and their specific social and cultural impacts.

2.8.2 Doxys index of irritation (Irridex)

Doxey developed a useful framework for the analysis of community attitudes towards tourists; the Irridex represents the escalating irritation of residents as the impact of visitor numbers increases. Doxey (1975), cites the physical presence of tourists, the differences between tourists and locals and foreign ownership of local resources as possibly constituting the primary factors causing social impacts. This framework is shown in table 2.4;

Table 2.4 – Causation Theory of Visitor-Resident Irritants: Doxeys Irridex.

Stage	**Host Community Attitude**	**Characteristics**
Stage 1	Euphoria	Small number of visitors Visitors seek to merge with the local community Host Community welcomes tourism Limited commercial activity in tourism
Stage 2	Apathy	Visitor numbers increase Visitors are taken for granted The relationship between tourists and the host community is more formalised
Stage 3	Irritation	The number of tourists grows significantly Increased involvement of external commercial concern Increased competition for resources between tourists and residents Locals concerned about tourism
Stage 4	Antagonism	Open hostility from locals Attempts to limit damage from tourism flows

Source: Adapted from (Keyser, 2002)

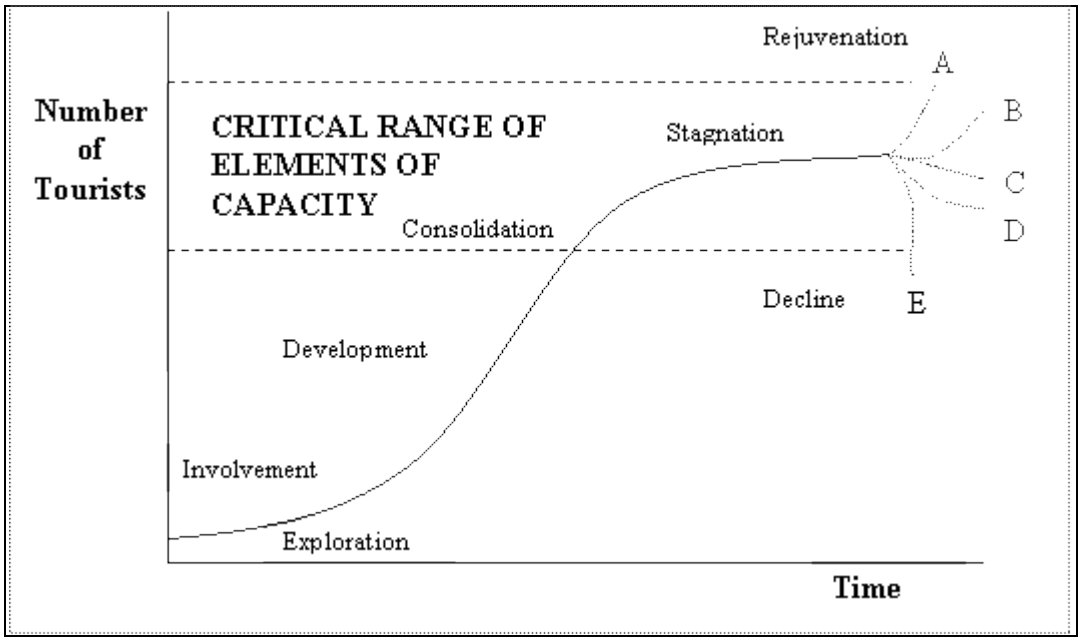
This model is a useful simplification of the complex relationships and sets of attitudes that develop between tourists and host communities. The specific ability of host communities to accommodate or tolerate tourism, and the attitudes that are formed in consequence, are known to differ from community to community and are determined by a number of factors, including the number and types of visitors, length of visit, and cultural distance between hosts and guests (Doxey, 1975). Doxeys Irridex model offers useful insight into what local communities attitudes may be towards visitor attractions in Ireland, as their community progresses through the stages.

Tourism management in the form of consultation and participation with the attractions host communities are an essential element of the tourism management checklist, should any of the host community display any of the characteristics in the stages 2-4.

2.8.3 Butlers tourist area life cycle model

Butler (1980), proposes that tourism progresses through the stages of exploration, involvement, development, consolidation, stagnation and then decline; as can be seen from figure 2.3, there is a correlation between these stages and the attitudes of residents to tourists.

Figure 2.3 – Butlers Tourist Area Lifecycle Model



Source: Adapted from Butler, (1980).

The basic idea of Butler's 1980 Tourism Area Life Cycle (TALC) model is that a destination begins as a relatively unknown and visitors initially come in small numbers restricted by lack of access, facilities, and local knowledge, which is labeled as Exploration in Figure 2.3 (Butler, 1980). As more people discover the destination, the word spreads about its attractions and the amenities are increased and improved (Development). Tourist arrivals then begin to grow rapidly toward some theoretical carrying capacity (Stagnation), which involves social and environmental limits. The rise from Exploration to Stagnation often happens very rapidly, as implied by the exponential nature of the growth curve.

The possible trajectories indicated by dotted lines A-E in Figure 2.5 are examples of a subset of possible outcomes beyond Stagnation. Examples of things that could cause a destination to follow trajectories A and B toward Rejuvenation are technological developments or infrastructure improvements leading to increased carrying capacity. Examples of things that

could cause a destination to follow trajectories C and D are increased congestion and unsustainable development, causing the resources that originally drew visitors to the destination to become corrupted, or no longer exist. The trajectory in Figure 2.2 of most interest to this research is trajectory E, which is the likely path of a destination following a disaster or crisis.

It is also important to point out that the Law of Diminishing Returns could cause a destination to follow trajectories similar to those of C or D, and that the concepts and practices of destination recovery, as applied to destinations recovering from a disaster, could easily be applied to a destination in Decline as a result of the Law of Diminishing Returns. While the models of Doxey and Butler offer a reflection of resident's perceptions of tourism and useful assessment criteria for exploring the communities' attitude at certain stages of tourism development, they will be a helpful tool for the socio-cultural element of the checklist criteria in helping visitor attraction managers to sustainably manage their attraction.

2.9 The concept of sustainable development

The concept of 'sustainable development' first originated in the World Conservation Strategy published by the World Conservation Unit (IUCN) in 1980 (Reid, 1995). The demand for environmentally sensitive and sustainable practices in tourism grew rapidly in the 1980s, on the strength of several long-term, interrelated processes in Western societies. The idea of sustainability turned to tourism from the ideology of sustainable development following the publication of the Brundtland Commission's report Our Common Future in 1987 WCED (1987). The last decade has seen tremendous efforts by individuals, organizations, and governments to identify components of sustainable tourism and to devise ways of implementing and evaluating these components Johnston and Twynam (1998). The Brundtland commission's report defines sustainable development as "a process that meets the needs of present generations without endangering the ability of future ones to meet their own needs" WCED (1987). This report was based upon an enquiry into the state of the earths environment, led by Gro Harlem Brundtland, the Norwegian Prime Minister, at the request of the General Assembly of the United Nations. Elliot (1994), explains that concern over the effects of the pace of economic growth on the environment since the 1950's led the United Nations in 1984 to commission an independent group of 22 people from various member states representing both the developing and developed world, to identify long term

environmental strategies internationally. The report identified a number of key principles as set out in table 2.5, including;

Table 2.5 – Key Principles of the Brundtland Report

• Inter-generational equity - meaning that the range of activities and the scope of ecological diversity available to future generations is at least as broad as that felt by current ones. • Intra-generational equity, social justice and poverty alleviation - improving the well-being of all residents in a community, and not just benefiting the powerful or the rich • Public participation – which means that we all share a role to play and that communities need to collectively make decisions rather than having them imposed by external forces • Environmental protection as an integral component of economic development – economic development without environmental conservation is no longer acceptable • Dealing cautiously with risk and uncertainty - in situations where environmental impacts of activities are not known, the preferred option is to proceed cautiously or not at all, until the likely impacts can be determined. Some additional elements have been included: • Use of renewable resources at a rate equal to or less than the natural rate of regeneration • Accountability – about setting clear standards, ensuring monitoring and enforcement.

Source: McKercher (2003).

Building upon the Brundtland report, the Rio Summit in 1992 represented a major step forward towards the goal of achieving sustainability, with international agreements made on climate change, forests and biodiversity. Out of the Earth Summit came Agenda 21, a blueprint for sustainability in the 21st century. By championing the concept of sustainable development, Agenda 21 provides a framework for tackling today's social and environmental problems, including air pollution, deforestation, health, overpopulation, poverty, energy consumption, waste production and transport issues Honey, (2002). Agenda 21 is a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment. It was established at the 1992 UN Conference on Environment and Development and is the blueprint for sustainability in the 21st century. Nations that have pledged to take part in Agenda 21 are monitored by the International Commission on Sustainable Development, and are also encouraged to promote Agenda 21 at a local and regional levels within their own countries.

Following Agenda 21 was the Kyoto Protocol in 1997, this was a large step for many countries in the race for sustainability, an agreement made under the United Nations Framework Convention on Climate Change (UNFCCC). Countries that ratify this protocol commit to reduce their emissions of carbon dioxide and five other greenhouse gases, or engage in emissions trading, if they maintain or increase emissions of these gases which are

thought to speed global warming. The Kyoto Protocol now covers more than 160 countries globally and over 55% of global greenhouse gas (GHG) emissions. The aim is to reduce emissions by 5% by 2012, each country has its own target to meet.

The Irish Government signed the Kyoto Protocol 10 years ago. This Government agreed to a 13% limit for our pollution growth. This Government says repeatedly that Kyoto is only a first step and more intense action will be needed. And yet 10 years on our emissions are still rising and this year the rise will reach twice our Kyoto commitment. Among rich countries Ireland is the fifth most climate polluting country per person

Sustainability is based on three elements, which include, ecology, socio-cultural, and economy. In addition, there are three fundamental principles of sustainability which are futurity, equity, and holism Redcliffe and Woodgate (1997). After the United Nations "Earth Summit" in 1992, the need to enforce the principles of sustainable development within wider economic and social processes highlighted the role of sustainability and tourism's potential for advancing the goals of such development (Berry, 1997; Ladkin, 1997; Pigram, 1997; Wahab, 1997). The growing need for sustainability was also a result of increased knowledge and concern about tourism impacts and environmental issues in general Holden (2003). Redcliff and Woodgate (1997), identifies the key elements and principles behind sustainability which give a clear view on what a person is looking at when they think of sustainability and what areas are impacted by it. This highlights a key and central point that sustainability issues must be placed as the core objectives of visitor attractions in Ireland for the tourism industry to assure sustained prosperous economic development.

2.9.1 Triple bottom line of sustainability

The triple bottom line is perceived as the process of a company or a business examining the social, environmental and economic effects of its performance and activities on society, then aim to improve its actions and report publicly on its progress. A commitment from companies on corporate social responsibility is required to institute the triple bottom line. In order to achieve sustainability, which is fundamentally to keep the planet in a liveable state, major changes need to be put in place as regards human social structure and behaviour towards the environment. Therefore all three bottom lines of environmental, social costs and financial costs and benefits need to be assessed independently and maintained in a positive balance.

The issue of sustainability is quite clear, if humans do too much damage to the planet such as overuse of resources, then we will not survive and more importantly leave nothing for future generations. A change in human behaviour towards the environment is a difficult aspect as many companies and businesses do not adhere well to change and the financial costs that accompany it. The triple bottom line can be open to political misuse, which involves businesses often 'Green washing' their products by claiming to be environmentally friendly when actually implementing very little in the way of business practices that minimize environmental impact, for example a bank that's suddenly "green" because you can conduct your finances online. A positive triple bottom line means an improvement in conservation of the natural environment and a social benefit for local communities, as well as a profit for shareholders and national or regional economies Buckley (2003). With the use of the checklist from this research by managers in tourist attractions, it will help to ensure the avoidance of green washing and a positive progression towards sustainable practices and implementing a positive triple bottom line.

2.10 Sustainable planning for tourism

The justification behind tourism development planning is often quoted as being necessary to avoid the negative impacts of tourism (Hall 2000). Before developing a plan, appreciation of potential impacts is needed to ensure that these are minimised or avoided. Planning any activity involves the orderly arrangement of activities and practices to minimise the uncertainty of a future position (Westlake 2000). Gunn (2002) suggests that tourism should be seen as a system, with everyone gaining by planning in this context. Allocation of resources needs co-ordination and co-operation between diverse interests, which in turn needs clear objectives and how local people can participate in decisions that affect their lives. Lanza and Pigliaru (2000), comment that tourism development risks creating incentives for the excessive use of natural resources by the private sector, where the market does not assign a realistic price to public goods, so the risks are great that they will be used to unsustainable levels.

Success of tourism strategy should not be measured in terms of increased numbers and revenues, but needs to take account of how tourism development can be integrated within broader development goals of local communities, regions and nationally. Paramount to this should be agreement on ways tourism related investment and revenues should be used to

benefit the community (Brohman 1996). To reach the goal of sustainable tourism, sustainable tourism development must be planned for and operationalised before any tangible process can be made. "The purpose of any planning is to create plans of action for a foreseeable future and implement these actions" Gunn (2002). According to Mathieson and Wall (2006), planning is the process of making decisions about future desired states and how to attain them. Thus, it should be a means of addressing changing opportunities and impacts. Most tourism plans set goals in terms of numbers of visitors and focus on means for attracting tourists and the infrastructure that is required for destinations to do this.

Tourism is widely perceived as a potential economic base, providing elements that may improve quality of life such as employment opportunities, tax revenues, economic diversity, festivals, restaurants, natural and cultural attractions, and outdoor recreation opportunities. There are concerns, however, that tourism can have negative impacts on quality of life. These can be in the form of crowding, traffic and parking problems, increased crime, increased cost of living, friction between tourists and residents, and changes in hosts ' way of life (Ap and Crompton, 1993; Martin and McCool 1994). It is therefore important for community involvement and participation in tourism planning as the negative perceptions of tourism planning to the host community could end in disaster with the possibility of hostile actions towards the tourism industry and even the tourists themselves.

It is often assumed that if more tourists visit then the locals will benefit more, but there are examples where this is not the case. It means that more attention must be given to types of tourism, types of tourists and ways on which the involvement of local people in tourism can be facilitated, perhaps through education and training programmes, encouragement of local entrepreneurship, making capital loans more readily available and the like. Residents should not be assumed to automatically benefit from the 'trickle down' mechanism, but instead should be a central component of tourism plans and not absent or an afterthought as in many cases. Tourism planning needs to be controlled as traditional forms of development control, such as zoning systems, environmental impact assessments, Social impact assessment procedures and development permissions to ensure sustainable development Wall and Mathieson (2006). The Ministry of Tourism, Local Government New Zealand and Lincoln University (2006), have a number of potential benefits of tourism planning (as can be seen in appendix 1.0). These benefits come under the headings of; understanding the local tourism industry, tourism policy objectives, the importance of tourism policies, local authorities

developing specific policies, planning and development facilitation, planning of infrastructure and amenity provision, improved marketing of the area and identification of financial requirements.

In Ireland there was an early attempt at planning for conservation and tourism, carried out in the mid 1960's. This was a planning study of County Donegal, which aimed at reconciling the 'conservation of natural resources' with the 'development of tourism and leisure opportunities' (McCarthy and Dower, 1986). The study was viewed as being necessary due to the increasing pace of tourism development threatening the natural and cultural. There are many factors to be considered in the development of sustainable tourism planning, these are outlined in the following paragraph, with the first being that of Industry Regulation in Ireland.

2.11 Sustainability and tourism

The basic ideas and principles of sustainable development have been applied to tourism, but perhaps as a result of conceptual problems, disagreements, and the multidimensionality of both concepts (Butler, 1991, Lélé, 1991 and Sharpley, 2000), many commentators have stated that no exact definitions of sustainable tourism exist. Consequently, the notion has sometimes been understood as an ideology and point of view rather than an exact operational definition (Clarke 1997), and has been defined broadly as " tourism which is economically viable but does not destroy the resources on which the future of tourism will depend, notably the physical environment and the social fabric of the host community" (Swarbrooke 1999). Definitions like this emphasize the needs of the industry and sustainable use of its resources (Beeton; Hardy and Pearson 2002). By contrast, some researchers prefer to use the term sustainable development in tourism (Butler 1999), which involves the ethical aspects of the ideology of sustainability and does not necessarily refer to a tourism - centric approach in development discussions and practices in which the evaluation is focused on the needs of the industry (Burns 1999). The checklist aims to develop a concept of sustainable tourism within tourism attractions in Ireland at the willingness of tourism attraction managers, in order to sustain a future for tourism attractions and their surrounding environments.

The idea of sustainable tourism has both fascinated and irritated academics and developers, and the concept in particular has aroused harsh criticism (Hunter, 1997 and

McKercher, 1993). Indeed, many interpretational and practical problems involved in the concept and in its relation to sustainable development are widely discussed in the existing literature (Butler, 1999; Liu, 2003; Sharpley, 2000; Wall, 1997). One of the key problems is tied to the holistic nature of sustainability, especially its spatial and temporal scales. Tourism is a broad system based on the movement of people, goods, capital, and ideas, among many other things, between home regions and destinations that are linked by means of routes and transit regions and associated with many other societal processes.

Tourism is also increasingly becoming a part of the global economy and culture, but the focus of sustainability has nevertheless been mainly on destinations and tourism practices in those areas, grasping the most visible processes and impacts related to the industry, but only the fragment of the total (Gössling 2000). This limitation on sustainable tourism is not only practical in nature but also ethical (Holden, 2003 and Macbeth, 2005). As Holden and McBeth suggests, sustainable tourism is also regarded as ethical in nature, as it is good actions and good conduct taken and developed to preserve our environment and natural resources. It is through reflecting on good and bad tourism practices that ethical tourism action is developed. The development of a checklist from this study aims to facilitate managers of key tourist attractions in their decisions to ethical and practical ones and also sustainably manage attractions.

In sustainable development, the issues of scale and the global-local nexus play an important role (Duffy, 2002 and Milne, 1998), but in sustainable tourism the focus of analysis has been mainly on the local, destination level. As suggested by Inskeep (1991), "the sustainable development approach can be applied to any scale of tourism development from larger resorts to limited size special interest tourism …". Thus, tourism has focused in practice on contributing to sustainable development mainly on a local scale, but notably it may also fail to maximize benefits and minimize negative local impacts (Burns, 1999 and Wall, 1997). In spite of the contested nature and narrow focus in practice, the political argumentation and justification of sustainable tourism are often derived implicitly or explicitly from the idea and rhetoric of sustainable development as a holistic, future-oriented, and socially equal global-scale process. This has resulted in a conceptual confusion, criticism, and a need to understand how the limits of growth could be defined and set in tourism. In a local-scale analysis many of these limits and related discussions are derived from earlier studies on carrying capacity. According to McKersher (2003), Tourism

is most ideally suited to adopt sustainability as a guiding philosophy. There are many reasons as outlined in table 2.6:

Table 2.6 – A guiding philosophy for sustainable tourism.

• Apart from transport, tourism does not consume additional non-renewal resources. • A community's resources, its culture, traditions, shops, leisure facilities, etc represent the core resources base for tourism • Tourism use of resources, both natural and cultural, should be non consumptive, making them renewable • Tourism represents one of the few economic opportunities available to remote communities •Tourism provides a real opportunitie to reduce poverty, create employment for disadvantaged people and stimulate regional development • Tourism has proven to revitalize cultures and traditions • Tourism can provide an economic incentive to conserve natural and cultural assets. • Tourism has been shown to foster greater understanding between peoples and a greater global consciousness. But, historically much of tourism has been unsustainable. Why? • Tourism is a fierce competitor for resources - the provision of cultural and ecotourism opportunities for tourists may mean that local residents are displaced • The needs of tourists are different than those of local residents and, thus, serving tourists may again not suit the needs of local residents • Few people understand tourism and what is required to develop successful tourism products, meaning that a lot of countries have made unwise investments in tourism • Tourism is often imposed on local communities, especially rural and minority communities, at level and speed that causes great social disruption.

Source: McKersher (2003).

It can be argued that sustainable tourism is really an issue of how best to encourage tourism while minimizing its costs. The World Tourism Organization defines sustainable tourism as "tourism which leads to management of all resources in such a way that economic, social and aesthetic needs can be filled while maintaining cultural integrity, essentials ecological processes, biological diversity and life support systems."

2.11.1 Sustainability and tourism – the Irish policy position

Prior to the application of EU Structural Funds, the Irish government's role in tourism was considered to be interventionist (Gorokhovsky, 2003). This was perhaps in recognition of the organisational and promotional needs of a disparate industry composed almost entirely of small enterprises (Williams and Shaw, 1998). The Irish Tourist Industry Confederation (ITIC) report on Tourism and the Environment in 1986 was the first document that recognised the role of the environment as a product in tourism. It also highlighted the role the environment had to play in creating a sustainable tourism brand for Ireland. This change of thought is also reflected in the 1995 response of the Irish government to the principles established at the 'Earth Summit' held in Rio de Janeiro in 1992, when Local Authorities and

Sustainable Development – Guidelines on Local Agenda 21 was published. These guidelines suggested that each local authority revisit its own policies and practices to assess their sustainability.

The commitment was further strengthened by the adoption of a National Sustainable Development Strategy in 1997, which had the aim of ensuring that economy and society in Ireland develop to their full potential within a well-protected environment (EPA, 2000). With regard to tourism, the development strategy sought to promote the image of a destination which is un crowded, relaxed, of great scenic beauty, with a distinctive heritage and culture, a friendly welcoming people, high-quality facilities and a superb, unspoilt environment for outdoor activity. It suggested Ireland must avoid the drift to uniformity, evident in many countries, and concentrate on enhancing its competitive image and target the high-yield tourist seeking environmentally based holidays. Sustainable tourism development was identified as the way to achieve this goal (Department of the Environment, 1997). The Horizons (2003) document, Strategy for Irish Tourism 2003–2012, outlines its vision for Irish tourism as 'a dynamic, innovative, sustainable and highly regarded sector, offering overseas and domestic visitors a positive and memorable experience beyond their expectations'.

According to this report, Irish tourism must 'respect the natural and built environments and support their conservation and enhancement'. The National Development Plan (NDP) 2007–2013 acknowledges the importance of Irish tourism as an indigenous growth industry with high employment intensity. While these rising tourism numbers may adversely affect biodiversity and the environment in general, biodiversity and environment are important assets for tourism. Adopting sustainable development principles in the tourism industry will not only enhance the environmental quality of tourism destinations, but may also lead to sustainable competitive advantage where a green image can enhance job creation (Flanagan,2007; Griffin, 2007; O' Halloran, 2007; Phelan, 2007; Roe, 2007; Kennedy Burke, 2007; Tottle, 2007; Kelly, 2007). This section leads into a discussion on the principles of sustainability in tourism.

2.12 The principles of sustainability in tourism

Over the last 10 years sets of principles have been developed to try to operationalise the idea. These principles identify sustainable tourism as having four pillars economic, ecological,

cultural and community sustainability. Various guidelines have been developed for each, for example McKersher (2003) has developed the following as set out in table 2.7;

Table 2.7 – The four pillars of sustainable tourism

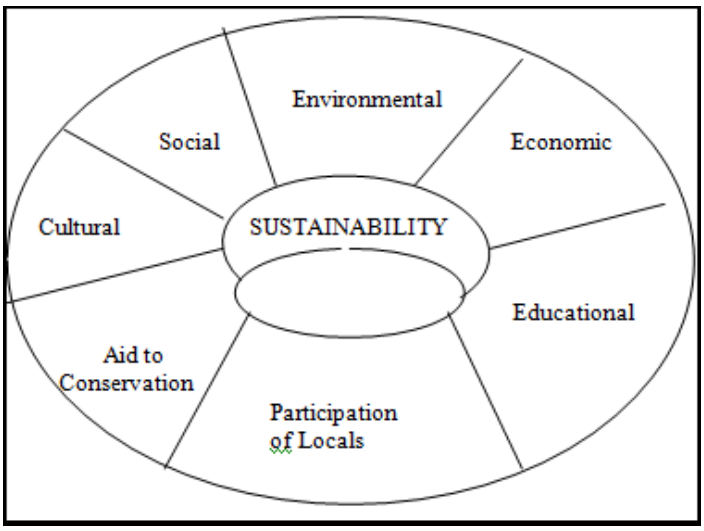
1. Economic sustainability - that is profitable in both the immediate and long term
• Form partnerships throughout the entire supply chain from micro-sized local businesses to multinational organisations
• Use internationally approved and reviewed guidelines for training and certification
• Promote among clients an ethical and environmentally conscious behaviour
• Diversify the products by developing a wide range of tourist activities
• Contribute some of the income generated to assist in training, ethical marketing and product development
• Provide financial incentives for businesses to adopt sustainability principles
2. Ecological sustainability - development that is compatible with the maintenance of essential ecological processes, biological diversity and biological resources
• Codes of practice should be established for tourism at all levels
• Guidelines for tourism operations, impact assessment and monitoring of cumulative impacts should be established
• Formulate national, regional and local tourism policies and development strategies that are consistent with overall objectives of sustainable development
• Institute baseline environmental impact assessment studies
• Ensure that the design, planning, development and operation of facilities incorporate sustainability principles
• Ensure tourism in protected areas, such as national parks, is incorporated into and subject to sound management plans
• Monitor and conduct research on the actual impacts of tourism
• Identify acceptable behaviour among tourists
• Promote responsible tourism behaviour
3. Cultural sustainability - increase people's control over their lives and is compatible with the culture and values of those affected and strengthens the community identity
• Tourism should be initiated with the help of broad based community input
• Education and training programs to improve and manage heritage and natural resources should be established
• Conserve cultural diversity
• Respect land and property rights of traditional inhabitants
• Guarantee the protection of nature, local and the indigenous cultures and especially traditional knowledge
• Work actively with indigenous leaders and minority groups to insure that indigenous cultures and communities are depicted accurately and with respect.
• Strengthen, nurture and encourage the community's ability to maintain and use traditional skills.
• Educate tourists about desirable and acceptable behaviour
• Educate the tourism industry about desirable and acceptable behaviour
4. Local sustainability - that is designed to benefit local communities and generate/retain income in those communities
• The community should maintain control over tourism development
• Tourism should provide quality employment to community residents
• Encourage businesses to minimize negative effects on local communities and contribute positively to them
• Ensure an equitable distribution of financial benefits throughout the entire supply chain
• Provide financial incentives for local businesses to enter tourism
• Improve local human resource capacity

Source: McKersher (2003).

In contrast to McKershers view on the principles of sustainable tourism under the four pillars of sustainability, Mowforth and Munt (2009), discuss their view on the principles of sustainable tourism under the four pillars of sustainability; Environmental, Social, Economic

and Cultural with three added criteria; aid to conservation, participation of locals and educational. These are shown in the following figure 2.4.

Figure 2.4 - Criteria for sustainability in tourism.



Source: Mowforth and Munt (2009).

According to Mowforth and Munt (2009), the above criteria has been culled from observed practice, especially the practice of organisations which attempt to publicise lists of environmentally and ethically sound companies. It is not their view that these principles represent a 'correct' or absolute version of the meaning of sustainability, they believe the notion of sustainability has many ramifications. These are briefly explained in the following subsections.

2.12.1 Ecological sustainability

The condition of ecological sustainability is often the only way in which sustainability is publicly perceived. The need to avoid or minimise the environmental impact of tourist activities is clear. Maldonado (1992), suggest that the calculation of carrying capacities is an important method of assessing environmental impact and sustainability. Conservation organisations involved in the promotion of new forms of tourism are more likely than most to foster imaginary maximum capacities in pursuit of conservation and economic gain. Carrying capacity is an element of the checklist and attractions are asked whether they have established a carrying capacity of their attraction and to give the capacity numbers under the physical, ecological and social carrying capacities.

2.12.2 Social sustainability

Social sustainability refers to the ability of a community, whether local or national, to absorb inputs, such as extra people, for short or long periods of time and to continue functioning either without the creation of social disharmony as a result of these inputs or by adapting its functions and relationships so that the disharmony created can be alleviated or mitigated Mowforth and Munt (2009). Some of the negative effects of tourism in the past have included the opening of previously non-existent social divisions or the exacerbation of already existing divisions. These can appear in the form of increasing differences between the beneficiaries of tourism and those who are marginalised by it, or of the creation of spatial ghettos by the tourists themselves or those excluded from tourism. It is one of the purposes of the tools of sustainability, such as carrying capacity calculations, environmental impact assessments and sustainability indicators to minimise the effects of these divisions to a point at which they can be excused. To this end, Clarke (1990), has suggested the possibility of calculating social carrying capacity. As stated earlier the social carrying capacity is included in the checklist as it is seen to be an intrinsic element of social sustainability.

2.12.3 Cultural sustainability

Relationships within a society are susceptible to change as a result of tourists to a region. The styles of life, customs and traditions are all subject to change through the introduction of visitors with different habits, styles, customs and means of exchange. Even if the society survives, the culture may be irreversibly altered. But cultural sustainability refers to the ability of people to retain or adapt elements of their culture which distinguish them from other people. Cultural influences from even a small influx of tourists are inevitable and may be insidious, but the control of the most harmful effects, emphasis on the responsible behaviour of the visitor and the prevention of distortion of local culture might be assumed to be essential elements of sustainable tourism Mowforth and Munt (2009). Cultural effects are easier seen over a long period of time and therefore are difficult to measure. The checklists section for cultural sustainability holds criteria on community consultation and participation techniques, support of local community initiatives, the purchasing of local goods and services, the employment of local people and the use of elements of local art, architecture and cultural heritage at the attractions premises.

2.12.4 Economic sustainability

Sustainability in economic terms refers to a level of economic gain from the activity sufficient either to cover the cost of any special measures taken to cater for the tourist. Also to mitigate the effects of the tourist's presence or to offer an income appropriate to the inconvenience caused to the local community visited, without violating any of the other conditions, or both. Regardless of how much damage is done culturally, socially or environmentally, it is perfectly acceptable if the economic profitability of the scheme is great enough to cover over the damage, ease the discontent or suppress the protest. In terms of the checklist, again it contains an economic sustainability section with criteria on employment, leakages, contribution to economic development and price elasticity in relation to the economic downturn.

2.12.5 The educational element

A greater understanding and education on how our natural and human environment works is often a goal of the tourist activity, however, this is often a goal without being practised. Educational pamphlets disseminated to tourists at attractions and visitor regions can be seen as a means of education to the tourist on that area. Krippendorf (1987), suggests that education needs to be given to the host communities on the tourists that are visiting and this may encourage a more hospitable and environment for all. However, from the researcher's checklist some of the criteria involve the ideology of educating the employees at the tourist attractions on sustainable practices, which in effect would mean the employees are trained to educate the tourists on the importance of the protection of the environment at the attraction.

2.12.6 Local participation

The importance attached by many parties to the inclusion of the local populations is considerable. There is more debate about the degree of inclusion or control to be exercised by destination communities than about the need for their involvement at all. Six different types of participation are identified by Pretty and Hine (1999), ranging from 'passive participation' (people participate by being told what has been decided or has already happened') to 'self-mobilization' (people taking initiatives independently and retain control over how resources are used). It is argued that the issue of control over tourism is the same whether it refers to mass tourism or any new forms of tourism. There may be something in the idea that local authorities and local service providers of a mass tourism clientele have a greater degree of control and power over their activities than do those of new forms of tourism. Again in terms

of the checklist, it involves an element of participation and consultation techniques with the local communities of the attractions.

2.12.7 The conservation element

It is argued that new forms of tourism should assist in the conservation of specific aspects of the biodiversity or culture of a given area and hence that an essential element of new forms of tourism should be conservation. Gerardo Budowski, for example believes that 'ecotourism cannot survive without conservation and a symbiotic relation must therefore be established' (Budowski 1996). On the other hand there are those who believe that the disbenefits of tourism outweigh the benefits, who see the only valid form of conservation as that which excludes the malign influence of human visitors. They claim that the former group focus exclusively on species preservation at the expense of local people. This view sees ecotourism as a new form of ecological imperialism in which western cultural values override local cultural values and thereby oppose the principles of sustainability which ecotourism claims to support. The checklist has a section on biodiversity/wildlife conservation and the researcher would agree with Budowskis' earlier statement on the importance of conservation in order for environmental sustainability.

2.13 The UNWTO'S twelve aims for sustainable tourism

In 2005 the United Nations World Tourism Organization (UNWTO) and the United Nations Environment Programme (UNEP) identified a set of 12 aims, which should be included within the scope of sustainable tourism development and management. These twelve aims are set out in table 2.8:

Table 2.8 The UNWTO'S twelve aims for sustainable tourism

1 Economic viability.	**7** Community wellbeing.
2 Local prosperity.	**8** Cultural richness.
3 Employment quality.	**9** Physical integrity.
4 Social equity.	**10** Biological diversity.
5 Visitor fulfilment	**11** Resource efficiency.
6 Local control.	**12**Environmental purity.

Source: UNWTO (2005).

From the United Nations World Tourism Organizations twelve aims for sustainable tourism, came the Global Sustainable Tourism Criteria in October 2008, which is a set of criteria to aid businesses in becoming sustainable and aiming towards certification. This set of criteria is

known as the Global Sustainable Tourism Criteria. The Global Sustainable Tourism Council (GSTC), is a global initiative dedicated to promoting these sustainable tourism practices around the world.

According to the GSTC (2012), the Global Sustainable Tourism Criteria are the minimum requirements that any tourism business should aspire to reach in order to protect and sustain the world's natural and cultural resources while ensuring tourism meets its potential as a tool for conservation and poverty alleviation. More than 170 US Cities have already adopted the Criteria. In Ireland the Guinness Storehouse has implemented the Sustainable Travel International Eco-Certification Programme (STEP), into its attraction and this is in line with the GSTC criteria. This is the first business in Ireland to receive such an award.

The proposed sustainable management checklist developed from this research for tourist attractions in Ireland, will be based upon the GSTC criteria. The checklist criteria falls under the GSTCs twelve aims for sustainability. It differentiates from the GSTC criteria as it is based upon the sustainable management of tourist attractions and not global sustainability. The checklist is also more specific in detail as to what managers need to do in order to achieve sustainability. Managers can also tick alongside the list of criteria if they have put any of which in place or not. The checklist is also more specific to the environmental sustainable needs at attractions as opposed to the GSTC where the environmental, economic and social needs are equally depicted. The checklist does however include social/cultural and economic sustainable management sections.

In contrast to the UNWTO's twelve aims of sustainability, in Ireland, Fáilte Ireland (2008), have developed the following five principles of sustainable tourism development (table 2.9) which it seeks to have incorporated into each Local Authority Development Plan as part of a sustainable tourism policy framework;

Table 2.9 Fáilte Ireland Sustainable tourism principles

Principle 1: Sustainable tourism planning should be recognised as a positive activity benefiting the needs of the visitor, the place visited and the host community.
Principle 2: Sustainable tourism planning ensures the Irish landscapes, cultural heritage and environment can continue to be enjoyed and cherished by future generations.
Principle 3: Built development and other activities associated with tourism should in all respects be appropriate to the character of the place in which they are situated. This applies to the scale, design and nature of the place as well as to the particular land use, economic and social requirements of the place and its surroundings.
Principle 4: Strategic tourism assets – including special landscapes, important views, the setting of historic buildings and monuments, areas of cultural significance and access points to the open countryside, should be safeguarded from encroachment by inappropriate development.
Principle 5: Visitor accommodation, interpretation centres, and commercial / retail facilities serving the tourism sector should generally be located within established settlements thereby sustaining the host communities. Sustainable tourism facilities, when properly located and managed can, especially if accessible by a range of transport modes, encourage longer visitor stays, help to extend the tourism season and add to the vitality of settlements throughout the year.

Source: Adapted from Fáilte Ireland (2008).

In comparing and contrasting the UNWTO's twelve aims for sustainability with Fáilte Irelands five principles for sustainable development, it is found that, within the UNWTO's aims there is a huge concept of local and economic prosperity for example 'to provide quality employment opportunities, offering fair pay and conditions for all employees and avoiding all forms of discrimination'. As with Fáilte Irelands aims, they are based on sustainably developing and maintaining tourism facilities, there is little mention of economic prosperity or providing quality employment opportunities.

Fáilte Irelands aims do not coincide with the UNWTO's of social equity and cohesion, as there is no mention of this in Fáilte Irelands criteria. However, Fáilte Ireland and the UNWTO find common ground on the issues of environmental purity and cultural richness. These are the main concepts for Fáilte Ireland in their aims towards sustainable development. With the development of the checklist, it aims to enable managers of tourist attractions to envisage the encompassing of their aims for sustainable development into that of the UNWTO's twelve aims of sustainability, as these cover all aspects relevant to sustainable development.

2.14 The tools of sustainability in tourism

Mowforth and Munt (2009), developed a list of ten techniques for assessing or measuring various aspects of sustainability in tourism. They are grouped into the following ten categories as seen in table 2.10;

Table 2.10 The tools of sustainability in tourism

1: Area Protection Varying categories of protected area status: National Parks Wildlife refugees and reserves Biosphere reserves Country Parks Biological reserves Areas of outstanding human beauty (AONBs) Sites of special scientific interest (SSSIs)	6: Consultation and participation techniques Meetings Public attitude surveys Stated preference surveys Contingent valuation method The Delphi technique
2:Industry Regulation Government legislation Professional association regulations International regulation and control Voluntary self-regulation Corporate social responsibility	7: Codes of conduct For the tourist For the industry For the hosts Host government Host communities Best practice examples
3: Visitor Management Techniques Zoning Honey pots Visitor Dispersion Channelled visitor flows Restricted entry Vehicle restriction Differential pricing structures	8: Sustainability indicators Resource use Waste Pollution Local production Access to basic human needs Access to facilities Freedom from violence and oppression Access to the decision-making process Diversity of natural and cultural life
4: Environmental Impact Assessment Overlays Matrices Mathematical models Cost-benefit analysis (COBA) The materials balance model The planning balance sheet Rapid rural appraisal Geographic information system (GIS) Environmental auditing Ecolabelling and certification	9: Footprinting Holiday footprinting Carbon emissions trading Personal carbon budgets Carbon offsetting
5: Carrying capacity calculations Physical carrying capacity Ecological carrying capacity Social carrying capacity Environmental carrying capacity Real carrying capacity Effective or permissible carrying capacity Limits of acceptable change (LACCs)	10: Fair trade in tourism

Source: Mowforth and Munt (2009).

The tools of sustainability as listed in the above table 2.11, are paramount to the succession of the development of the sustainable management checklist. The checklist will entail every aspect from the tools of sustainability in order to comprise a sound structure for validity. The tools of sustainability are discussed in finer detail in the subsequent sections.

2.14.1 Area Protection

Since the ideas of nature preservation emerged over a century ago, national parks and other protected areas have been marked off, interpreted, museumized, and labeled for the purposes of tourists and society (MacCannell, 1992; Sandell, 2005). In many places, such areas have become tourism products that the industry promotes and sells as attractions. Their touristification is exemplified by the following:

National parks have become tourist icons with many countries promoting some of their parks as "must-see attractions". In some cases the attraction to visit individual parks is as much a product of marketing as it is of accessibility. In other cases, the uniqueness of places is often the sole reason why tourists visit them Boyd, (2004). World Heritage Sites have the highest visibility of any cultural attractions in the world, and possess a symbolic value which may be disproportionate to their size or beauty. They are symbols of our history, cultural icons whose importance transcends their current political status. Visitors to such sites deserve to receive an experience that is something special, something unique, an order of magnitude better than anything they have visited before (Shackley 1998). The concept of national park is only one type of area protection, alongside world heritages sites, wilderness areas, biosphere reserves, marine reserves, and nature 2000 reserves.

Most nations use multiple categories of protection, including different management objectives and where a variety of types of human use are permitted. The national park and world heritage labels have become important in tourism promotion, and they are frequently seen in marketing (Palmer 1999). Eagles (2001) suggests that the names national park and world heritage site have a significant brand identity and thus are more attractive than less-known names like "conservation area ". Nolte (2004) concludes from her study about tourism in biosphere reserves, that national parks and world heritage sites are well-known labels to many people and that they have a strong brand mark, compared to biosphere reserve, which is hardly noticed.

Nolte argues that this results from the fact that the concept of national park is better known in the public, "because everybody can associate something with a national park, while the term biosphere reserve remains mysterious" (2004). According to Eagles (2001), the name national park is closely associated with nature-based tourism, and is a symbol of high-quality natural environment with well-designed infrastructure. Designations may suggest

that the area is pristine, with recreational opportunities undisturbed by risk of encounter with motor vehicles, for example, and that the area is managed to provide solitude (Loomis 1999). Seidl and Weiler (2004), state that "designations themselves are assumed to convey information to an information-constrained set of potential visitors"

Positive associations of names and information about a site can be identified as touristic markers and analyzed in an attraction system (Leiper, 1990; Lew, 1987; MacCannell, 1976 and Richards, 2002). As an attraction, area protection can be expressed in different manners such as a label of quality, marker, or brand. Earlier studies have discussed the importance of protected areas and labels in tourism, and that area protection can be an important marker (Dupuis and Müller 2005), but the extent to which designations in fact influence actual visitation have not been extensively empirically examined. Some governments (e.g. Guatemala, Brazil) have designated large areas of land for protection but have not put in place the legislation, finances, tools and manpower to implement these designations. This is not limited to developing countries and it must be noted that the Irish government has placed a moratorium on employing any additional staff for the National Parks and Wildlife Service on a regular basis over the past decade. So while area protection can be considered a tool for sustainability it also can be rendered tokenistic when it has not been adequately resourced and supported from an enforcement point of view.

2.14.2 Industry regulation

Regulation of the tourism industry can come from local governments in the form of planning restrictions, national governments in the form of laws relating to business practice, professional associations in the form of articles of affiliation and international bodies in the form of international agreements and guidelines to governments Mowforth and Munt (2009). International agreements may also be explicitly or implicitly political, especially when they stem from a body such as the World Tourism Organisation (UNWTO) whose mission is to promote and develop tourism as a significant means of fostering international peace and understanding, economic development and international trade (UNWTO 2007). On the other hand Butler (1991:201), stated;

"It has to be appreciated that tourism is an industry and as such is much like any other industry. There is no more reason to expect tourism, on its own accord, to be responsible, than there is to expect the beer industry to discourage drinking or the tobacco industry to discourage smoking – even though many agree that such steps would be socially desirable".

Tourism industry regulation in Ireland generally comes from local government in the form of planning restrictions and environmental and wildlife legislation. Such legislation include for example; Sustainable Energy Act 2002, National Tourism Development Authority Act 2003, Litter Pollution Act 1997, Game Preservation Act 1930, The Irish Wildlife Act 2000, Waste Management Acts 2008, Water Legislation 2008. These planning restrictions and legislation aid in the management to sustain the environment and tourism within Ireland. The tool of regulation is one which allows specific groups to take control of the industry. The debate around regulation therefore tends to represent a power struggle between various interest groups. Below in figure 2.5 are all the legislation pertaining to the attraction sector of the tourism industry.

2.14.3 Visitor management techniques

A range of visitor management techniques exist for use by those who cater for and control the movements of tourists. There are several texts which outline these in depth (Ceballos-Lascurain 2001;Elkington and Hailes 1992; Lavery 1971; Lindberg and Hawkins 1993; Witt and Moutinho 1994). There has been a growth in the number and variety of visitor management techniques available to managers responsible for the movement and flows of tourists (Lavery, 1971; Elkington and Hailes, 1992; Gunn, 1991; Witt and Moutinho, 1994; Mowforth and Munt, 2003; Wood, 2002). They vary in application and complexity from zoning, visitor dispersion, channelled visitor flows, restricted entry, vehicle restriction, differential pricing structures and interpretative gateways. In essence the destination itself, the resources available, the competencies of the tourism managers, and the number and type of tourism all play a role in determining the techniques to be utilised. Visitor management techniques provide a means to manage and minimise the impact of visitors. This element is also included in the checklist

2.14.4 Environmental impact assessment (EIA)

A technique which has attained fashionability and respect relatively recent is that of environmental impact assessment (EIA). It has been described as ‘amoung the foremost tools available to national decision makers in their efforts to prevent further environmental deterioration (Sniffen 1995). In principle, EIA should apply to all actions likely to have a significant environmental effect. The potential scope of a comprehensive EIA system is considerable and could include the appraisal of policies, plans, programmes and specific

projects. EIA as it has developed in many countries involves a number of procedures and stages, as seen in table 2.11;

Table 2.11 Procedures and stages for an Environmental Impact Assessment

1. Identification of projects requiring EIA, sometimes known as screening; 2. Identification of the key issues to be addressed in an EIA, called scoping; 3. Impact assessment and evaluation; 4. Impact mitigation and monitoring; 5. Review of the completed EIS and; 6. Public participation.

Source: ncte (2009).

According to the ncte, (2009), the result of an EIA is assembled in a document known as an Environmental Impact Statement (EIS) which looks at all the positive and negative effects of a particular project on the environment. This report is just one component of the information required to aid decision makers in making their ultimate choices about a project. EIA can be considered as a mechanism which maximises the efficient use of natural and human resources. It can also reduce costs and time taken to reach a decision by ensuring that subjectivity and duplication of effort are minimised, as well as identifying and attempting to evaluate the primary and secondary consequences which might require the introduction of expensive pollution control equipment or compensation and other costs at a later date.

The ncte (2009), carries on to discuss that Ireland has had a form of EIA since 1963. But more specifically since the 1976 Local Government (Planning and Development) Act which specified that environmental studies be carried out where a project was polluting or likely to cause pollution and where the project cost was in excess of 5 million pounds. However, the studies were not mandatory nor were they required at all for public developments. In addition there was an absence of a clear definition of the environment. The threshold criteria were also criticised on the basis that the development had to satisfy both simultaneously. In other words a project costing less than 5 million pounds would not be required to have such a study carried out even if it was polluting.

2.14.5 Carrying capacity

The concept of carrying capacity occupies a key position with regard to sustainable tourism, in that many of the latter's principles are actually based on this theory and research tradition (Font, Grittis, Tribe, Vickery and Yale, 2000). It is occasionally interpreted as an application of sustainable tourism (Butler 1999), implying that the two can co-exist and may both be

useful concepts and frameworks for analyzing the impacts and limits of development (Butler 1996). Carrying capacity has been generally defined as the maximum number of people who can use a site without any unacceptable alteration in the physical environment and without any unacceptable decline in the quality of the experience gained by tourists (Mathieson and Wall 1982). However, there is not just one carrying capacity of a destination. Donald Getz (1983), for example, has divided the concept into six subtypes (physical, economic, perceptual, social, ecological, and political), each having different implications.

The issue of carrying capacity encountered some of the same problems in the past as the idea of sustainable tourism has nowadays: that of providing unrealistic expectations at times and being conceptually fragmented (Lime and McCool, 2001 and Wall, 1982). The search for a magical absolute and objective calculation of the maximum acceptable number of tourists at a destination has failed, for example, because carrying capacity is not related only to a certain resource and the numbers of tourists or the intensity of the factual impacts. It is also a question of human values and (changing) perceptions concerning the resource, indicators, criteria, and impacts (Furley and Hughes, 1996; Lindberg et al., 1997; Odell, 1975). There are probably as many definitions of carrying capacity in the literature as there are definitions of sustainable tourism, based on different perspectives and opinions concerning nature and culture and their use as resources. Carrying capacity calculations are asked in the checklist of the physical, ecological and social calculations at the tourist attractions.

2.14.6 Consultation/Participation techniques

The required associate input of sustainable development cannot be merely imposed on the host community. According to Stewart and Hams, (1991), with various stakeholders involved, meaningful active participation is required. Sustainable development must be built by, through and with the commitment of local communities. Gunn (1994), for example, suggests that citizens may be more thoroughly engaged in developing a tourism plan if they participate from the start of the planning process. It may also be the case that citizens involved only at a late planning stage are more likely to construct their concerns in adversarial terms and to adopt entrenched positions (Haywood 1988; Healey 1998). Information dissemination and consultation activities are likely to increase the accountability of a collaborative initiative to relevant stakeholders. One issue to consider is whether the representatives directly involved in attending collaborative working group

meetings, also consult with others in their group and inform them about progress. Consideration should be given to whether the collaborative practices are reducing accountability in local policymaking, particularly if fewer decisions are made by democratically elected politicians (Hastings 1996). Some collaborative techniques involve information-giving or campaigning (such as displays or newsletters), or else opinion-collecting (such as interviews and questionnaires). These techniques are valuable, but they do not provide participants with the opportunity for direct debate and consensus-building with other stakeholders, as can occur with focus and working groups (Marien and Pizam 1997). However, these different techniques may be integrated within a broad strategy for stakeholder involvement. Hence, Simmons (1994), contends that to promote citizen involvement in tourism planning, No technique can fulfil alone all the requirements of participation and a staged approach, using a variety of techniques, will be required.

2.14.7 Code of conduct

The 1990's saw a rising tide of codes of conduct for use in the tourism industry. According to Mason and Mowforth (1995), there are two general points that can be made about almost all codes. Firstly, they attempt to influence attitudes and modify behaviour. Secondly, almost all codes are voluntary; statutory codes, backed by law are very rare. This allows even the most impressive code to be abused by the industry as public relation exercises or green washing. In Ireland there is an example of codes of conduct in tourism under the name of Leave no Trace Ireland. This is a voluntary organisation which actively runs courses for groups and schools on responsible outdoor recreation through education, research, and partnerships. There are seven leave no trace principles which are in table 2.12;

Table 2.12 The seven principles of leave no trace

1 Plan ahead and prepare
2 Be considerate of others
3 Respect farm animals and wildlife
4 Travel and camp on durable ground
5 Leave what you find
6 Dispose of waste properly
7 Minimise the effects of fire

Source: Leave no Trace Ireland (2011).

These seven principles set out in table 2.12, assist people to understand their impacts to the environment when conducting outdoor recreation activities. The principles also help people

to minimise their impacts while still enjoying their activities. Leave no Trace Ireland (2011). The next section discusses sustainability indicators

2.14.8 Sustainability indicators

The development of sustainability indicators arose from the Rio Summit of 1992. It is now commonly accepted that conventional indicators of 'well being' such as gross national product (GNP), give a restricted, partial and one-sided view of development. It is the search for indicators that show the linkages between economic, social and environmental issues and the power relationships behind them which has given rise to the development of so called 'sustainability indicators' Mowforth and Munt (2009). With respect to the general concept of sustainable tourism development, an effective and holistic strategic framework for planning the long-term future development of an area is required. Such a framework is seen by many authors as being the responsibility of government bodies, particularly local government, and should not be left up to the private sector and other components of the public sector (Cronin, 1990; McKercher, 1993; Hunter, 1995; Patterson and Theobald, 1995; Miller, 2001; Choi and Sirakaya, 2005). In Ireland indicators used for sustainability in tourism can be seen in that of the DIT ACHIEV model of sustainable tourism indicators. The model comprises six Fields of Interest which can be seen in table 2.13, the initials of which, lead to its name:

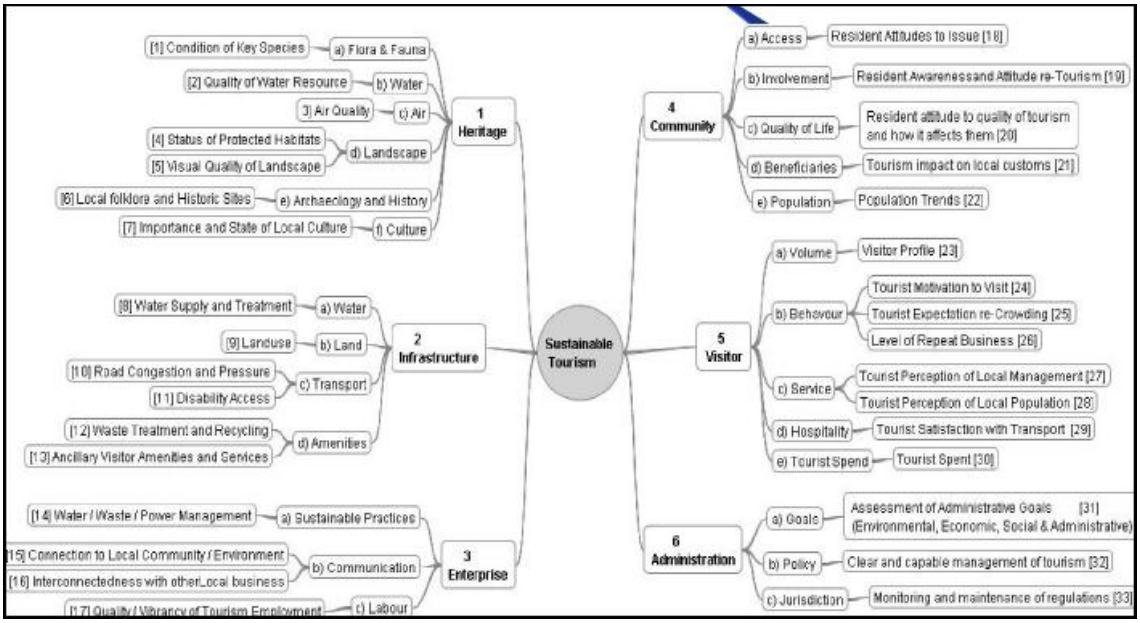
Table 2.13 DIT ACHIEV model six fields if interest

• Administration, • Community, • Heritage, • Infrastructure, • Enterprise and • Visitor

Source: Griffin, K. Morrissey, M & Flanagan, S. (2010).

According to (Griffin, K. Morrissey, M & Flanagan, S., 2010), this model of sustainable tourism indicators has been developed by the School of Hospitality Management and Tourism, Dublin Institute of Technology (DIT) and is endorsed by the Irish Environmental Protection Agency and Fáilte Ireland (the National Tourism Development Authority of the Republic of Ireland). The model is designed to mitigate against the negative impacts of tourism and guide a destination towards a broad range activities which will encourage movement towards true sustainability. The DIT ACHIEV model can be seen in figure 2.5.

Figure 2.5 The DIT ACHIEV model of sustainable tourism indicators



Source: Source: Griffin, K. Morrissey, M & Flanagan, S. (2010).

The DIT ACHIEV model according to Flanagan et al, (2007), aim was to be implemented on an Irish tourism destination. The objective was to assess whether it can be implemented by the local community in any tourism destination. The model was piloted on the tourism destination of Killarney and Carlingford, Ireland.

2.14.9 Foot printing and carbon budget analysis

The 'ecological footprint' provides a means of quantifying environmental impacts in a single easily understandable indicator. It also provides a means of identifying opportunities for cost savings. It is calculated on the assumption that the earth is a reserve of natural capital, each year producing interest in the form of renewable natural resources such as fish, soil, fresh water and many more. Ecological sustainability requires that we live off this interest rather than eat into the underlying 'capital'. The interest is quantified in units of area. At present, there are about two units of area available per person on the planet per year. The WWF-UK has developed the tool of ecological foot printing and estimates that on global scale humanity is currently eating into the earth's underlying capital by annually consuming about a third more resource than the earth produces, which, if accurate is clearly unsustainable Mowforth

and Munt (2009). These facts are quite alarming, in a form of dealing with ecological foot printing and carbon emissions, the checklist has an element of carbon offsetting for visitors and eco taxes/charges for the attraction to implement.

2.14.10 Fair trade in tourism

Fair trade is a challenge to traditional economic theory and practice in that it seeks to set a price for the product based on principles other than seeking the lowest of cost production in so-called efficient markets. It can be seen as a techniques of sustainability in that it seeks to redistribute the benefits of an activity or production and thereby to eliminate any resulting disadvantages accruing to a given sector of the population concerned,. In theory it should reduce the uneven and unequal development across the world Mowforth and Munt (2009). Again the checklist has an element of fair trade purchasing.

2.15 Ecotourism

Tourism can negatively impact the natural resource base of a destination. According to Butler (1990:40-45), "Tourism is an industry, a form and agent of development and change. It has to be recognized as such. Controlled and managed properly it can be a non or low consumptive use of resources and can operate on a sustainable basis. However, if developed beyond the capacity of the environment, the resource base, and the local population to sustain it, it ceases to be a renewable resource industry".

One response to environmentally degrading tourism has been "alternative tourism. Alternative tourism is essentially the antithesis of undesirable tourism, or mass tourism. Alternative tourism ideally results in less severe impacts while still providing positive economic effects" (Butler, 1990:40-45). Numerous types of tourism are considered alternative: scientific tourism, bio tourism, academic tourism, farm and ranch tourism, nature or environmental tourism, village tourism, special interest tourism and others. One new trend in environmentally responsible, or alternative, tourism development has recently emerged: ecotourism is concerned with gaining the economic advantages of tourism development and minimal environmental impact.

Ecotourism aims to protect the natural environment while still encouraging tourism activity. Traditionally, tourism that is environmentally oriented has been called environmental or nature tourism, but ecotourism goes beyond the bounds of nature tourism and specifically focuses on environmental preservation (Farrell and Runyan, 1991). Ecotourism is "an

enlightening nature travel experience that contributes to conservation of the ecosystem, while respecting the integrity of the host community" (Wight, 1993:54-65). A number of the positive impact examples previously cited are ecotourism: a cooperative association between the environment and tourism.

Although alternative tourism may help reduce some of the negative environmental impacts associated with tourism, the potential for resource degradation still exists. "However environmentally sympathetic, every tourist can be damaging to the environment" (Butler, 1990: 40-45). In some areas alternative tourism may be a viable option to mass tourism. Another option, however, may be no development at all.

2.16 Certification of sustainable tourism

Increasing demand for sustainable tourism and ecotourism products has come hand in hand with green washing criticisms and attempts to overcome these (Francis and Goodwin 2003; Wight 1993). Certification is one method of spelling out and operationalising definitions of sustainable tourism or ecotourism, with a dual task of improving industry performance and influencing markets (Buckley 2002; Font 2001). As a sustainable development tool, it has its advantages, such as showcasing good practice and encouraging voluntary improvements (Honey 2002; UNEP 1998). The process starts with the certification body setting standards, which are relevant and achievable by a proportion of the industry. These operationalise definitions of environmental management, sustainable tourism, or ecotourism depending on the focus of the program, by working out indicators to credibly and effectively measure standards across the range of intended applicants. These indicators are then assessed by an assessor who has been deemed competent for the task (involving skills and no conflict of interest, among others). If the assessment is successful, the applicant is certified as meeting the standards.

The certification body could also be subject to a procedure of accreditation, guaranteeing the process. The overall aim is that the label will be recognized by consumers or distribution channels, and considered as added value leading to its acceptance in the marketplace, to support the marketing of companies that make the grade (Font 2002; Toth 2002). Most certification programmes are developed as bottom up initiatives, generally operating as specific responses to manage the key negative impacts or challenges of a particular sub sector in a particular location (Font, 2003). In the last decade, however, they have become one of

the buzzwords of sustainable tourism and ecotourism, and are considered as a potential mechanism to combat green washing.

Now there are many certifications schemes developed and available for the tourism industry worldwide, and a number of them accredit hotels. In addition to the competitive advantages of cost savings and improved public image, which attractions can achieve through good environmental practices, certification schemes provide businesses involved with other benefits. However, these benefits do not seem to be persuasive enough for the businesses to join the schemes. The issues with certification are mostly due to lack of unified brands, as too many competing certification programs and other industry awards have led to confusion. Lack of awareness by industry, consumers and government, and low consumer demand, indicate an absence of proven marketing benefits, and therefore presents little incentive for attractions to join. Reluctance to disclose information, cost of adherence and the perception that the label can be 'bought' are among the reasons of failure for certifications (Dodds and Joppe, 2005). In general, about two thirds of the certification programmes are led by private tourism associations, NGOs and consultancies, and about one third are led by governmental organisations (Font, 2003). The costs of developing certification programmes are often put upon governments, although, large governance structures are pricey and programmes may need a further layer of organisations to help industry implement the standards.

NGOs have also been responsible for running some certification programmes, and their role has been to raise awareness and apply legislative pressure, but the high costs of operations questions the feasibility and long-term sustainability of this option. Therefore, NGOs often partner with industry associations to implement programmes Dodds and Joppe, (2005). There are also industry-led schemes, and the advantage of these is that they are self-sufficient, do not be rely upon government support, and are also more willing to share information and partner with other certification schemes to move towards a wider brand and reduce costs for themselves and operators. The development of the checklist will aid the transition for managers of tourist attractions in Ireland to certifying their attraction, to be accredited for their sustainable practices and to ensure the avoidance of green washing.

2.17 Towards a framework for tourism and sustainability

Sustainability in tourism can be achieved through education and community participation and involvement. Stewart and Hams (1991) argue that the requirements of sustainable

development cannot merely be imposed, active participation by local communities is needed. The absence of an existing framework that could be used to sustainably manage tourism attractions in Ireland resulted in the development of a framework, in the form of a checklist being created for the purpose of this thesis.

In order to probe attraction managers and analyse the actual level of sustainable management at each attraction, it was necessary to construct a framework capable of incorporating the majority of themes which have emerged from the literature review. This includes the principles of sustainability in tourism, the four pillars of sustainable tourism and the UNWTO'S twelve aims for sustainable tourism (2008). Specifically, the framework needs to assess the major themes which emerge throughout the review of theory from this chapter. Therefore an outline of the framework is provided in this chapter in table 2.14, with the final version as a checklist (Figure 6.1), being provided in chapter six.

In light of the review of literature found and discussed on tourism and sustainability, the following table 2.14 shows a sustainable framework for tourism. Table 2.14 highlights sustainable planning for tourism. This is in terms of impact management for environmental impacts, economic impacts, social impacts and cultural impacts of tourism. This framework will be used as a template and support the development of a sustainable management checklist from this research.

Table 2.14 A basic framework for tourism and sustainability

1.Planning for the environmental impacts of tourism	**3.Planning for the economic impacts of tourism**
Managing the Tourism impacts Triple bottom line of sustainability Environmental Impact Assessments Environmental Management System Visitor management techniques Impacts on biodiversity Impacts on wildlife Impacts on waste/pollution Impacts on water quality Impacts on energy consumption Impacts from CO2 emissions Management of the attraction knowledgeable and updated on all relevant tourism plans and legislation Staff Training on Environmental Impacts - Personnel receiving regular training and awareness sessions regarding their role in sustainable environmental practices Code of conduct for visitors Carrying Capacity Eco taxes or eco charges Purchasing policy to buy eco-certified products	Support of initiatives for social structure community development including, among others, education, and corporate social responsibility Purchasing of local food, goods and services Tourist business offering a permanent discount off fare/entry for the local communities Local employment Plans in place to reduce running costs Contribution of percentage of tourist business profits or in kind contributions back into the local community Leakages from the tourist business Price elasticity in relation to economic downturn Contribution to economic development of local community
2.Planning for the social/cultural impacts of tourism	**4.Planning for Sustainability in tourism**
Tourist-host interrelationships Special needs access Tourism and cultural change Tourism and material forms of culture Consultation and participation techniques with the local community Fair trade purchasing Activities of tourism in which do not jeopardize the provision of services, such as water or energy, to the neighbouring communities	Government legislation The principles of sustainability in tourism The four pillars of sustainable tourism Criteria for sustainability in tourism Sustainable Planning for tourism The UNWTO'S twelve aims for sustainable tourism Fáilte Ireland Sustainable tourism principles The tools of sustainability in tourism DIT ACHIEV model of sustainable tourism indicators Fair trade in tourism **Certification of Sustainable Tourism**

The above framework sets the grounds for the development of the sustainable management checklist for tourist attractions in Ireland. It is the first step of the checklist and is focused on four themes which have emerged from the theory and best practice guidelines established in the literature review in chapter two.

The first theme is concerned with the need to plan for the environmental impacts of tourism. It highlights the various environmental impacts from tourism. It also outlines some environmental actions that may be taken by attraction managers, in order to save money and help protect the environment.

Theme two is outlines the need to plan for the social impacts of tourism. Social sustainability will help to maintain and strengthen the quality of life in local communities, including social structures and access to resources, amenities and life support systems, avoiding any form of social degradation or exploitation.

Theme three is concerned with the need to plan for the cultural impacts of tourism. According to Mowforth and Munt (2009), cultural influences from even a small influx of tourists are

inevitable and may be insidious, but the control of the most harmful effects, emphasis on the responsible behaviour of the visitor and the prevention of distortion of local culture might be assumed to be essential elements of sustainable tourism

Theme four explores some of the important elements that will be exposed in the final checklist, of planning for the economic impacts of tourism. This theme according to UNWTO, (2008), aims to ensure viable, long-term economic operations**,** providing socio-economic benefits to all stakeholders that are fairly distributed. This includes stable employment and income-earning opportunities. Economic sustainability also ensures long term social services to host communities, and contributing to poverty alleviation.

Theme five examines some aspects of planning for sustainability in tourism. These include the principles of sustainability in tourism, the four pillars of sustainable tourism, sustainable planning for tourism, the UNWTO'S twelve aims for sustainable tourism, Fáilte Irelands sustainable tourism principles, the tools of sustainability in tourism and the DIT ACHIEV models six fields of interest. These sections will be integrated as necessary into the final checklist.

2.18 Conclusion

The need for sustainability in tourism has been clearly identified in this chapter. The reality of this however, has yet to be fully realised and understood. The extensive literature in this chapter has discussed how sustainability in tourism has recognized how the tourism industry can contribute to overall sustainable development and continue to provide high quality, low impact experiences.

The growth in mass tourism can have adverse effects on the relationship between tourism and the environment. These effects come in the form of tourism impacts, such as environmental impacts of tourism, economic impacts of tourism and socio-cultural impacts of tourism. The concept of sustainable development has been outlined in this chapter under the key principles of the brundtland report (1987). The triple bottom line of sustainability has also been discussed, along with sustainable planning for tourism and the Irish policy position on sustainability and tourism. The four pillars of sustainable tourism were discussed in this chapter, which include, ecological sustainability, social sustainability, cultural sustainability and economic sustainability.

The educational element, local Participation and the conservation element are all very important factors for sustainable tourism to be achieved. The UNWTO'S twelve aims for sustainable tourism, along with Fáilte Irelands sustainable tourism principles are hugely significant in the development of the sustainable management checklist. The tools of sustainability in tourism and the DIT ACHIEV model of sustainable tourism indicators were discussed in this chapter and are incorporated into the sustainable management checklist. This chapter has also discussed how ecotourism aims to protect the natural environment while still encouraging tourism activity.

While many tourism businesses may claim to be eco friendly, certification can be used as a sustainable development tool to certify those who are practicing sustainable tourism and thus avoiding green washing. Certification of sustainable tourism has many advantages, including highlighting good practice in a tourism business and encouraging voluntary improvements (Honey 2002; UNEP 1998). Finally a basic framework for tourism and sustainability was developed from this chapter and is the basis for the final checklist in chapter seven. Sustainability is a matter of both local and global responsibilities. It can most certainly be achieved through education and community participation and involvement. The next chapter discusses the management of impacts at tourist attractions

CHAPTER 3

MANAGING THE IMPACTS OF TOURIST ATTRACTIONS

"Our research shows that nine out of ten of our overseas visitors come to Ireland because of our reputation as a green and unspoilt destination. Sadly, littering is evident in our countryside with 27% of visitors having witnessed littering or dumping in rural areas. Tourists love our landscapes and countryside but they don't like litter." (Paddy Mathews, Fáilte Ireland's Environmental Planning Unit, 2010)

3.1 Introduction

In order to begin a discussion on managing impacts at tourist attractions, it is firstly important to understand what the impacts at tourist attractions detail. According to Hall and Lew (2009), the impacts of tourism are receiving more public attention than ever before. Issues in the media as varied as climate change, coastal urbanization, demand for water by resorts and golf courses, the loss of agricultural land for development, the spread of exotic pests and diseases, economic and industrial change, fossil fuel consumption, increased cost of energy, changes in housing and communities and sex tourism have all focused on the more controversial roles of tourism in contemporary society. This chapter seeks to address such issues and provide an understanding of what the impacts of tourism might be and how they can be managed. It looks specifically into many areas surrounding the impacts at tourist attractions for example, the types and purpose of attractions, sustainable development at tourist attractions, visitor impacts at tourist attractions and the sustainable management at tourist attractions.

3.2 Types of visitor attractions

There are many different types and sizes of visitor attractions. They range from outdoor to indoor, small to big, private to public, fee to not fee attractions. According to Swarbrooke (1999), certain types of attractions are particularly close to the concept of sustainable tourism, especially those which reinforce and support the current life of the local community. Such types of attractions are shown in the following table 3.1:

Table 3.1 Types of attractions

Industrial tourism attractions, such as workplaces that open their doors to visitors and factory shops. These attractions bring economic benefits through the direct sales to visitors. They may also improve the morale and feeling of self-worth of employees when they see the tourists valuing what they do for a living. Popular industrial factories include food and drink factories and craft shops.
Farms, which welcome visitors to see the work of the farm, buy the farms products, take part in activities, or eat a meal cooked on the premises. This type of attraction provides extra income for the farmer but can also help reduce rural de-population by making the farmers lives more interesting through meeting the tourists who may come from many different countries.

Source: Swarbrooke, (1999).

As cited in Fyall, Garrod and Leask (2003), visitor attractions play a crucial role in the development and success of tourist destinations. They range from a basic level of attracting visitors into an area to a broader level such as agents of change, social enablers and major income generators. Other characteristics of sustainable tourism attractions are included in the following table 3.2:

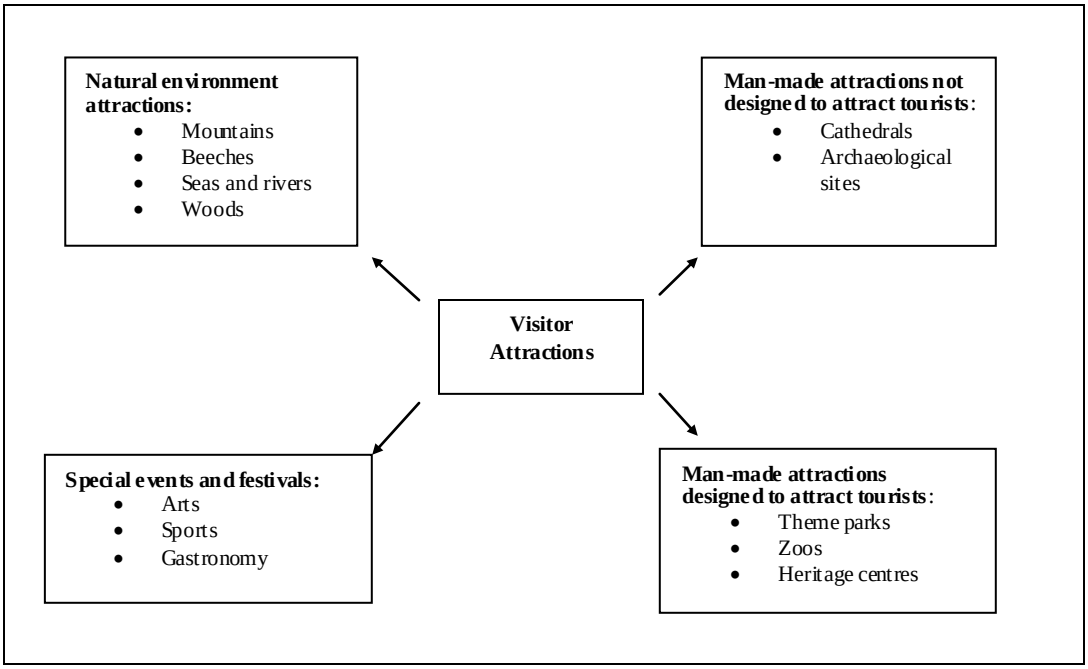
Table 3.2 Characteristics of sustainable tourism attractions

Being owned and controlled locally so there are little leakages out of the local economy
Assuring the potential for maximum spending by visitors on souveniers and refreshments to ensure the economic benefits of tourism are optimized
To be locally rooted for example, heritage centres being directly related to the local area and not a foreign culture.

Source: Swarbrooke, (1999).

The UK define visitor attractions as; "A permanently established excursion destination, a primary purpose of which is to follow public access for entertainment, interest or education, rather than being principally a retail outlet or venue for sporting, theatrical or film purposes. It must be open to the public without prior booking, for published periods each year, and should be capable of attracting tourists or day visitors as well as local residents. In addition, the attraction must be a single business, under a single management...and must be receiving revenue directly from visitors" ETC, (2000:24). A typology of four different types of attractions is shown in figure 3.1

Figure 3.1 A typology of visitor attractions



Source: Swarbrooke (1999)

The visitor attractions in Ireland that are to be assessed for this research fall into the four types as shown above in figure 3.1. There are various different attractions in Ireland and all of which in question will greatly assist with this research. The next section discusses a range of visitor attractions in Ireland.

3.3 Visitor attractions in Ireland

According to Swarbrooke (1999) "visitor attractions are the heart of the tourism industry; they are motivators that make people want to take a trip in the first place". Therefore it is clear that visitor attractions should have a key and central role to play in the development of sustainable forms of tourism. To highlight the importance of tourism attractions to the Irish tourism industry the following table shows attendances to the ten most popular tourism attractions in Ireland in 2011, as these are the most up to date figures from Fáilte Ireland.

Table 3.4 Top ten tourism attractions in Ireland (2011)*.

Name of Attraction	County	2011
Guinness Storehouse	Dublin	1,025,677
Dublin Zoo	Dublin	1,000,000
National Aquatic Centre	Dublin	825,049
Cliffs of Moher Visitor Experience	Clare	809,474
The National Gallery of Ireland	Dublin	624,412
Book of Kells	Dublin	524,119
National Botanic Gardens	Dublin	501,000
National museum of Ireland - Archaelogy	Dublin	402,582
Fota Wildlife Park	Cork	390,124
St. Patricks Cathedral	Cork	362,000

Source: Adapted from Fáilte Ireland (2011).

It is clear from table 3.4 that with such high volumes of visitors at tourism attractions, this puts a huge strain on resources such as water, energy, waste and biodiversity. Therefore it is important to identify if there are sustainable practices at the visitor attractions to ensure that they are managed responsibly for future generations. Visitor attractions should have a key and central role to play in the development of sustainable forms of tourism.

3.4 The purpose and role of visitor attractions

In contrast with Swarbrooke (1999) earlier quote, "visitor attractions are the heart of the tourism industry; they are motivators that make people want to take a trip in the first place", Richards (2001:4) points out that while it can be argued that attractions do literally 'attract' visitors, they "certainly do provide a focus for much tourist activity and are an essential weapon in the arsenal of tourism destinations engaged in a competitive struggle for tourist businesses". The role within a destination forms any one part of a complex network of tourism service providers within the broader tourism product; however, they are often used as key products in marketing activities. Examples of this are the use of images of the Taj Mahal when marketing India or images of Kylemore Abbey in Connemara county Galway to market Ireland.

Visitor attractions have expanded into areas such as conference venues, events and off-site activities to gain on their revenue streams. These all require attractions to work

effectively with other tourism operators within a destination, such as accommodation providers, food and beverage suppliers, destination management companies and transport operators (Fyall, Garrod and Leask (2001).The value of visitor attractions within a destination can also be a key motivator in attracting business to the destination, for example, the wealth of the Burren to county Clare. Therefore the quality of success of these interrelationships depends not only on the visitor attraction itself, but its contribution to the development of the critical mass of the destination product offering itself. Within the business tourism context, visitor attractions may also be an important part in the decision to return to a destination for a leisure visit, thus attracting those elusive repeat visitors (Fyall, Garrod and Leask (2001).Visitor attractions may also play a crucial part in the revitalization of an area or destination, for example, Knock in county Mayo, this holy shrine attraction brings in thousands of visitors each year to the area. While a destination rarely survives long term on the basis of one attraction, it can be the key 'pump-primer' in more sustainable development of a destination, for example, the opportunities that became available within Knock to develop further their existing stock of internationally significant religious offerings. The visitor attraction of Knock has brought economic benefits and civic pride to the area.

Fyall, Garrod and Leask (2001), discuss how in considering the purpose of visitor attractions within a destination, it is not only important to consider the views of visitors of a destination. The needs of the local population must also be met and may play a more significant role in the success of an attraction, particularly in rural areas, where their support for repeat visits, staffing, recommendation and participation may be vital. There is also the issue of social inclusion to be considered, to encourage cultural awareness within the local population and meet educational objectives. The maintenance of specific cultural identities and practices can often only be achieved via the involvement of those from the local population.

3.5 Visitor attractions, points, lines and areas

Tourism attractions are "all those elements of a 'non-home' place that draw discretionary travellers away from their homes" (Lew 1987:554). According to MacCannell (1976:109), tourism attractions consist of three components: tourists, a site to be viewed, and a marker or image which makes the site significant. MacCannell's views have been

built upon by Leiper (1990), who discussed the nature of tourism attraction systems. Tourism attractions may be classified in many ways. Examples of such classifications include: natural, human-modified, and human-made; natural and built; resource-oriented, intermediate, and user-oriented (often reflecting their distance from centres of demand); international, national, regional, and local (reflecting their ability to draw visitors from a variety of distances); indoor and outdoor; public or private (reflecting the attributes of the authority responsible for their operation); permanent, seasonal, or occasional (reflecting the temporal characteristics of their availability); and more. Lew (1987) has presented a number of typologies of attractions grouped into three broad categories: ideographic, organizational, and cognitive. The first stresses environmental characteristics, the second emphasises spatial characteristics and carrying capacity. It is suggested here that attractions can be divided into three types based on their spatial characteristics: points, lines, and areas.

3.5.1 Point attractions

Point attractions require large numbers of visitors to concentrate in a small area, for if the point is not visited then the attraction is not experienced. Examples of such sites include waterfalls, spas, temples, monuments, historic and archaeological sites, museums, galleries, theatres, and many sporting events. However, there are associated dangers of congestion, over-commercialization, reduction in the quality of visitor experiences, and occasional destruction of the resource. This problem can be seen at Tanah Lot in Bali, Indonesia, where the sanctity of an important temple is threatened by the construction of tourism accommodation in close proximity to a religious site which is, simultaneously, an attraction (Cohen 1993). This indicates that point resources may easily be over-commercialized by private sector enterprises and that strong actions may be required by the public sector to protect the resource and associated visitor experiences. One way to do this is to give careful consideration to the setting in which the point resource is located and, possibly, to discourage the development of commercial enterprises immediately adjacent to the site Wall (1997). This leads into the next section of linear attractions.

3.5.2 Linear attractions

According to Wall (1997), linear resources include coastlines, lakeshores, rivers, scenic routes and trails, and landforms such as the Niagara Escarpment in Ontario. Some of

these resources are attractions with linear properties; others are routes which channel visitors along particular paths. In both case, large numbers of visitors are concentrated along a narrow strip of land or a transportation corridor. Linear resources tend to concentrate on visitors but not to the same extent as point resources. This is due to the fact a line is two-dimensional and, as opposed to a point, encourages some dispersal. The concentration of visitors may still be sufficiently great to attract considerable commercial development which can lead to destruction of the resource. For example, coastlines in parts of the Mediterranean and Hawaii are lined with tourism facilities and numerous beach resorts in many parts of the world have introduced engineering solutions in an attempt to halt beach erosion and protect dune systems Lew (1987). Many highways in the United States are lined with advertising. In Bali, the official excursion routes which were designated to facilitate the movement of visitors into the interior of the island to experience the magnificent landscape and culture are so busy with traffic and lined with structures that it is difficult to see the landscape which was the original reason for their promotion.

A superior experience may now be gained by selecting non-designated parallel routes which are not lined with buildings Cohen (1993). Linear resources can easily become over-commercialized because large numbers of users are drawn to narrow strips of land and water. The enforcement of set-backs is often a useful strategy in coastal locations but, more generally, the breaking up of the lines into a series of nodes and links, or nodes and less developed or undeveloped areas, may be the appropriate strategy to pursue. In these ways, parts of the resource are protected, visitors are provided with access to a variety of experiences, and visitor facilities and commercial enterprises are concentrated in the nodes.

3.5.3 Area attractions

Wall (1997), carries on to discuss that areas may attract large numbers of people but their spatial extent may permit and even encourage the wide dispersion of visitors. Such places include parks and protected areas, wilderness, and scenic landscapes. The extensive nature of the resources and, sometimes, the nature of the experiences being sought by visitors, which encourages them to seek isolated or remote locations, mean that there are few dense concentrations of visitors and, thus, their commercial exploitation may be more challenging to potential entrepreneurs. In such locations it may

be necessary to create visitor concentrations, for instance at access points, at scenic overlooks, or at interpretation centres, to impart information to visitors, to monitor them, and to provide facilities which they may require, such as restaurants and accommodation. It is in such locations within or, preferably, adjacent to the area resource that commercial opportunities are most likely to be successful.

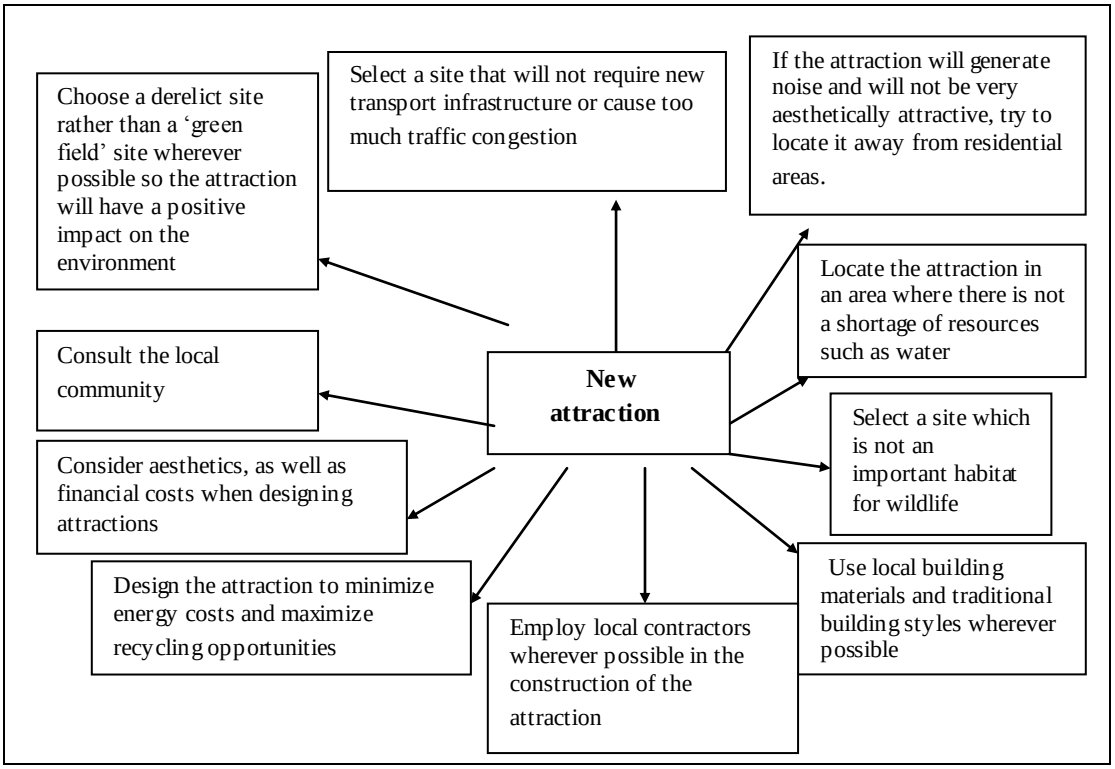
Wall (1997), continues on to discuss that such claims could be made for Gatlinburg, adjacent to the Great Smoky Mountains National Park. However, the concentration of many visitors in a limited number of commercial centres may expedite their management, allow greater access to visitors by the business community, and leave much of the area relatively unexploited for those in search of lower intensities of use. The three types of attraction-points, lines, and areas-can be viewed as occurring at different scales. Thus, for example, at the scale of a country, destination areas, such as coastal resorts or national parks, may be viewed as a series of points. On the other hand, a single destination area may be viewed as a combination of points, lines, and areas, or as a series of nodes and links.

An attraction, such as a theme park or museum, can also be viewed from these perspectives. Thus, in summary, while extremely simple, this conceptualization is a useful way of viewing a wide range of heterogeneous tourism attractions because it encourages consideration, at the same time, of specific attributes of the resource, visitors' behaviours and spatial distributions, the potential for commercial exploitation, and associated planning and management strategies.

3.6 Sustainable development in visitor attractions

According to Swarbrooke (1999), visitor attractions can contribute positively to sustainable forms of tourism. One of those forms of tourism includes the development of new attractions. A major problem with most attractions is that they are designed for a single, specific purpose and are therefore very difficult to adapt to other uses, for example if a theme park fails it would leave a serious problem of a huge derelict site. Figure 3.2 illustrates the issues which need to be taken into account when new attractions are developed.

Figure 3.2 Key issues in the development of new visitor attractions



Source: Swarbrooke (1999).

Swarbrooke (1999), takes into account all the key issues in the development of a new visitor attraction in figure 3.2. The next section discusses Fáilte Ireland overview of the attraction sector.

3.7 Fáilte Irelands' overview of the attractions sector

Publicly owned and/or operated 24 facilities accounted for (49%) of 41 respondents, and festivals (i.e. specific facility-less attractions) accounted for 20%. Similarly to the previous sectors, only 44% of those surveyed felt that tourism had a negative environmental impact, and (of those who did) 25% considered the impact to be high. The attractions sector considered their environmental knowledge to be reasonably high – 59% of those surveyed thought they were fully or reasonably aware of relevant environmental legislation. In the attractions sector 32% of respondents claimed to have an environmental programme in place, with 9% having a supporting environmental policy in place – both of which are well below the average response from all surveyed sectors, in fact the lowest of the four industry sectors examined. This is further underlined by the relatively poor performance of the sector in relation to monitoring of environmental performance in relation to energy, waste management and water use, at

46%, 46% and 39% of respondents respectively and the lowest of all respondent sectors in the survey for energy and waste management.

Drivers: The survey found that the top three overall drivers for improved environmental performance in the attractions sector were: joint (1) waste costs 94%, joint (1) energy costs 94%, and (3) marketplace demands 91%.

Cost*:* There is a significant disconnect between what this sector is saying and what this sector is doing, as evidenced by their identification of costs as a driver, but 'falling down' significantly in terms of acting on the driver in terms of an environmental policy, programme or monitoring system.

Environmental Legislation and/or Regulation: Though 82% thought legislative compliance was an important driver for improved environmental management, the proportion that considered that increased enforcement and regulation was an important driver was 75%.

Competitive Advantage: Similar to other sectors, though (energy and waste) costs were seen as the most important drivers for improved environmental performance, only 39% of those polled considered that improved practices (in this context) would/could give them a competitive advantage over their commercial rivals – the lowest percentage of all the sectors.

Marketplace Demands*:* Those surveyed revealed that they considered marketplace demands as the third most important driver (91%) for improved environmental management in the sector. However, 64% of the sector surveyed had no record or intention of communicating environmental information to customers.

Stage of Implementation: As discussed earlier, analysis of the survey findings, allied with evidence from discussions carried out during the project, suggests that: 1. Awareness within the sector of environmental issues is low-medium; 2. Sector-specific information on how to improve environmental performance doesn't appear to exist, at least nationally (with the exception of Fáilte Ireland's environmental guidelines for festivals and events); 3. Access to sector-specific training for employees/managers on managing environmental impacts is not currently available; 4. There are no sectoral initiatives on improving environmental performance; and 5. There are no sector-specific awards or certification schemes for good or exceptional environmental management available nationally.

Issues: The three greatest environmental problems identified by the sector during the survey, which have an impact on the sector, were (in order of priority): (1) traffic congestion, (2) litter and (3) poor planning. These were the only issues (of 11) that over 50% of the respondents considered were locally important environmental issues of high or medium-scale impact. It is clear that this sector is conflicted on the environmental agenda – they clearly recognise that there are cost drivers that should motivate action, but it is not yet happening to a significant degree. With public sector control of a major proportion of this sector, (in particular, within the top 50 attractions in Ireland, of which 31 are publicly operated), a targeted initiative in this bloc (specifically within the OPW and the National Museum) of the sector should produce a very significant short-term positive change in attitude and action on environment.

3.7.1 Driving best practice in the attraction sector

According to Fáilte Ireland (2007), there has been very limited development in environmental best practice in the attraction sector and the drivers are very weak. Attractions are not major consumers of energy or generators of waste and as such do not benefit from potential cost saving to the same degree as the accommodation sector. A significant number of top 50 attractions are the responsibility of the Office of Public Works. While these properties are managed in accordance with the policy of the OPW there is no evidence of a specific environmental programme.

A major impetus to driving environmental management in the activity sector would be achieved by involving the Office of Public Works in a specific programme. Fáilte Ireland should work closely with the Office of Public Works and National Museum to drive environmental management through the range of properties for which they are responsible. The objective will be to ensure that all such properties achieve best practice and potentially future environmental accreditation (refer to Recommendation 2), thereby creating a critical mass in the attraction sector, thus attracting interest/commitment from non public-sector attractions. It is particularly important that leadership is given by the Top 50 attractions and it is recommended that each should be encouraged to prepare conservation and management plans for their sites where appropriate, to ensure that the environmental/heritage/cultural significance of the attraction is maintained and enhanced into the future and that the tourism objectives are compatible with the conservation objectives of each site.

3.8 Visitor impacts

According to Fyall, Garrod and Leask (2003), the dilemma for visitor attractions is that generally speaking, the greater the exposure of the site to visitors, the greater is the potential for negative visitor impacts to arise. The reality of such impacts not only threatens economic viability but also raises serious questions about the sustainability of the attraction. If today's visitors damage the things they come to visit, then those things may not be there for future generations to appreciate, enjoy and learn from. Mathieson and Wall (2006), describe the environment of the host region as crucial to the attractiveness of all tourist attractions, in terms of natural resources, ecosystems, cultural and commercial attractions in cities and they all form an important backdrop in all tourist activities.

Historic buildings for example are under constant threat from the natural elements such as the effects of pollution, the risk of fire and the ravages of time. Visitor impacts can seriously exacerbate such problems. An example of this is in Egypt, where the growing number of visitors to the Valley of the Kings near Luxor, is thought to have been responsible for a major roof collapse in the tomb of SETI 1. The presence of visitors at such fragile sites is clearly a mixed blessing in terms of achieving and maintaining sustainability. While visitors bring the revenues that many sites so badly need to fund their conservation and restoration efforts, they also bring with them impacts that can make the need for such efforts all the more real and urgent. Sustainability requires that these contradictory demands be tackled effectively. Visitor attractions has introduced a form of visitor management, the aim being to moderate the impacts of visitors while still enabling them to come onto the site, interact with whatever is to be found there and achieve a satisfying experience from their visit (Fyall, Garrod and Leask (2003). The development of the green print will aid attraction managers at keeping sustainability at the top of their agendas for the future success of their attractions.

3.9 Sustainable visitor impact management frameworks for visitor attractions

According to Mason (2003), managing visitors is one of the most important ways of managing the impacts of tourism on the environment and also the socio-cultural and economic impacts. It is viewed as the most significant way of reducing the negative impacts of tourism. It is often used to divert mass amounts of tourists away from 'honey pots' and used to avoid the negative impacts at sites by 'hardening' (resurfacing paths

and footpaths), or by schemes such as ‘park and ride’, used to keep cars away from the immediate environment of an attraction. Regulating visitor numbers can also involve education. This process is the dissemination of information about a site and also about the social and environmental factors relating to the particular site Swarbrooke (1999). In contrast (Dowling, 2002; Moore, 2002; and Newsome, 2002) view planning for visitor use essential if natural areas are to be managed in responsible and cost-effective ways. Planning allows managers to define what experiences visitors will have, the experience they want to produce, the visitors they want to attract, and the limits to environmental modification deemed acceptable. There are three main ways of managing visitors and their impacts on the sites environment, as can be seen in the following table 3.5;

Table 3.5 Three ways to manage visitors and their impacts on a sites environment

Controlling the number of visitors, either by limiting numbers to match capacity, or spreading the number throughout the year, rather than having them concentrated in time in a focused ‘tourist season’
Modifying tourist behaviour
Adapting the resource in ways to enable it to cope with the volume of visitors and hence become less damaged.

Source: (Dowling, 2002; Moore, 2002; and Newsome, 20020.

In the first point, controlling the number of visitors, the first task is to determine the carrying capacity of the attraction. The quality, experience and ambience of the attraction are threatened by overcrowding of visitors when actual physical damage occurs, irreversible damage occurs or the local community suffers unacceptable side-effects Mason (2003). Managing traffic can be achieved by means of positive routing of vehicles, clear parking strategies, park and ride schemes, the use of public transport, road closures, traffic calming and traffic control systems. The following table 3.6 lists how visitor behaviour can be modified;

Table 3.6 Modification of visitor behaviour

Marketing and general information provision
Promotion to bring visitors out of season, to help spread the load
Promotion of alternative destinations
Niche marketing, to attract particular type of visitors
Providing visitors with specific information
The use of signs, travel information centres and information points/boards
The use of codes of conduct to enable a combination of education and regulation in the interpretation process.

Source: Mason (2003).

Some of Mason's points on the modification of visitor behaviour will be embedded into the checklist, for example providing visitors with specific information and the use of codes of conduct. In an attempt to promote and ensure protection of an attraction measures can be put in place such as those listed in table 3.7;

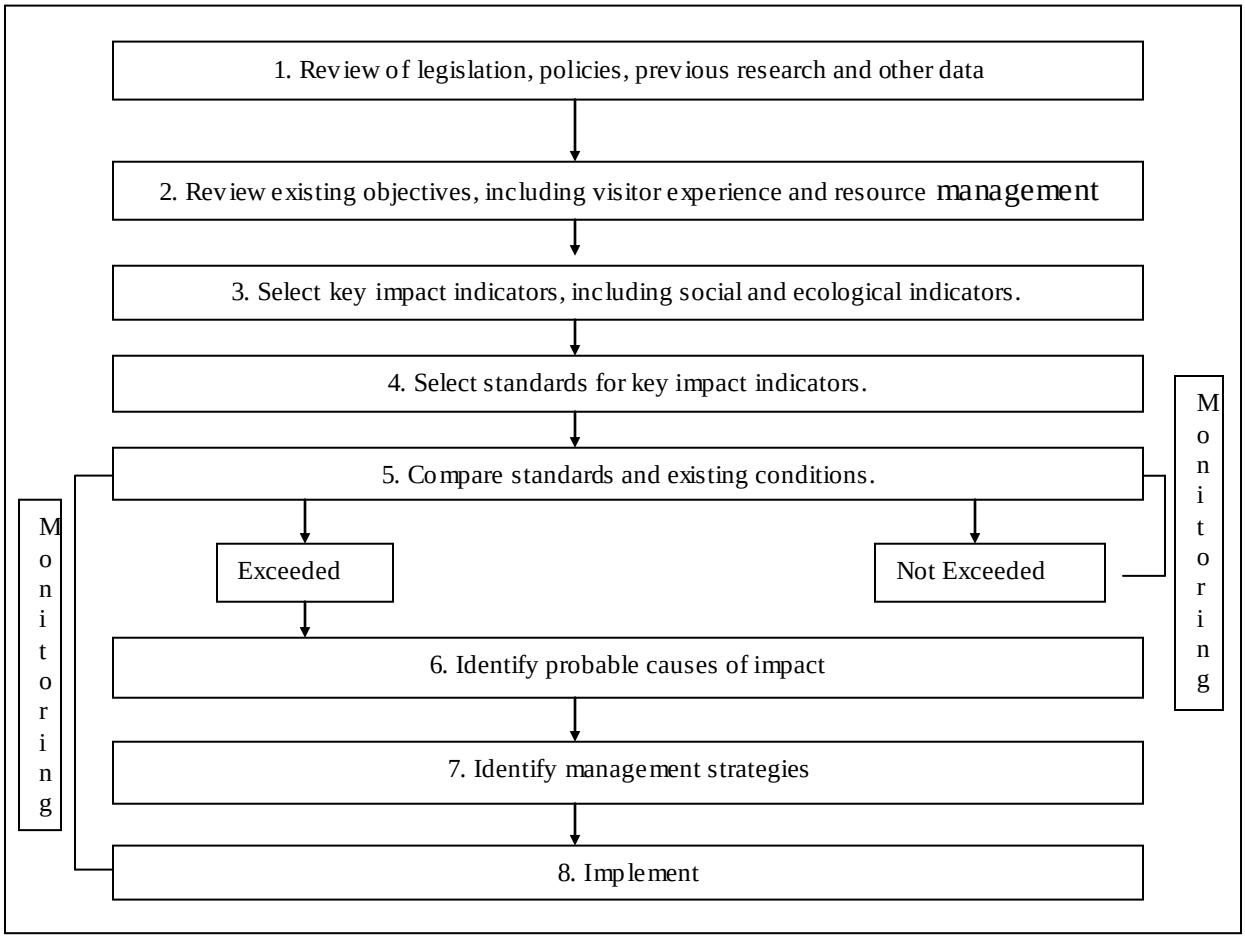
Table 3.7 Measures to be put in place in an attempt to promote and ensure protection of an attraction

The use of wardens, guides or guards to watch over the area, this is to prevent unruly behaviour, theft or deliberate damage
Restrict the use of the site, cordoning off areas to prevent access and re-growth
Protective measures, covering up carpets, stones, reinforcement of footpaths, wearing foot covers to protect floors
The building of replicas, there has been a suggestion to build a foam henge to protect the historic stone henge monument in south England.

Source: Mason (2003).

In addition to Mason's points on visitor impact management, a visitor impact management framework was developed for national parks by researchers working for the U.S. National Parks and Conservation Association (Graefe et al, 1990). Its purpose is developing strategies to keep visitor impacts within acceptable levels. The Visitor Impact Management framework consists of eight steps, leading the manager from reviewing existing data and management objectives, through selecting indicators and standards and using these to identify unacceptable impacts, to identifying causes and suitable management strategies. The following figure 3.3 shows the process for applying the Visitor Impact Management planning framework:

Figure 3.3 Process for Applying the Visitor Impact Management planning framework



Source: Adapted from Graefe et al (1990).

This framework can be adapted and utilized for the checklist designed specifically to help Irish attraction managers to convert their tourism product to a sustainable tourist attraction. However, building on the discussion by (Graefe, 1990; Mason, 2003), a more detailed framework to managing visitor impacts by, (Drumm, 2004; Moore, 2004; Sales, 2004; Patterson, 2004; Terborgh, 2004) was developed, describing what they believe are the best ways in which to manage visitor attractions. This framework has some very specific management options to help incorporate and design the framework for the checklist. These are outlined in figure 3.4;

Figure 3.4 Management Options for Managing Visitor Impacts

Reduce use of the entire protected area
Limit numbers of visitors in the entire protected area.
Limit length of stay in the entire area.
Encourage use of other areas.
Require certain skills and/or equipment.
Charge a flat visitor fee.
Make access more difficult to the entire area.

Reduce use of problem area
Inform about problem areas and alternative areas.
Discourage or prohibit use of problem areas.
Limit numbers of visitors in problem areas.
Encourage/require a stay limit in problem areas.
Make access harder/easier to problem areas, or improve access to other areas.
Eliminate facilities/attractions in problem areas, or improve in other areas.
Establish different skill and/or equipment requirements
Charge different visitor fees for different areas.

Modify the location of use within problem areas
Segregate different types of visitors – e.g., use zoning.
Discourage/prohibit camping or anchoring in certain sites, & encourage in others.
Locate facilities on durable sites in the problem area.

Modify the timing of use
Encourage use outside of peak use periods
Discourage or ban use when impact potential is high
Charges fees in periods of high use or of high impact potential

Modify type of use and visitor behaviour
Discourage or ban damaging practices/equipment
Encourage or require certain behaviour, skills, equipment

Modify visitor expectations
Inform visitors about appropriate protected use areas
Inform about potential conditions in protected area

Increase the resistance of the resource
Shield the site from impact
Strengthen the site

Source: (Drumm; Moore; Sales; Patterson; Terborgh, 2004).

It is important to highlight in context of the literature discussed, that the framework and management options will be merged and adapted in light of Irish management styles and legislation. This will aid the development of a practical tool which managers can use to sustainably manage the impacts of tourism on tourist attractions.

3.10 Sustainable management at visitor attractions

According to the EPA (2004), significant growth in the numbers of overseas tourists adds pressure on physical infrastructure and risks placing severe stress on the quality of the environment in the more popular tourist sites. With better information, visitor and area management can be more proactive and capacity issues can be better anticipated and responded to. According to Fáilte Ireland (2007), there has been very limited development in environmental best practice in the attraction sector and the drivers are very weak.

This research focuses on the triple bottom line of sustainability to ensure sustainable management at tourism attractions, as the United Nations World Tourism Organization states that: "Sustainability principles refer to the environmental, economic and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability"(UNWTO, 2002). Typical physical tourism impacts cause degradation of rich ecosystems around beaches, lakes, riversides, mountains, transitional zones, as these areas are usually attractive to both tourists and developers. Physical impacts from developers include construction activities and infrastructure development, deforestation and unsustainable use of land and marina development, in addition to this, tourist activities damage the environment through trampling, anchoring, and altering ecosystems and natural habitats.

Developing visitor attraction landscaping and managing operations with a respect to the local environment are not only often issues of legislation, but also give attractions a great opportunity to engage with the community. Using local produce of fish, meat, fruit, vegetables, dairy and others profit the local businesses financially. Sustainable use of resources, such as energy and water, and disposal of waste, benefit the local communities and reduce the environmental impacts that impose threats to the well-being of present and future generations.

3.10.1 Energy

One of the areas in visitor attraction businesses requiring immediate resource efficiency is energy management. Ireland's total primary energy requirement (TPER) is dominated by oils and gas, renewable energy is the lowest contributor. According to Fáilte Ireland, (2007) Total oil usage increased from 46% to 58% between 1990 and 2001; peat

contribution to electricity is declining. Climate change is the greatest environmental threat that world is facing today, and energy efficiency reduces the main Green House Gas (GHG) CO_2 emission into the atmosphere. Visitor Attractions have a great potential to reduce energy consumption. It can be achieved through both investing in new technologies, and low cost or no cost options. Many investments also have a relatively short payback period and are accompanied by immediate energy savings. For example, with energy efficient lighting energy costs can be reduced dramatically, by at least 50%, and it pays back very rapidly, in some cases in well under two years. Staff training and switch off policies can yield savings of at least 10%. Using energy-efficient control systems, such as manual switches, time scheduled systems and daylight and motion sensors, can yield energy savings up to 50% (SEI, 2009). Other considerations include maximum use of natural light, heat and ventilation, keeping fixtures and fittings clean, as dirt can reduce their output by half.

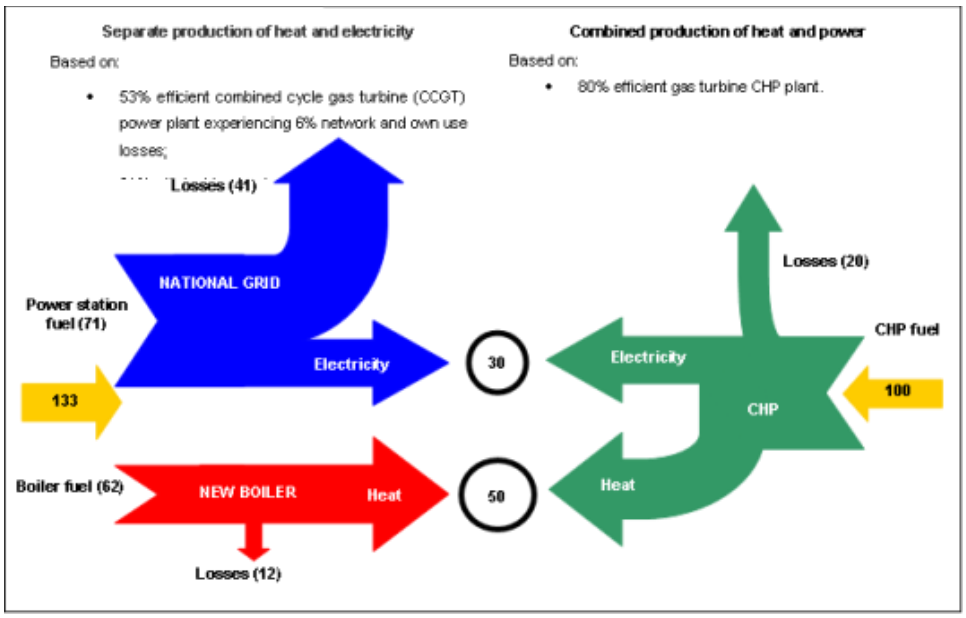
In terms of building management and maintenance, investment in Building Management Systems (BMS) should be worth considering, especially for large properties. At very basics, BMS control and maintain set temperatures throughout the building, but they can also be designed to provide a comprehensive control and monitoring of all major energy-consuming equipment. With this technology, for example, constant temperatures can be maintained if one side of the building is in sunshine while the other in shadow, lighting levels automatically adjusted in rooms or corridors with external windows, as well as times and temperatures of heating boilers can be regulated according to the external climatic conditions (Hospitable Climates, 2009.). BMS can also be set to make the best use of off-peak energy supply and linked to occupancy levels, or even detect an opened window and shut the heating (or air conditioning) off completely.

For most buildings, Heat, Ventilation and Air-Conditioning (HVAC) are one of the largest items of energy expenditure. In general, centralised air conditioning units which are usually linked into a BMS are generally more energy efficient than wall-mounted, independently operated packaged in-room systems which are usually found in smaller and medium businesses or in older buildings. It is important to ensure that the temperature set points are correct as over-heating or cooling your building is expensive – reducing heating temperatures by as little as $1^{o}C$ can reduce heating-related energy costs by as much as eight per cent (SEI, 2009). Badly set thermostats on heating and cooling

systems can result in heating and air conditioning units operating at the same time, therefore it is advisable to ensure at least 5^{o}C above the switch-off point of between them.

For hot water generation, more efficient than conventional boilers modular boilers are combined boilers with or without hot water storage; condensing boilers which reutilize the waste heat and maintain efficiency even at half load; combined heat and power boilers which also produce electricity; and solar hot water heating systems. Combined heat and power system (CHP) involves combined production of heat and power in a single process through taking advantage of the heat rejected in the thermo-dynamic conversion process. With CHP it is possible for individual businesses to generate their own electricity, whilst satisfying a large proportion of their heat and hot water demands. The technology has advanced to the extent that is suitable for units as small as 40 KW (e) (Hospitable Climates, 2009). CHP typically saves around 25% of the energy that would have been required to produce electricity in a conventional power station and heat in separate heat-only boilers (Figure 3.5.). A saving of emissions such as carbon dioxide (CO_2), Nitrogen Oxides (NOX) and Sulphur Dioxide (SO_2) contributes to reducing impact on the environment. CHP also affects the geographical distribution of emissions, as there will be a decrease in emissions from large electricity power stations and a lesser aggregate increase in emissions from smaller CHP stations (SEI, 2008). The following figure 3.5 shows energy savings made from combined heat and power.

Figure 3.5. Energy savings with CHP



Source: SEI, (2008)

Another consideration for visitor attractions is use of renewable energy. Renewable energy refers to energy that is generated in the environment naturally and continuously, and comes from supply that can be readily replaced, or will not run out for a million years. It is not extracted from finite reserves, and generates no or very little $C0_2$ emissions. There are several ways how an attraction can utilize renewable energy, for example, a smart building design and refurbishment can capture natural light and heat making maximum contribution to lighting, heating and ventilation systems. Secondly, investment can be made in small scale renewable energy technologies, such as solar thermals, photovoltaic technologies, small scale wind turbines, bio energy, hydro energy, and heat pumps.

Finally, attractions which have no possibilities to invest in their own renewable energy technologies can still use it by purchasing green energy from suppliers. Using renewable energy not only minimizes the environmental impact of the business and reduce CO_2 emissions in the atmosphere, it also increases environmental and social images of the attraction and provides it with a constant and reliable supply of energy that is not a subject to global economic fluctuations Font (2003), SEI (2008). Also Carbon offsetting allows attractions to reduce, displace or offset the impact of the carbon emissions associated with energy consumption in their operations. Carbon offsetting involves planting trees, investing in or donating to companies and organisations that are developing renewable energy technologies or buying energy efficient technologies and

donating them to developing countries SEI (2008). Carbon offsetting is a good way to demonstrate that the business is serious about current and future risks posed by climate change and to improve public image; it can also be offered as an option for guests, especially in the business and conference sector, to off-set the impacts of their travel to the destination, therefore could be used as a marketing tool to broaden the market appeal for the business.

3.10.2 Water

Water conservation is increasingly becoming an area of concern in the attraction sector. Water consumption is doubling every 25 years and in many regions around the world this resource is becoming very scarce. The world's potable water supply is at risk and the question is not whether there will be major water shortages, but rather when those shortages are going to have an impact worldwide. Water is a plentiful resource in Ireland, and the problems are mainly in terms of quality rather that quantity. The Water Framework Directive (WFD), introduced in 2000, sets a framework for comprehensive management of water resources in the European Community. It addresses inland surface waters, estuarine and coastal waters and groundwater. The fundamental objective of the WFD is to maintain 'high status' of water where it exists, preventing any deterioration in the existing status of waters and achieving at least 'good status' in relation to all waters by 2015 (Directive 2000/60/EC). Member States will have to ensure that a co-ordinated approach is adopted for the achievement of the objectives of the WFD, which as outlined by EU WFD Ireland (2008), can be seen in table 3.8:

Table 3.8 Objectives of the Water Framework Directive (WFD)

To protect and enhance the status of aquatic ecosystems,
To promote sustainable water use,
To provide a sufficient supply of good quality surface water and groundwater as needed for a sustainable water use,
To provide for enhanced protection and improvement of the aquatic environment by reducing of discharges, emissions and losses of priority substances,
To contribute towards mitigating the effects of floods and droughts,
Protect territorial and marine waters,
To establish a register of protected areas e.g. for protection of habitats or species.

Source: Water Frameworks Directive Ireland (2008).

In Ireland there has always been plenty of water available at little or no cost. This has changed since the water courses have become increasingly polluted and require

treatments, hence, investments in new systems and their maintenance imply increasing costs for local authorities to operate them (GHA, 2008). There are no water charges for domestic water use, but businesses are being charged for both the supply and treatment.

Attraction businesses can be a cause of water pollution through disposal of water and waste through drains which are cracked or leaking, from septic tanks which are not adequately maintained and may allow sewage to seep into water courses and through run-off from chemicals used on golf courses, as well as inadequate storage of fertilizers and pesticides (Fáilte Ireland, 2007). With rising water rates, as well as increasing prices of the energy required to heat water, there is a great opportunity for attraction managers to reduce their operating costs and environmental impact through water efficiency programmes and technologies.

Water savings can be achieved by reviewing and changing cleaning procedures, such as mopping floors using buckets, avoiding pressure hoses and switching from wet or steam carpet cleaning methods to dry powder methods. Maintenance of water supply systems is essential. Water supply system should be checked for leaks and any unnecessary flows turned off, dripping taps, leaking toilets be should be repaired. A cold tap with a slow drip could cost a business up to €16 per annum, while a hot with a fast running leak – up to € 1,700 per annum (GHA, 2008). Dishwashers if applicable to the attraction, for the example in a visitor centre restaurant should be operated at full loads. In terms of investing into new technologies, considerations should be given to low-flow and dual flush toilets, flow restrictors for pipes and aerators for taps and showers, low-flow showerheads and timers and sensors on urinals.

Properties with swimming pools, if applicable to a particular attraction, for example, a castle hotel attraction, can use a pool cover to reduce evaporation when pool is not being used. By lowering the water level in the pool, splashed-out water can be reduced. In landscaping and gardening, employing water-wise or xeric gardening techniques and plants, and using grey or green water for irrigation, may be seen as an advantage, although the Irish climate does not impose any pressures in terms of irrigation of outdoor gardens, as precipitation levels seem to be more than sufficient.

3.10.3 Waste and recycling

Finally, waste has an impact on the environment in many ways. It includes issues associated with waste disposal, such as need for landfill, release of methane and potential air, soil and water pollution. It also contributes to a loss of valuable resources such as card, plastic and glass. Ireland ranks as the largest per capita generator of municipal waste in the EU, EPA (2004), (2007). There are several pieces of legislation regarding the waste issue pertaining to attractions across Ireland. These can be seen in the following table 3.9 from the Irish Government Department for the Environment (2011).

Table 3.9 – Waste Legislation pertaining to attractions across Ireland

- Waste Management (Batteries and Accumulators) Regulations (2008)
- Screening Regulatory Impact Assessment on Waste Management (Batteries and Accumulators) Regulations 2008)
- Waste Management (Landfill Levy) Regulations 2008
- Waste Management (Collection Permit) (Amendment) Regulations 2008
- Waste Management (Environmental Levy) (Plastic Bag) Amendment (No 2) Regulations 2007
- Waste Management (Packaging) Regulations 2007
- Waste Management (Shipments of Waste) Regulations 2007
- Waste Management (Tyres and Waste Tyres) - Regulations 2007
- Waste Management (Restriction of Hazardous Substances in Electrical and Electronic Equipment) Regulations, 2005
- Waste Collection Permit Regulations
- Waste Management (Farm Plastics) Regulations, 2001
- **Waste Management (use of Sewage Sludge in Agriculture) (Amendment) Regulations, 2001**

Source: Irish Government Department for the Environment (2011)

The most important effect this legislation has on attractions is that the waste creators are responsible for its disposal. Waste Management Packaging Regulations that came into force in 2003 have set requirements for caterers to take particular actions regarding their packaging waste. The specified packaging materials that must now be recycled are glass, cardboard, paper, steel, aluminium, plastic sheeting and wood EPA (2004). The main feature of the new Regulations is the requirement on all attractions that are placing packaging on the market to segregate specified waste materials arising on their premises and to have it collected by authorised waste operators for recycling (S.I. No. 61, 2003). Major producers (more than 25 t per annum) have additional obligations to either join the compliance scheme Repak, or register for Self-Compliance with the Local Authority, latter meaning that the business will accept or collect back packaging waste.

For businesses waste management costs have increased considerably since 2000. The key principle for waste management is to follow the waste hierarchy – reduce, reuse, recycle. Good waste management requires strong management commitment and involves the following: setting a waste management strategy; conducting waste stream analysis and waste audit; implementing waste management programme and staff training; and continuous monitoring and reviewing the effectiveness of the programme (IHF, 2008). According to the Green Hospitality Award (2008), for businesses to reduce the waste costs, they must adopt the following points from table 3.10:

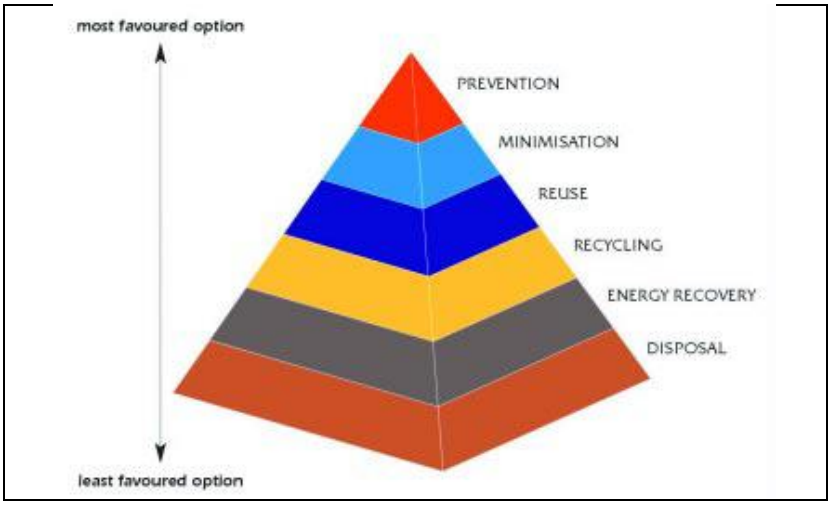
Table 3.10 Green Hospitality Award points for businesses to reduce their waste costs

▪ Organised, covered and clean waste separation and storage area ▪ Waste management equipment, e.g. baler, wheelie bins, wheelie bin compressors, etc ▪ Internal procedures regarding waste separation and its delivery to the waste area ▪ Specified organic waste management process ▪ Good records of actions and suppliers costs, contracts and agreements.

Source: Green Hospitality Award (2008)

Another material that will be banned from the landfills in the future is cardboard as it is also biodegradable and fully recyclable. Although it is not so straight forward as low grade cardboards are difficult to recycle due to their short length fibres, and might be more suitable for composting. Furthermore, food holding cardboards could present a problem of food contamination, and if so, needs to be separated from the rest. Papers, office waste and metals can be all separated and recycled. Aluminium is the commonest metallic element on the earth; therefore similarly to glass the issue is not in depletion of this resource. Yet, it is easily recyclable and the benefit is significant as it saves 90% of energy used in production of the raw material. Some companies are collecting plastic; however, this infrastructure in Ireland needs to be addressed. The main potential in managing plastic waste stream lies in moving upwards on the waste hierarchy (Figure 3.6.) and shifting focus to waste minimisation and prevention (GHA, 2008). The hazardous waste and WEE typically makes up a small percentage of the waste stream of attractions but by legislation it has to be disposed of in a safe manner.

Figure 3.6. Waste hierarchy



Source: EPA (2004)

The type of waste produced in attractions also creates an opportunity to build relationships within local communities. Some items can be replaced only because standards require more advanced products to be introduced, or discarded with very minor or no defects. By donating old equipment, and other goods not used in their operations anymore, this can strengthen their public image, reduce waste and increase the life cycle of the commodities.

3.10.4 Transportation

Transport is an important and increasing source of greenhouse gas emissions that are contributing to global warming. For example, a return flight for two from Dublin to Los Angeles produces considerably more CO2 than the average new car does in a whole year. A recent report suggests that aviation is responsible for 75% of all greenhouse gas emissions of all EU tourism transport (Peters et al, 2007). Traffic related problems include pollution from exhaust fumes, congestion, damage to verges and lawns due to poor parking and vibration damage to buildings (ETB, 1991). Newgrange in Ireland has overcome traffic related problems by providing a car park at the visitors centre and a shuttle bus service to the attraction. Theory suggests that traffic jams and people congestion in busier months could be avoided or easier to organise and manage if such schemes are put in place. Poor transportation planning may result in increasing physical impacts to the natural environment at attractions. Managers could save costs and make a profit by adapting to simple changes such as switching to alternative fuels for the transport at their attractions.

3.10.5 Biodiversity

Attractive landscapes such as sandy beaches, lakes, riversides, and mountain tops, are often transitional zones, characterized by species-rich ecosystems. Physical impacts to an environmental landscape include the degradation of such ecosystems. It is important that these impacts are managed in a sustainable manner for future use Fáilte Ireland (2007). Physical impacts can include trampling of vegetation by tourists on foot, on horses, in off-road vehicles, and camping. This type of impact has been found in woodlands, grasslands, on cliff tops and on beach dunes (Edwards, 1987; Karan and Mather, 1985). Trampling leads to the destruction of plant life and erosion of paths (Edwards, 1987). A number of ecological problems can occur, such as the alteration of species composition and changes in ecological succession.

Disposing of waste into the marine environment is also detrimental to sea life, especially when it is toxic (Miller, 1987). The introduction of invasive species can be a huge problem to a visitor attraction. They cost the European economy €12.7 billion per year. It can be a huge expense to eradicate an alien species once introduced and spread at an attraction. Zebra mussels are an example of an alien species introduced to the Irish waterways. They smother native clams and mussels and cluster around warm water outflow pipes from power stations. Mitigating the damage caused by zebra mussels has so far cost the USA 5 billion dollars (Marine Conservation Society, 2001). Biodiversity planning is very important at attractions as it will ensure minimal physical impacts to the natural environment. The next section discusses the importance of training at attractions.

3.10.6 Training

Training is hugely important for all personnel at attractions to ensure they are aware of environmental impacts at the attraction. It is also important in relation to ways in which they can contribute to avoid impacts and to assist in the education and dissemination of information to visitors on particular impacts. As stated by Fáilte Ireland (2007); "there is a need to consider both current and future capacity to address sustainability issues in programmes on offer and also to consider the availability of opportunities for staff development". As suggested by Kovacs and Innes (1990), tourists may have less impact on wildlife if they are to be restricted during certain times of the year, for example breeding season and educated on appropriate behaviour toward wildlife. This is an example of the importance of training of employees on sustainable practices for wildlife.

In order for the tourist to be educated on wildlife at a certain attraction, the staff needs to be trained in this area to teach the tourist.

3.10.7 Monitoring impacts

According to the Convention on Biological Diversity (2009) long-term monitoring and assessment provide a means for detecting adverse effects on the environment that may arise from tourism activities and development, so that action can be taken to control and mitigate such effects. Monitoring is fundamental to understanding the relationship between a tourism business and its surrounding environments, and is a crucial part of achieving ecological sustainability (Queensland EPA, 2002). As Shackley (1999) suggests the problem of overcrowding is highly dependent on the capacity of the site to receive visitors. When the site becomes overcrowded it makes it increasingly difficult to move around, therefore causing queues at bottlenecks. The impacts of overcrowding are typically evidenced by visitors feeling that they are unable to appreciate the character or ambience of a site, a reduced opportunity for visitors to do and see everything they want to and consequent negative impact on visitor satisfaction. Monitoring is therefore important to avoid impacts such as overcrowding and negative visitor satisfaction at an attraction site.

3.10.8 Social/Cultural sustainable management

Impacts on the local community may result from the thoughtless and antisocial behaviour of visitors. The ETB (1991), discuss that this may range from visitors unwittingly trespassing on private property, to loutish behaviour by visitors who have consumed too much alcohol in the visitor attraction bar. Visitors in large numbers can also cause congestion in local facilities, such as shopping areas or leisure centres. As a result the local community can come to feel besieged by visitors and perceive them to have a negative influence on the local community. At the same time these impacts can run in the opposite direction with locals giving the visitors a negative experience by the way they treat the visitors. Burns and Holden (1995), describes one way in which visitors affect the host community, which is by means of the ‘demonstration effect’. This may be positive in terms of the host community adopting productive patterns of behaviour from observing the tourists.

In negative terms the locals can become resentful if they are unable to obtain the goods and lifestyles demonstrated by the visitors. This may result in a high number of emigrations from the area in search of the 'demonstrated lifestyle'. Another process, 'acculturation', may occur when the visiting period is prolonged and is deeper. Williams (1998) states; "Acculturation theory states that when two cultures come into contact for any length of time, an exchange of ideas and products will take place, that through time, produce varying levels of convergence between the cultures; that is they become similar".

3.10.9 Economic sustainable management

According to Stynes (1992) economic benefits and costs of tourism reach virtually everyone in a region in one way or another. Tourism activity involves economic costs, including the direct costs incurred by tourism businesses, government costs for infrastructure to better serve tourists, as well as congestion and related costs borne by individuals in the community. Tourism's economic impacts are therefore an important consideration in state, regional and community planning and economic development.

Cost savings are imperative for attractions in this economic climate. With effective sustainable management at attractions this is achievable through monitoring of energy use, water and waste volumes, and their costs. The implementation of energy saving systems, water and waste management systems and programmes can also attain cost savings. The use of alternative transportation fuels at attractions, biodiversity management plans and training on sustainable environmental practices can also accomplish cost savings.

3.11 Certification of attractions in Ireland

It terms of environmental certification, Ireland has not really had a nationwide ecolabel or other certification programme available for hotel sector. There is the Green Box – Ireland's first genuine ecotourism destination with a set of standards based on sound environmental practices highlighting all that the region and its people has to offer. The area of the Greenbox includes Counties Fermanagh and Leitrim, and the sub county areas of West Cavan, North Sligo, South Donegal and North West Monaghan. The natural beauty and unspoilt environment of the Greenbox has contributed to attracting a high concentration of 'green and ecotourism operators to the region. The Green Box Eco

Tourism Label has been designed to guide visitors travel choices and help them to choose promoters of ecotourism products and the experiences they provide Greenbox, (2008). It is relevant to all tourism sectors, except accommodation, provided that products are nature based and contain an element of personal interpretation or education for guests. Within the tourism industry, there is also Leave No Trace label - an Outdoor Ethics Programme - designed to promote and inspire responsible outdoor recreation through education, research, and partnerships. Leave No Trace is designed to promote this responsible behaviour through a series of seven principles. Any facility that displays this logo has signed up to this programme and promotes and supports seven principles of Leave No Trace. There are seven leave no trace principals which are in table 3.11;

Table 3.11 The seven principals of leave no trace Ireland

1 Plan ahead and prepare
2 Be considerate of others
3 Respect farm animals and wildlife
4 Travel and camp on durable ground
5 Leave what you find
6 Dispose of waste properly
7 Minimise the effects of fire

Source: Leave no Trace Ireland (2011)

These seven principals set out in table 3.11, assist people to understand their impacts to the environment when conducting outdoor recreation activities. The principals also help people to minimise their impacts while still enjoying their activities. Leave no Trace Ireland (2011). The next section discusses the EU flower eco-label, along with ISO 14001, EMAS and GEE.

The EU Flower is a symbol of European Eco-label, which is a voluntary scheme aimed to encourage businesses to market products and services that are kinder to the environment and for European consumers to easily identify them. The Flower scheme is part of a broader strategy that seeks to promote sustainable production and consumption. As outlined by EC (2008), the key aims of the EU Flower ecolabel can be seen in table 3.12:

Table 3.12 Key aims of the EU Flower Ecolabel

▪ To achieve significant environmental improvements ▪ To ensure the credibility of the award ▪ To encourage manufacturers, retailers and service providers to apply for the award ▪ To encourage purchasers to buy products and services with the award ▪ To improve consumer awareness and behaviour regarding the environmentally optimal use of products and services.

Source: EU Flower Ecolabel (2008)

The EU Flower signifies high environmental performance in all kinds of tourist accommodation services. To obtain this certification, accommodation providers must meet key criteria relating to implementing measures on water saving, energy efficiency, renewable energy, waste separation and disposal, reduced usage of chemical substances and environmental communication and education. There are several benefits associated with acquisition of this eco label such as indication for high quality and environmental performance, eco-efficiency for cost-advantages, sense of well-being, meeting the expectations of the guests and a tool for marketing reinforcement (European Ecolabel, 2008). Another certification scheme is provided by International Organisation for Standardization (ISO) that has developed over 17000 International Standards on a variety of subjects, and 1100 new ISO standards are published every year. ISO 14001 provides organisations with a structure to establish policy, to develop and implement an efficient EMS, and to comply with environmental legislation.

The intention of ISO 14001 is to provide a framework for a holistic, strategic approach to the organisation's environmental policy, plans and actions. An EMS meeting the requirements of ISO 14001 will enable an organisation to identify and control the environmental impact of its activities, products or services, to improve its environmental performance continually, to implement a systematic approach to setting environmental objectives, to achieving these, and to demonstrating that they have been achieved. ISO 14001 does not lay down levels of environmental performance; therefore the standard can be implemented by a wide variety of organizations. However, a commitment to compliance with applicable environmental legislation and regulations is required, along with a commitment to continual improvement (ISO, 2008). In Europe, the EU Eco-Management and Audit Scheme (EMAS) is a management tool for companies and other organizations to evaluate, to report and to improve their environmental performance. EMAS is similar to the ISO 14001, but is for use in the EU only.

Since 2001 EMAS has been open to all economic sectors including public and private services. To receive EMAS registration an organisation must conduct an environmental review considering all environmental aspects of its activities, products and services, establish an effective environmental management system aimed at achieving the organisation's environmental policy, carry out an environmental audit, and provide a statement of its environmental performance outlining results achieved against the environmental objectives and the future steps to be undertaken towards continuous improvement of the organisation's environmental performance (EC, 2008). For golf courses in Europe, Golf Environment Europe (GEE) Eco-Management Programme is available. GEE ECO Management is about building credible environmental activity and partnerships at local, national and pan European levels. The scheme is open to all sizes of golf facility on a voluntary basis.

The aim of the programme is to create a system more accessible to golf facilities across Europe, which allows flexibility for adaptation into different national projects and which ultimately encourages registration and accreditation via EMAS. It should be noted though that EMAS registration and verification is not a pre-requirement of the GEE ECO Management programme (GEE, 2008). Altogether, today there is a growing enthusiasm from the attraction sector regarding environmental resource management, mainly due to rising costs of energy and water supplies and waste disposal, as well as increased environmental legislation and growing public awareness.

The Global Sustainable Tourism Criteria (GSTC), was established in 2008. It is the global minimum requirements that any tourism business should aspire to reach in order to protect and sustain the world's natural and cultural resources, while ensuring tourism meets its potential as a tool for conservation and poverty alleviation. More than 170 US Cities have already adopted the Criteria. In Ireland the Guinness Storehouse has implemented the Sustainable Travel International Eco-Certification Programme (STEP), into its attraction and this is in line with the GSTC criteria. This is the first business in Ireland to receive such an award.

3.12 Towards a framework for managing the impacts of tourist attractions

According to Mason (2003), managing visitors is one of the most important ways of managing the impacts of tourism on the environment and also the socio-cultural and economic impacts. It is viewed as the most significant way of reducing the negative impacts of tourism. The absence of an existing framework that could be used to sustainably manage the impacts of tourism attractions in Ireland resulted in the development of a framework. This framework is in the form of a checklist in order to sustainably manage tourist attraction impacts in which is being created for the purpose of this thesis.

As the impacts of tourism were discussed in chapter two and were detailed in the end framework, it was necessary to construct a framework capable of incorporating the majority of themes which have emerged from the literature review in this chapter. The major themes from chapter three include, visitor attractions, the sustainable management at visitor attractions in terms of the use of energy, water, waste and recycling, transportation, biodiversity, training, monitoring impacts. The social, cultural and economic sustainable management at visitor attractions. Specifically, the framework needs to assess the major themes which emerge throughout the review of theory from this chapter. Therefore an outline of the framework is provided in this chapter in figure 3.7, with the final version as a checklist (Figure 7.2), being provided in chapter seven.

Figure 3.7 Towards a framework for managing the impacts of tourist attractions

1.Sustainable management at visitor attractions	4. 2.Sustainable visitor impact management at attractions
Adopt all government policies and legislation Adopt all tourism plans e.g. Fáilte Ireland environmental plans Adopt corporate social responsibility Adopt EU-Policy guidelines Energy -Energy management plan in place Water -Water management plan in place Waste and Recycling -Waste management plan in place Transportation -Alternative fuel sources Biodiversity -Biodiversity management plan in place Training -Training on sustainable practices for all personnel Monitoring impacts - Monitoring of visitor impacts Social/Cultural sustainable management - use elements of local art -purchase of local services Economic sustainable management -Local employment -Purchase of local goods Certification of attractions in Ireland	Conduct environmental impact assessments Visitor number control/carrying capacity Area protection and reduction of use of area Inform and educate about the area to aid visitors understanding of tourist impacts and the consequences of these impacts Use land use zoning/planning Encourage use outside of peak times and seasonality when impact potential is high Charge higher fees in high impact times and lower fees outside these times Use of environmental indicators/ green and brown/ local and global scale/ baselines and benchmarks Use of visitor impact monitoring Host community consultation and participation techniques Codes of conduct for hosts, tourists, community, government, industry

The above framework 3.7 is the second part towards the development of the sustainable management checklist for tourism attractions in Ireland. It is focused on two themes which have emerged from the theory and best practice guidelines established in the literature and will be joined with the final checklist in chapter seven.

The first theme is concerned with the sustainable management at visitor attractions. It outlines how the adoption of various industry and government plans, legislation and guidelines are necessary for sustainably managing an attraction. It also outlines key areas that need to be sustainably managed in order to save costs and the environment at an attraction. These key areas include energy, water, waste, recycling, transportation, biodiversity, training, monitoring impacts at an attraction, social and cultural sustainable management and finally the economic sustainable management at an attraction.

Theme two outlines the sustainable visitor impact management at attractions. These visitor management techniques can be a successful way of averting negative impacts of

tourism. They are often used to divert mass amounts of visitors from particular hotspots thus helping to preserve that area. There are many visitor impact management techniques, for example, codes of conduct, area protection, visitor impact monitoring and carrying capacity. All the sections from the above framework 3.7 will be integrated as necessary into the final checklist.

3.13 Conclusion

There are many types of visitor attractions across Ireland. There are various purposes and roles of visitor attractions. One of which they can be used as an essential weapon in engaging in a competitive struggle for tourist businesses by attracting visitors to a particular destination or area. As these attractions can be the focal point of a destination it is important that they are sustainably managed to maintain future business. Fáilte Ireland has written an overview of the attractions sector in Ireland and discussed how they would drive best practice in the sector. However, there have still not been any sustainable management guidelines from Fáilte Ireland for tourist attractions in Ireland.

This chapter has outlines extensive literature on various methods of sustainably managing impacts at tourist attractions. If tourism is to stimulate the economy in Ireland and provide jobs for generations to come, then tourism attractions must be developed sustainably. Cost savings are imperative for attractions in this economic climate. With effective sustainable management at attractions this is achievable through monitoring of energy use, water and waste volumes, and their costs. The implementation of energy saving systems, water and waste management systems and programmes can also attain cost savings, whilst helping to sustain the environment. The use of alternative transportation fuels at attractions, biodiversity management plans and training on sustainable environmental practices can also accomplish cost savings. Environmental action will save attractions money. Once environmental action is in place, attractions can apply for certification with the hope of achieving an eco label, thus strengthening their competitive stance in their tourism destination.

These methods of sustainable management will be incorporated into a checklist developed from this research on how to sustainably manage a visitor attraction in Ireland. A sustainable visitor impact management framework for visitor attractions was developed at the end of this chapter and will be used to inform the design of the data

gathering tool in order to assess the level of sustainable management at the visitor attraction in Ireland. The research methods employed will be discussed in the next chapter.

*These are the latest figures at time of print

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction of research

The purpose of this research is to assess the current sustainability of key tourist attractions in terms of energy, water, waste, recycling, transportation, food, training and the monitoring of environmental performance at key tourist attractions within Ireland. The research aims to develop a sustainable checklist for managers of these attractions which could reduce running costs and facilitate them in converting their products to sustainable tourist attractions. It can also be used in the day to day operation of the attractions to aid the transition to sustainable tourism within Ireland.

This thesis determines whether a checklist can be developed in order to manage and maintain tourism attractions in a sustainable manner and utilised by attraction managers. To this end the following aims were developed for this research;

3. To critically examine the current sustainability of key tourist attractions in terms of, water, energy, waste/recycling, monitoring, training, transportation, biodiversity, social/cultural sustainable management and economic sustainable management.

4. To develop a generic sustainable tourism checklist for tourism attractions which could reduce running costs and facilitate managers in converting their products to sustainable tourist attractions.

In order to achieve these aims the following objectives were developed;

(a) To conduct an in-depth analyses and review of contemporary literature on impacts of tourism at visitor attractions.

(b) To determine the extent to which managers of tourist attractions would be willing to utilise a checklist to minimise the environmental impact of tourist's attractions.

(c) To produce a checklist which attraction managers can use when planning and also in the day to day operation of the attractions to aid the transition to sustainable tourism within Ireland

4.2 Research approach and methodologies

After careful consideration of the various research paradigms and methods available, the stance and contention of this study was formed. According to Jennings (1995), it has been increasingly noted that in order to obtain comprehensive tourism research, researchers use methodologies that encompass elements of both quantitative and qualitative paradigms using mixed and multi-methods. A multi-method approach is utilised here, it does not mix the methods but uses appropriate methods borrowed from qualitative and quantitative methodologies to answer the research question. This allows the research design to use methods from different paradigms, which in turn can complement, expand and triangulate the research.

One of the priorities of this research is to determine the methods utilised by the managers of tourist attractions to practice sustainable tourism. Therefore, in order to understand this process and its complexities with regard to sustainable tourism models, environmental audits and management practices, the research in essence attempts at a basic level to understand the human nature or behaviour of managers responsible to manage these tourist attractions. This research approach will be applied in a number of stages, initially the research will utilise a comprehensive literature review in order to ground the research in the current theory on the phenomenon being investigated. This will be followed by strategic qualitative open ended interviews with a representative cross section of attraction managers across Ireland who agreed to be interviewed. This in turn will be followed a quantitative approach to the research which will be initiated by a series of questionnaires with managers of tourist attractions.

Qualitative and quantitative data will be utilized to develop a checklist for the sustainable management of tourism attraction The analysis of the data gathered from each method will then be compared and contrasted in light of any new international literature available in order to draw the conclusion and recommendations of this thesis and develop the sustainable tourism checklist for tourist attractions. The next section discusses the various methods utilised and the procedure followed

4.3 Research design

The research design is planned to firstly answer the research question, which is to determine whether a checklist can be developed in order to manage and maintain tourism

attractions in a sustainable manner and utilised by attraction managers. The design is a logic that links data to be collected and conclusions to be drawn to the initial research aim and objectives. In order to answer the research question, this project involved both primary and secondary research and adopted an exploratory research strategy, which means that the research attempted to find out what was happening in the particular situation, to seek new insights, to ask questions and to generate ideas and hypotheses for future research (Robinson, 2002). Secondary data sources can vary in nature from statistical sources to documentary sources.

Documentary sources generally may be classified as cultural products or artefacts (Reinharz, 1992). Secondary data sources for this research included books and academic journals, as well as guidelines, fact sheets and other publications from various organisations in the industry. While primary data collection, essentially with human participants, is considered reactive, obtrusive and intrusive. Secondary data collection is described as non-reactive, unobtrusive and non-intrusive (Kosters, 1994). The literature review of secondary data was researched to create a theoretical framework for the study. Primary research, in contrast, collected data specifically for the particular research project being undertaken.

4.4 Qualitative approach

In order to determine whether a generic checklist would be utilised by attraction managers in order to manage and maintain tourism attractions in a sustainable manner, it was necessary first of all, to develop a checklist which was capable of incorporating the majority of themes which have emerged from the literature review. These ranged from sections such as the economic impacts of tourism to the social/cultural impacts of tourism right through to the environmental impacts. A selected number of ten attraction managers were interviewed due to costs and time restraints. These managers were interviewed using strategic qualitative questioning, which were open ended and allowed all managers to be asked the same qualitative questions in the same order. The answers were recorded and assessed for consistency and any emergent themes.

For example attraction managers were asked whether they would you be willing to utilize a sustainable management checklist in order to sustainably manage the attraction? The attraction managers responses were recorded and encouraged to speak further and give

their opinion on utilising such a sustainable management checklist for their attractions. Responses from the managers are quoted in the analysis chapter and are highlighted as follows, where attraction manager number two is quoted "Such a checklist would be very beneficial to my attraction".

4.4.1 Method

The method utilised for the qualitative approach consisted of writing up the strategic questions for the attraction managers. The questions put to the managers were for example, 'Would you be willing to utilize a sustainable management checklist in order to sustainably manage the attraction?' Responses to this question varied and it allowed the researcher to retrieve the necessary data and probe the managers for more in-depth viewpoints on sustainable management of tourism attractions, the sustainability stance of their own attraction and also whether or not they would be willing to utilise the proposed checklist in order to achieve and manage sustainability of their own attraction.

The transcripts from the interviews were assessed and any major themes emerging from the attraction managers are discussed in the analysis chapter. This is done in context of the literature and the quantitative analysis from the questionnaires.

4.4.2 Sampling and selection

A sampling approach of 'systematic sampling', was used for the qualitative research method. According to Lohr (1999), "Systematic sampling relies on arranging the target population according to some ordering scheme and then selecting elements at regular intervals through that ordered list". As it would be impractical due to time and cost restraints, to survey every tourist attraction in Ireland, a representative sample is required. The systematic sampling of the attractions interviewed can be seen in table 4.0.

Table 4.0 Systematic sampling of tourist attractions across Ireland

Location	Number of Visitors 2010
Dublin	365,000
Dublin	250,000
Westmeath	164,211
Mayo	112,195
Cork	75,000
Cork	58,978
Cork	45,000
Kerry	36,824
Wexford	30,485
Cork	26,000
Limerick	21,300
Kilkenny	18.690
Limerick	14,043
Cork	12,500
Galway	10,000
Roscommon	7,758
Clare	6,373
Kildare	5,000
Kilkenny	3,500
Wicklow	2,581

As a list of 200 tourism attractions across Ireland were collected from a Fáilte Ireland database for this research, a systematic sample of every twentieth attraction on the list was selected for the qualitative question, which amounted to ten attractions questioned.

4.4.3 Analysis

The writing up stage according to Strauss and Corbin (1998) helps clarify thoughts and elucidates breaks in logic. One of the interesting features of writing up is that emergent theory often becomes more refined. Fundamentally this stage is often just a matter of preparing a first draft by typing up the code and categories in sequence and integrating them into a coherent argument. The answers received from the ten attraction managers were transcribed and arranged in order of the questions. The responses were then assessed and categorised into various themes. Finally, the analysis and write up of the qualitative research was discussed in relation to current theory. This in turn allowed the researcher to generate findings and conclusions and make recommendations.

4.5 Quantitative approach

Quantitative method of research involves statistical analysis to draw conclusions. A certain degree of confidence would be used to generalize a survey population from a sample survey. Quantitative research is used to describe data collection techniques and analysing procedures that generates or uses numerical data. This method generally requires more respondents and has greater time constraints for completion, general used methods are surveys and questionnaires Brunt (1997). Questionnaires were used in this

research in order to collect quantitative data. This analysis will be conducted in terms of costs of energy, water, waste, recycling, transportation, biodiversity, training and the monitoring of environmental performance. It will also examine the processes followed to facilitate environmental audits within these attractions.

The research consists of over sixty questions, specifically designed to intricately analyse levels of water, energy and waste used by the attractions. The uses of Environmental Management Systems were identified, along with sources of energy used by the attractions. Transportation policy and monitoring were also determined. Furthermore, attractions are being assessed on biodiversity conservation, social/cultural management and economic sustainability. The questionnaires were conducted with the highest ranking managers of these attractions, where possible. Quantitative data from questionnaires was analysed quantitatively, with data entered into Microsoft Excel in table format, creating a data matrix.

4.5.1 Method

The questionnaire method was chosen as the best way to accumulate data from the tourism manager perspective on sustainable tourism management practices at attractions in Ireland. Categories were determined from the frameworks and discussed on the basis of a review of the extensive literature compiled. A copy of the questionnaire can be seen in appendix 4.0.

4.5.2 Sampling and selection

Sample design and execution need careful consideration of the goals of the research and resources available. Throughout the process, sampling theory guides the trade-offs between the resources available and the accuracy and precision of the information (Bickman and Rog, 1998). The selection of candidates for this research was defined by the aims and objectives of the thesis. As it would be impractical due to time and cost restraints, to survey every tourist attraction in Ireland, a representative sample is required. A good sample will be representative of the characteristics of the population from which it is drawn. The method of sampling chosen for this research was purposive sampling, "Purposive sampling is defined as choosing subjects because of some common characteristic" Patton (1990). The common characteristic for all the respondents of the

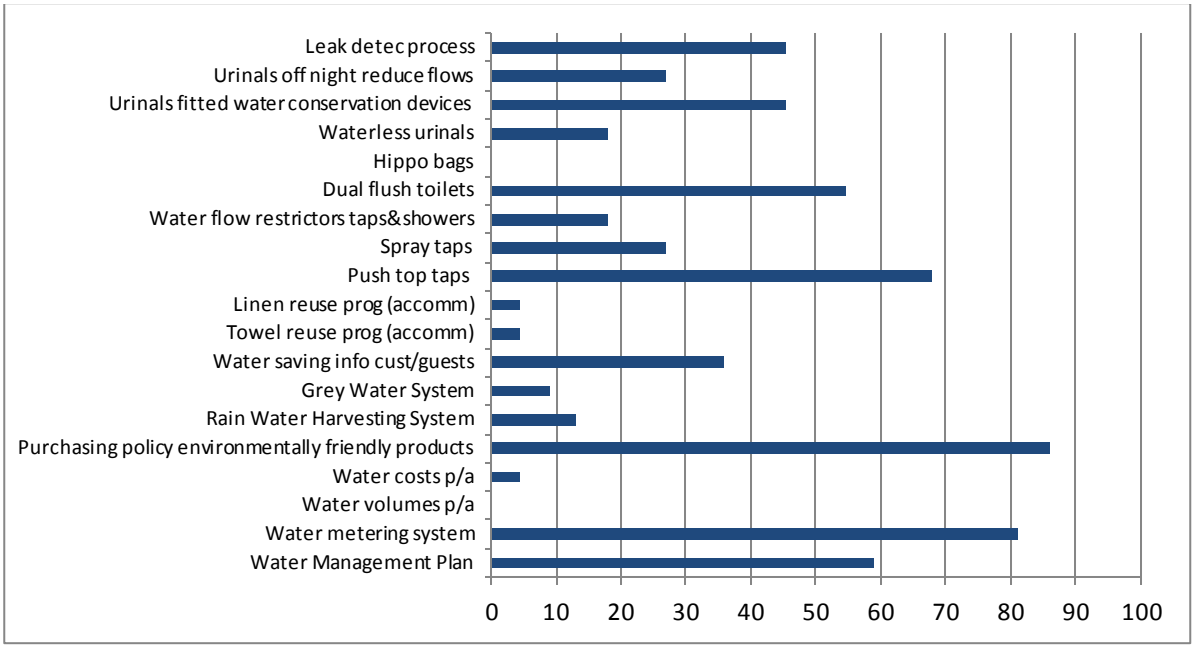
questionnaires and interviews falls on the fact that they are all managers of a selected number of tourist attractions in Ireland.

Purposive sampling is also referred to as judgemental sampling since it involves the researcher making a decision about who or what study units will be involved in the study Jennings (2001). This method of sampling ensured that all relevant information would be collected for the research as they have all been chosen for a particular reason. A sample size of two hundred tourist attraction managers in Ireland was purposively targeted with the questionnaires, as opposed to all tourist attraction managers in Ireland. The two hundred attractions were selected from the Fáilte Ireland database on visitor attractions in Ireland. These attractions also range from large to small with high and low visitor numbers. The number of filled questionnaires obtained was 120. This is a percentage of 60% of the original sample. As the content of the table of two hundred tourist attractions is quite large, it can be seen in appendix (B).

4.5.3 Analysis

To facilitate comparisons throughout the research process, the data retrieved from the questionnaires was input and analysed in an excel spreadsheet. Every question was placed in the excel spreadsheet along with each result. The data from each category was then analysed and discussed in the context of current international literature. An example of one of the questionnaire sections was that of the water section. The results of which can be seen in table 4.1. The questions asked of the attraction managers are placed on the left of the table, with the results shown in percentages on the bottom and horizontal axis of the table.

Table 4.1 Water saving systems/programmes used at attractions



The figures on the horizontal axis are the total percentages of attractions that utilise such water saving systems or programmes and the horizontal axis shows the water saving systems/programmes used at the attractions.

4.6 Strengths and limitations of research

Limitations for any particular research are inevitable and can influence the extent to which useful meaning can be derived in relation to the phenomenon being studied. The research strategy for enhancing validity, reliability and minimising limitations were based on four criteria for judging rigor and adequacy, which includes credibility, transferability, dependability, and conformability (Guba and Lincoln, 1994). Credibility was enhanced in this research with the constant comparison of the international literature and piloting of the strategic questionnaire, content and textual analysis tools on attraction managers. Transferability was achieved by applying the same research tool to each attraction and inputting the data into the checklist tool. The descriptive details of the research tools and format allows others to decide if the findings are applicable to similar situations, perhaps in a longitudinal analysis.

Conformability refers to the process of checking interpretations and conclusions for research bias. Bias can never be completely removed from an individual, but such biases were duly acknowledged during the course of the book and analysis stage. Triangulation

was employed in the research to ensure validity. An important feature of triangulation is not the simple combination of different kinds of data but the attempt to relate them so as to counteract the threats to validity identified in each (Fielding and Fielding, 1986). Data, theory and methodological triangulation were integrated into this research. Methodological and data triangulation was dependent upon convergence of data gathered by multi-methods within the methodological approach in this research.

Limitations to the research were the unavailability of some attraction managers for the interview process. Other limitations included not all the questionnaires completed due to a lack of response from some attractions by post. Also when followed up by telephone, the managers could not be reached or never replied to messages, in order to fill the questionnaire or otherwise arrange a meeting to complete one. Due to time constraints on the research the analysis had to be completed therefore a fraction of the original sample size of 200 attractions had to be eradicated leaving the finished sample size at 60%.

4.7 Ethics issues in research

An important part of research, which should always be noted, is the issue of ethics. Ethics for the tourism researcher, or any researcher, is associated with a variety of stakeholder groups: Society, governments, the scientific community, the research participants, sponsors or clients and the researcher (Neuman, 2000). These six groups represent all the major stakeholders involved or affected by any tourism research. The researcher for this thesis was sensitive to ethical issues such as protecting the identity of all tourism attractions and their managers. According to the Declaration of Helsinki (1975), cited in Greenfield (1996), "It is unethical to conduct research which is badly planned or poorly executed". Without a careful, thought-out and structured plan, research cannot be efficiently carried out. Therefore in the case of interviewing the tourist attraction managers, the research question could not be answered without a well-planned research process.

For this topic it is the responsibility of the researcher to make sure all information gathered is done so in a professional and considerate manner. Interviews were carried out in a relaxed setting and interviews were kept anonymous, therefore with the agreed confidentiality clause between the interviewer and the interviewee, this allowed for a full and frank discussion. The questionnaires were planned carefully for example; they were

aimed not to be bias or to put any sort of pressure on the respondents for personal details. Respondents identities were protected and kept confidential.

4.8 Conclusion

This chapter has identified the research methods put in place for the research. A comprehensive literature review provided the basis for empirical progression. This chapter demonstrated how both the quantitative and qualitative methods were employed to generate knowledge from tourism attraction managers on sustainability within the attraction sector. Sampling methods were also outlined, along with methods for the data collection and analyses. Information from attractions managers were protected in a secure database. The names of the attractions and managers were not used and were instead used as numbers, e.g. Manager 1 and 2. Ethical issue, strengths and limitations of the research concluded this chapter. The next chapter presents the results and discussion of the found from the data collection.

CHAPTER 5

RESULTS AND DISCUSSION: LEVEL OF SUSTAINABILITY AT VISITOR ATTRACTIONS IN IRELAND

5.1 Introduction

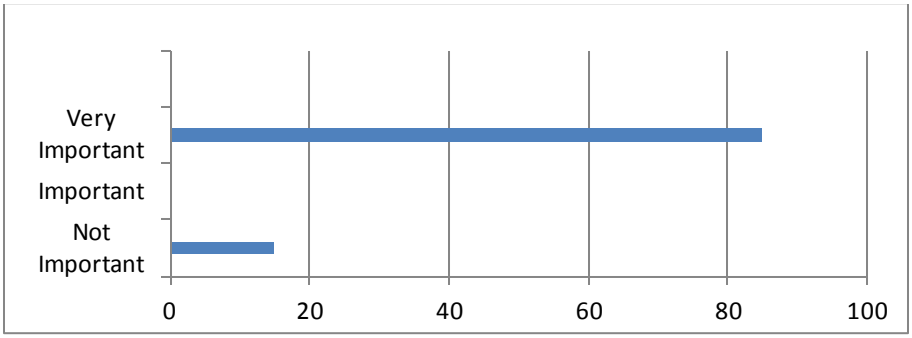
The total number of visits to tourist attractions in Ireland according to Fáilte Ireland (2010) was over seven million. With such huge tourist movement a sustainable approach in tourism management is necessary to preserve the Irish environment. The reliance of tourism on the natural and cultural resources of the environment means invariably that its activities induce change which can either be positive or negative Hughes (2002). The protection of the environment is a serious issue. The survey carried out for this research captures a good range from large to small visitor attractions with high to low numbers. The proposed checklist which will be developed from this research aims to assist tourism attraction managers in conducting sustainable practices for their attraction, thus helping to sustain the natural environment.

The results pertaining to the level of sustainability at visitor attractions across Ireland are generated within this chapter. It examines and discusses the understanding and awareness by attraction managers of sustainability and tourism. Awareness of tourism plans and legislation pertaining to the tourism industry are also examined. Other areas discussed in this chapter are visitor management techniques and training at the assessed attractions.

5.2 The importance of protecting the environment at attractions

Visitor attraction managers were asked a question on how they would rate the importance of protecting the environment on a scale of one to five. As can be seen from table 5.1, the majority of which at 85% of managers rated it to be very important.

Table 5.1 The importance of protecting the environment at attractions

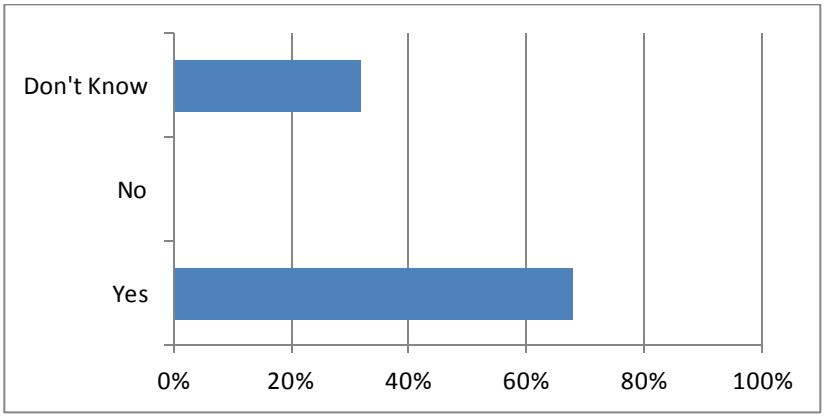


This is a high percentage and one which would be expected as it is important to be aware that the environment at their attractions needs to be maintained in a sustainable manner. The reliance of tourism on the natural and cultural resources of the environment means invariably that its development induces change which can either be positive or negative (Holden, 2008). Attraction managers need to understand the importance of protecting the environment at their attractions in order to preserve it for the future. From these results it shows that 15% did not rate the importance of protecting the environment as very important, this shows some small degree of a lack of understanding of its importance by a fraction of managers. Protecting the environment is significantly important, as stated by Fáilte Ireland (2010), who, in its tourism product development strategy 2007-2013, identified the natural environment as one of Ireland's key strengths. They also emphasized how essential it is that the natural environment is preserved and protected. It may be necessary to educate attraction managers who need to gain a better understanding of the protection of the environment

5.3 Awareness of tourism impacts at visitor attractions

The research found that 68% of attraction managers were aware of tourism impacts at their attractions. Table 5.2 shows that 32% of respondents are not aware of tourism impacts at their attractions.

Table 5.2 The awareness of tourism impacts at visitor attractions



This is quite an alerting result with 32% of managers not aware of potential visitor impacts at their attractions. This result may be expected at 100% of attraction managers aware of environmental impacts, as this is highly important. According to Fáilte Ireland (2007), while quality of both the natural and built environment is essential to tourism, many activities can have adverse environmental impacts. Common negative impacts on the environment include increased air, water and noise pollution; increased demand for energy, water resources and other natural resources; generation of waste; natural habitat destruction, increased erosion and soil degradation; pressure on wildlife and increased threat to endangered species; as well as aesthetic impacts on landscape. Negative impacts can eventually destroy the environment which tourism highly depends on.

Another important reason for attraction managers to be aware of environmental impacts from their attractions is in relation to Fáilte Irelands visitor attitude survey in 2008. Over the past three years, holidaymakers have been asked to comment on Ireland as a clean and environmentally green destination, with results very consistent in this time span. A top advantage for Ireland indicated by visitors was an unspoilt environment at (79%). As a tourism destination, Ireland holds an image as green country with quality environment and beautiful landscapes, therefore attractions would need to be fully aware of environmental impacts that occur in order to avoid or deal with such impacts.

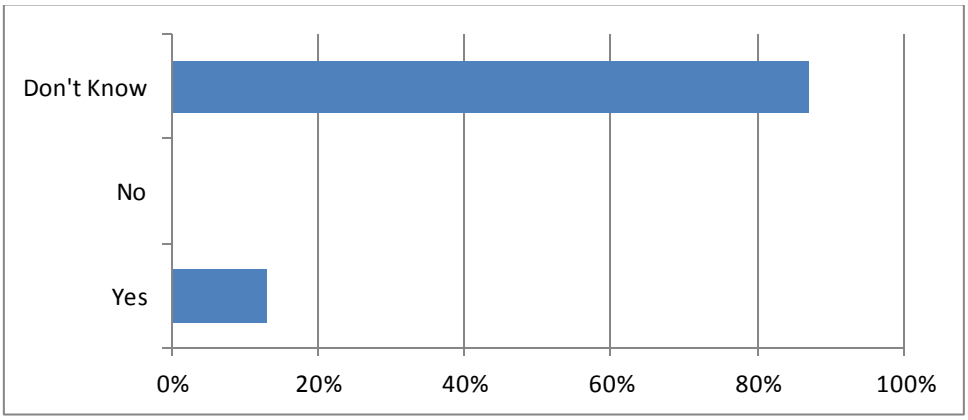
It is important to note that there is a need for tourism to be compatible with this image of beautiful scenery and an un-spoilt environment. The tourism industry in Ireland is heavily dependent upon this perception. A structured approach by visitor attractions to managing

the impact of tourism on natural assets is essential to ensure sustainability and the continued enjoyment of those assets for both tourism and recreation (Bull, 1995; Swarbrooke, 1999; Weaver, 2006). In order to minimise the impacts of tourism on natural assets, attractions need useful information on which to base decisions. Yet despite their importance, many of Ireland's natural assets do not have specific management guidelines for minimising visitor impacts. Sustainable management of natural assets has many broader advantages, helping Ireland maintain its competitive clean, green image, fulfilling national strategies, and helping the tourism industry remain profitable and effective. There is still work to be done on awareness and Fáilte Ireland need to address this and work with the 32% of attraction managers who need to understand the important symbiotic relationship between tourism and the environment.

5.4 Triple bottom line of sustainability

Attraction managers were asked if they operated under the triple bottom line of sustainability. Table 5.3 shows that only a small margin of 13% of managers operate under the triple bottom line of sustainability, or even know what this is.

Table 5.3 Attractions operating under the triple bottom line of sustainability



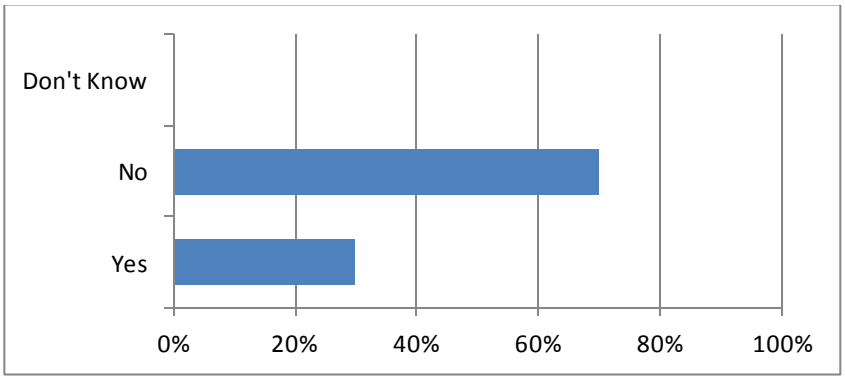
This is a remarkable finding as the three components of sustainability: Environmental, economic and socio-cultural dimensions are all inter-related in tourism and should all be operated under in any tourism practice. According to Gossling et al (2009), all three dimensions of sustainability are important for tourism. Hall and Lew (2009) believe that this is because tourism affects the physical environment; it effects people, communities and the broader social environment; it has economic effects; and it can be very political, especially with respect to how places both attract and manage tourism.

A positive triple bottom line means an improvement in conservation of the natural environment and a social benefit for local communities, as well as a profit for shareholders and national or regional economies Buckley (2003). With the use of a sustainable tourism attraction management checklist from this research, it will help to ensure a positive progression towards sustainable practices and implementing a positive triple bottom line at tourist attractions. These three dimensions are very important fundamental factors for the development of the sustainable management for tourist attractions and Fáilte Ireland may need to work on this area with attraction managers.

5.5 Large visitor numbers causing problems at attractions

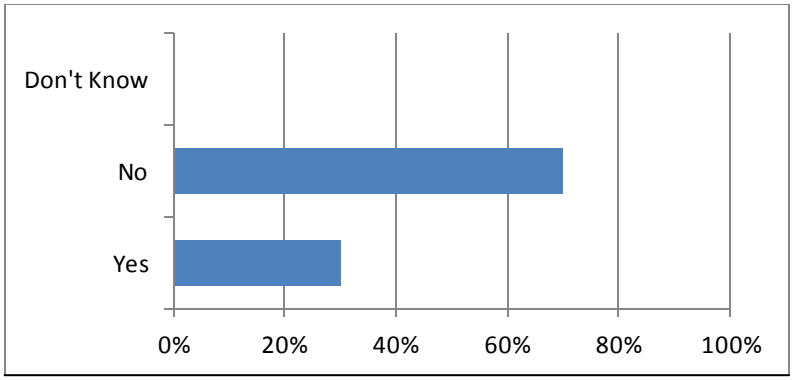
Managers' views on the impacts of large visitor numbers at attractions revealed that this does not seem to be a problem for attraction managers, with 70% saying that large visitor numbers do not cause problems at their attractions. These figures can be seen in table 5.4 below.

Table 5.4 Large visitor numbers causing problems at attractions



This figure highlights that attraction managers believe that the attractions are capable of managing large visitor numbers without them becoming a problem which can lead to overcrowding and damaging the local environment at the attractions. As the quality, experience and ambience of the attraction can be threatened by overcrowding of visitors when actual physical damage occurs, irreversible damage occurs or the local community suffers unacceptable side-effects Mason (2003). When attraction managers were asked if large visitor numbers impact on the enjoyment of the visitor, 70% of them replied no to this and 30% replied yes, as can be seen in table 5.5.

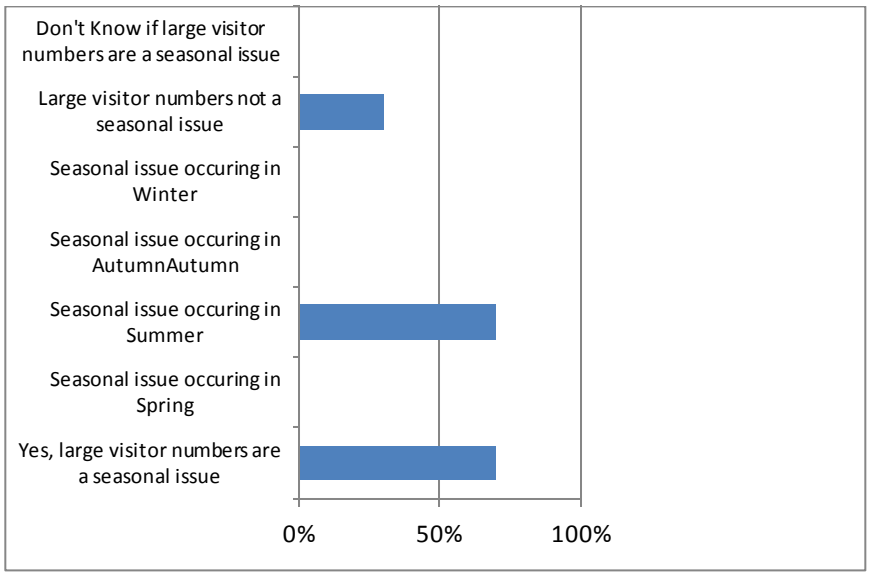
Table 5.5 Large visitor numbers impacting on the enjoyment of the visitor, or on the quality/conservation of the attraction



As the earlier response to whether large visitor numbers cause problems at the attractions had resulted in this not being an issue, the concluding question as shown in table 5.5, was based on a no response to large visitor numbers being a problem at the attractions. The question was also to discover whether or not they impacted on the enjoyment of the visitor, or the quality/conservation of the attraction. Considering the fact that 70% of managers say large visitor numbers do not cause a problem at their attractions and are well managed, the response to the question from table 5.5, was understandably no to large visitor numbers being an issue, with a result of 70% saying no and 30% saying yes to this.

When attraction managers were asked if these issues were seasonal, 70% replied to the issues occurring only in the summer months. A minor 30% of attraction managers revealed that large visitor numbers were not a seasonal issue, as can be seen below in table 5.6.

Table 5.6 Large visitor numbers as a seasonal issue

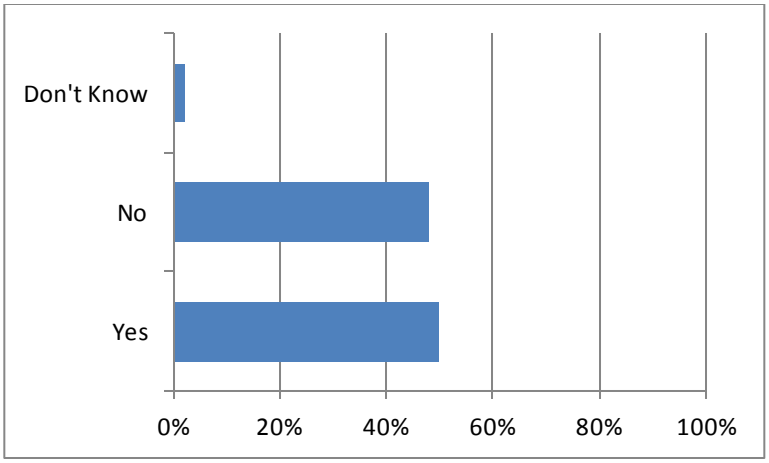


It can be seen from the bar chart in table 5.6 that 70% of the attraction managers would say that if large visitor numbers were an issue, this would generally occur in the summer months. However this does not seem to be a problem for attraction managers as it was discussed earlier their views on the matter resulted with the belief they are capable of dealing with large visitor numbers. The management of visitor numbers to the attractions is discussed in the next section under visitor management techniques.

5.6 Visitor management techniques

Attraction managers were asked if they had established any visitor management techniques. The response was 50% of attractions do use visitor management techniques. Of those techniques visitor dispersion is most common, this can be seen in table 5.7. This relates back to section 5.5, and shows that attraction managers are using visitor dispersion as a technique to avoid large visitor numbers causing problems and overcrowding at the attractions.

Table 5.7 Establishment of visitor management techniques at the attractions



This result is quite a low number of attractions with visitor management techniques, as it is important for all attractions to have at least one management technique. This could aid with the possibility of large visitor numbers, in order to preserve the environment at the attraction and also to maintain visitor satisfaction and enjoyment.

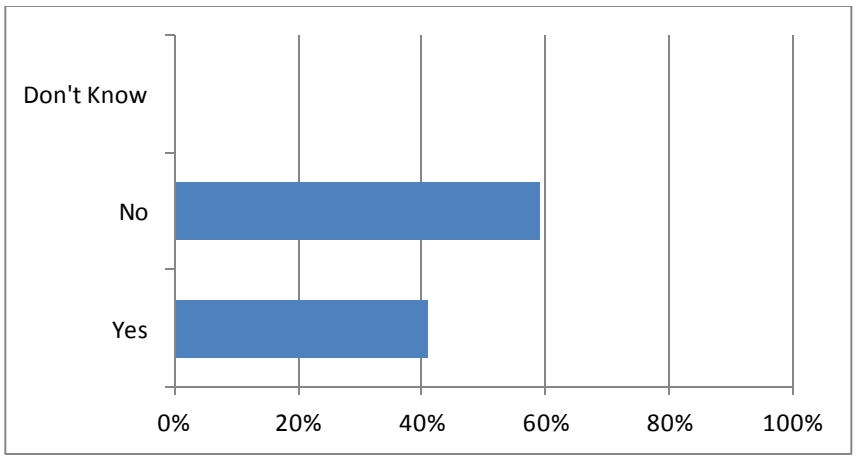
A range of visitor management techniques exist for use by those who cater for and control the movements of tourists. There are several texts which outline these and their importance in depth (Ceballos-Lascurain 2001; Elkington and Hailes 1992; Lavery 1971; Lindberg and Hawkins 1993; Witt and Moutinho 1994). There has also been a growth in the number and variety of visitor management techniques available to managers responsible for the movement and flows of tourists (Lavery, 1971; Elkington and Hailes, 1992; Gunn, 1991; Witt and Moutinho, 1994; Mowforth and Munt, 2003; Wood, 2002). Visitor management techniques provide a means to manage and minimise the impact of visitors.

The low use of visitor management techniques highlights the need for education, training and industry guidelines from state agencies such as local authorities and Fáilte Ireland in this area. This also highlights the need to apply visitor management techniques to the checklist for the sustainable management of tourism attractions. This will allow tourism attraction managers to identify if they have the correct techniques in place to minimise visitor impacts. The next section will discuss environmental impact assessments at attractions.

5.7 Environmental impact assessments at attractions

Attraction managers were questioned on whether or not there had been environmental impact assessments carried out at the attractions. Table 5.8 shows the response to this question was 41% had one carried out, with 59% not having carried out on.

Table 5.8 Environmental impact assessment carried out at attractions



This is quite a low figure as carrying out environmental impact assessments can help with planning for the tourist attraction. Sniffen (1995) has described Environmental Impact Assessments as, 'among the foremost tools available to national decision makers in their efforts to prevent further environmental deterioration'. Conducting environmental impact assessments can reduce costs and time taken to reach a decision by ensuring that subjectivity and duplication of effort are minimised.

Environmental impact assessments can also help with identifying and attempting to evaluate the primary and secondary consequences which might require the introduction of expensive pollution control equipment or compensation and other costs at a later date. According to Wall and Mathieson (2006), tourism planning needs to be controlled as traditional forms of development control, such as zoning systems, environmental impact assessments, social impact assessment procedures and development permissions to ensure sustainable development. Again the low figure for environmental impact assessments conducted highlights a need for education, training and industry guidelines from state agencies such as Fáilte Ireland and local authorities in this area. Environmental impact assessments will be included in the sustainable management checklist to aid in the

sustainable management at tourist attractions. This will allow managers to discover their environmental impact stance at their attractions. The next section will discuss attraction managers knowledge of tourism plans and legislation at attractions.

5.8 Tourism plans and legislation

In relation to awareness of relevant tourism plans and legislation pertaining to the tourism industry, attraction managers answered such a question from the survey conducted. Such legislation include for example; Sustainable Energy Act 2002, National Tourism Development Authority Act 2003, Litter Pollution Act 1997, Game Preservation Act 1930, The Irish Wildlife Act 2000, Waste Management Acts 2008, Water Legislation 2008. These results can be seen in the following table 5.9.

Table 5.9 Attraction managers knowledgeable and updated on Irish tourism plans and industry legislation

	Yes	No
Fáilte Irelands regional tourism development plans, 2008 – 2010	55%	45%
Fáilte Ireland strategy statement, 2008 – 2010	50%	50%
Fáilte Irelands five principals of sustainable tourism development, 2008	51%	49%
Fáilte Irelands Review of Good Environmental Policy and Practice, 2007	59%	41%
Fáilte Irelands Ecotourism Handbook for Ireland, 2009	40%	60%
Water legislation Act, 2007	65%	35%
Sustainable Energy Act, 2002	41%	59%
Waste management legislation Acts,1996 - 2010	65%	35%
Litter pollution Act, 1997	66%	34%
Protection of the Environment Act, 2003	51%	49%
The Irish wildlife Acts, 2000	49%	51%
The EPA Biodiversity Plan, 2010	30%	70%
The Flora Protection Order, 1999	42%	58%
The Planning and Development Act, 2002	56%	44%
Environmental Noise Regulations 2006	54%	46%
Air quality legislation Acts, 2007	52%	48%
Safety, Health and Welfare Act 1989	80%	20%

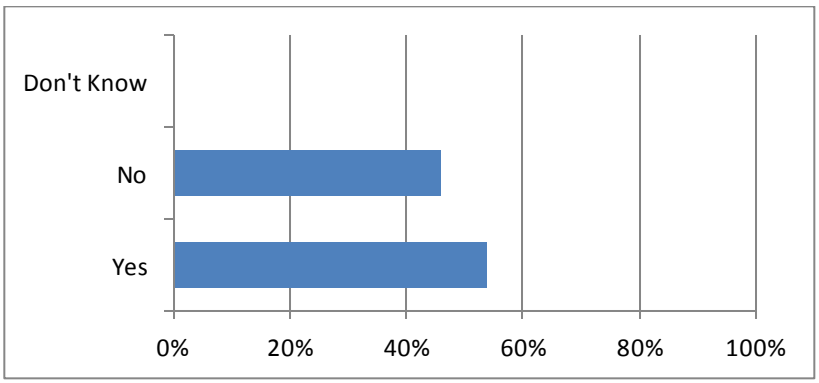
At an average of just over 50% of those surveyed were found to be knowledgeable or aware of tourism plans and legislation. An average of fewer than 50% of the attraction managers are not knowledgeable on relevant tourism plans and legislation, pertaining to the tourism industry. This is quite a low figure considering that over 70% of attraction managers rated the importance of the protection of the environment at their attraction as very important. These planning restrictions and legislation aid in the management to sustain the environment and tourism within Ireland. In order to help protect the environment at attractions managers need to be educated and updated on tourism plans

and legislation. Hall (2000), states how 'the justification behind tourism development planning is often quoted as being necessary to avoid the negative impacts of tourism'. If attraction managers are not aware and educated on tourism plans and legislation in relation to the tourism industry then how can they undertake in sustainable practices.

5.9 Training

Training on sustainable environmental practices at the attractions surveyed, was found that just over 50% of the attractions personnel do receive training on sustainable environmental practices. This can be seen in the following table 5.10.

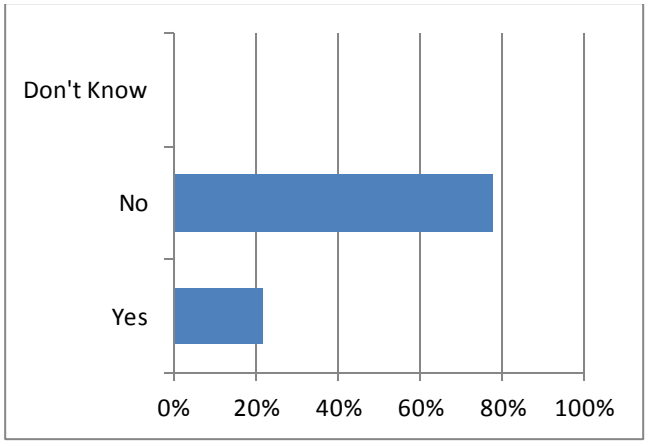
Table 5.10 Training for personnel at attractions regarding their role in sustainable environmental practices



Training is hugely important for all personnel at attractions to ensure they are aware of environmental impacts at the attraction. It is also important in relation to ways in which they can contribute to avoid impacts and to assist in the education and dissemination of information to visitors on particular impacts. As suggested by Kovacs and Innes (1990), tourists may have less impact on wildlife if they are to be restricted during certain times of the year, for example breeding season and educated on appropriate behaviour toward wildlife. This is an example of the importance of training of employees on sustainable practices for wildlife but is also hugely important in other key areas at attractions, such as, waste reduction, recycling, monitoring of water use and energy reduction. In order for the tourist to be educated on wildlife at a certain attraction, staff needs to be trained in this area to teach the tourist.

Table 5.11 shows that, of the remaining 46% of personnel that do not receive training, 22% of them alleged they would like to receive training on sustainable environmental practices.

Table 5.11 Personnel who would like to receive training on sustainable environmental practices

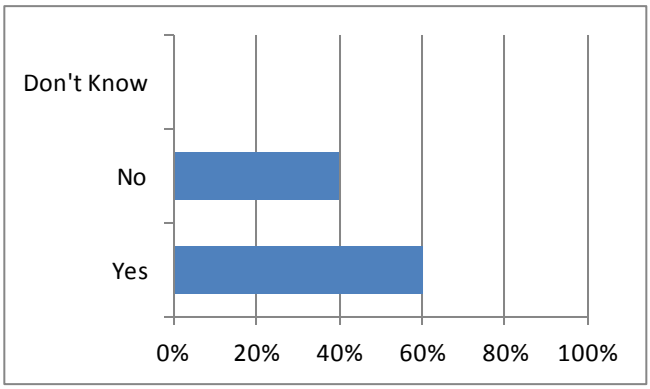


Attraction managers may not understand the cost savings can be achieved by simply giving their personnel basic training on sustainable environmental practices. Examples of such training can be as basic as turning off lights when leaving a room or when not in use, turning off electrical equipment when not in use or only using water as necessary in the building. As stated by Fáilte Ireland (2007); "there is a need to consider both current and future capacity to address sustainability issues in programmes on offer and also to consider the availability of opportunities for staff development". The fact that 22% of staff that do not receive training on this area implies they would like to do so, shows managers that personnel are interested in conducting sustainable practices at the attractions and it is a necessary action to do so in order to be sustainable and save costs which is imperative in this economic climate.

5.10 Code of conduct

Attraction managers were asked if they have a code of conduct for their visitors. Over 60% of attractions have one in place. The percentage of tourism attractions assessed with codes of conduct can be seen in table 5.12.

Table 5.12 Code of conduct at attractions for visitors

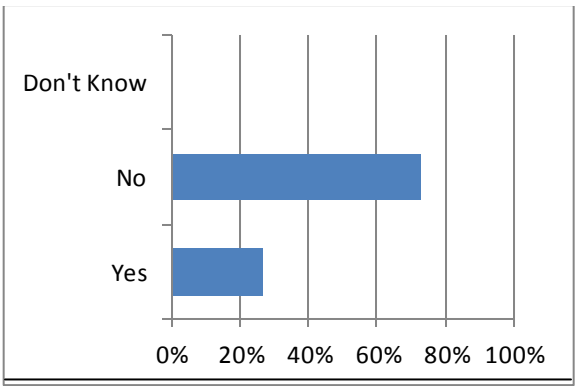


This is quite a good result for tourist attractions as it is important to have a code of conduct for visitors to help preserve the local environment, wildlife and also to maintain an enjoyable visit for all visitors at an attraction. According to Mason and Mowforth (1995), there are two general points that can be made about almost all codes. Firstly, they attempt to influence attitudes and modify behaviour. Secondly, almost all codes are voluntary, statutory codes backed by law are very rare. However, codes of conduct help in the sustainable management of tourism attractions and would need to be incorporated into the checklist in order to ensure 100% of attraction managers are utilising codes of conduct at their attractions to aid in the transition to sustainable management practices at attractions.

5.11 Carrying capacity

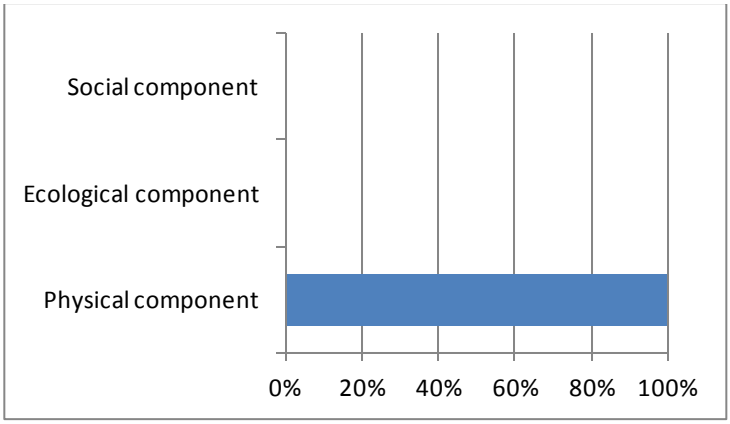
From the results of the questionnaire, it was found that only 27% of attractions surveyed have established a carrying capacity. This can be seen in the following table 5.13.

Table 5.13 Attractions with an established carrying capacity



This carrying capacity result is relatively poor as it is noted to a large extent within theory, that it is important to establish ones carrying capacity at an attraction to avoid overcrowding which will result in physical and social impacts (Mathieson and Wall, 1982; Inskeep, 1991; Haddad and Pulliam, 1994; Cohen, 1995; EC, 1998; Czech, 2000; Nebel and Wright, 2000; Castellani, Sala, and Pitea, 2007; Logar, 2010). Attraction managers were also asked if they had an established carrying capacity, to specify which component did it fall under, either that of physical, ecological or social. The results, which can be seen in table 5.14 was, 100% of managers who had established a carrying capacity, specified it fell under the physical component.

Table 5.14 Specific carrying capacity component established at attractions

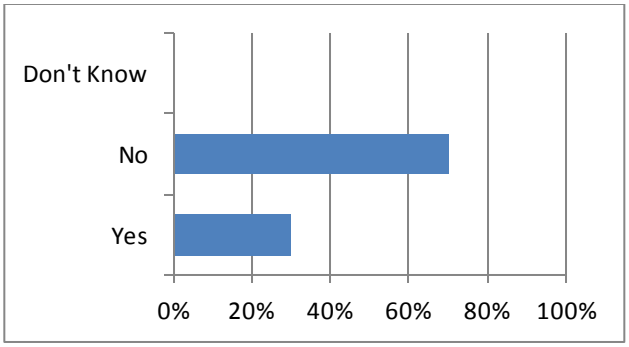


According to Butler (1990) tourism managers must consider the needs of an area and determine the physical and social carrying capacities of their destination area. Butler (1999), also notes that the concept of carrying capacity is occasionally interpreted as an application of sustainable tourism implying that the two can co-exist and may both be useful concepts and frameworks for analyzing the impacts and limits of development (Butler 1996). Establishing ones carrying capacity at an attraction is essential to ensure sustainable management of visitor numbers at the attraction. Without establishing a carrying capacity this can result in irreversible negative impacts to the environment at the attraction, thus hindering future use and business. Negative impacts could also result in costly measures in an attempt to reverse and repair the visitor impacts. Carrying capacity will be incorporated into the checklist for attraction managers. The next section discusses attractions operating under environmental management systems.

5.12 Attractions operating under environmental management systems

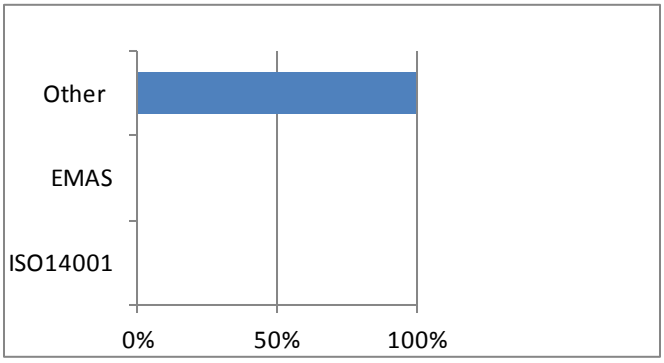
Of all the tourism attractions surveyed, only 30% of which are operating under an environmental management system. Table 5.15 displays these results.

Table 5.15 Attractions operating under an Environmental Management System



In terms of building management and maintenance, investment in building management systems (BMS) should be worth considering, especially for large properties. At very basics, BMS control and maintain set temperatures throughout the building, but they can also be designed to provide a comprehensive control and monitoring of all major energy-consuming equipment. With this technology, for example, constant temperatures can be maintained if one side of the building is in sunshine while the other in shadow, lighting levels automatically adjusted in rooms or corridors with external windows, as well as times and temperatures of heating boilers can be regulated according to the external climatic conditions Hospitable Climates (2009). Table 5.16 displays the results relating to the question asked of the attraction managers on which environmental management system they operated under. The choices given were that of ISO14001, EMAS, or other.

Table 5.16 Environmental Management System attraction operating under

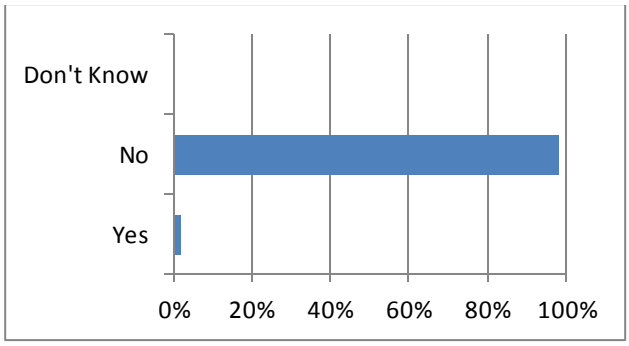


When the attraction managers were asked which environmental management system they operated under, of the 30% that did have one, they all utilised their own in house system. The low percentage of 30% may be due to the fact that building management system equipment could be quite expensive to purchase and install. This may also be the reason that all who had an environmental management system had their own in house EMS, with their own ways of managing their attraction in an environmentally friendly manner without an initial expense. This shows great initiative of those managers who developed their own in house system. This can be encouraged to all attraction managers in order for them to save energy and money. Environmental management systems will need to be included in the checklist as for assisting in the sustainable management of attractions. The next section discusses eco taxes or eco charges at attractions.

5.13 Introduction of eco taxes or eco charges

The introduction of eco taxes or charges does not seem to be on the attraction managers' agendas, as only 2% of attractions are implementing eco charges. As can be seen from the table 5.17 below, only 2% of attractions have implemented an eco tax at their attraction, with a surprising 98% of attractions not implementing or introducing this tax or charge.

Table 5.17 Introduction of eco-taxes or eco charges at attractions



Eco taxes or charges are easy to introduce at an attraction. This can be done simply by adding a small extra charge on visitation to the attraction and stating to visitors what this charge is for and what it will be used for. This can be communicated to the visitor as carbon offsetting which allows attractions to reduce, displace or offset the impact of the carbon emissions associated with energy consumption in their operations.

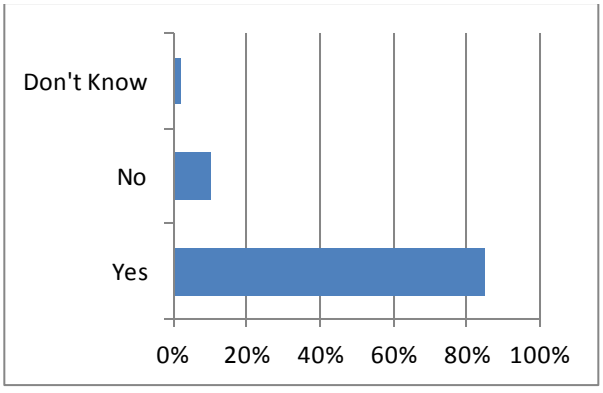
Carbon offsetting involves planting trees, investing in or donating to companies and organisations that are developing renewable energy technologies or buying energy efficient technologies and donating them to developing countries. Carbon offsetting is a good way to demonstrate that the attraction is serious about current and future risks posed by climate change and to improve public image; it can also be offered to the visitor to off-set the impacts of their travel to the destination, therefore could be used as a marketing tool to broaden the market appeal for the attraction.

As budgets are now smaller at attractions, this charge can raise revenue to contribute to any purchases required of eco efficient materials or systems and also to any repairs or damage to the surrounding environment at the attractions.

5.14 Purchasing policies for environmentally friendly products

On the topic of a purchasing policy that favours environmentally friendly products at the attractions for building materials, capital goods, food, cleaning products and consumables, the outcome was quite positive. As can be seen from table 5.18, the result came back with 85% of attraction managers responding that they do purchase environmentally friendly products for the attraction, with 13% replying they do not and 2% did not know.

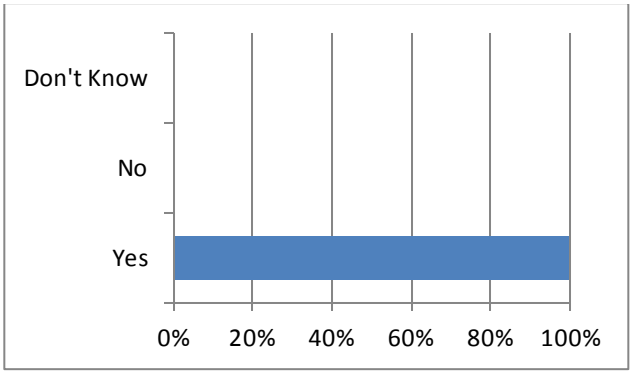
Table 5.18 Purchasing policy that favours environmentally friendly products at the attractions



This is a high percentage with 85% of managers saying they do have an environmentally friendly purchasing policy. This shows they are making an effort to help protect the environment at their attraction and visitors have been shown to favour this policy when they would visit the attraction (Hanrahan, Conaghan, 2010). Of those managers that

responded no, a question was asked if they are actively seeking ways to reduce their dangerous chemical use at the attractions, the results are shown in table 5.19.

Table 5.19 Attraction seeking ways to reduce their use of dangerous chemicals in their products



Of the 10% that had responded no, 100% of them said they are actively seeking ways in which to reduce their use of dangerous chemicals at their attractions. This finding highlights that attraction managers are aware of the potential harm from chemicals used at attractions. The water in the attractions can easily become contaminated by chemicals. Water use by attraction managers is assessed in the next section.

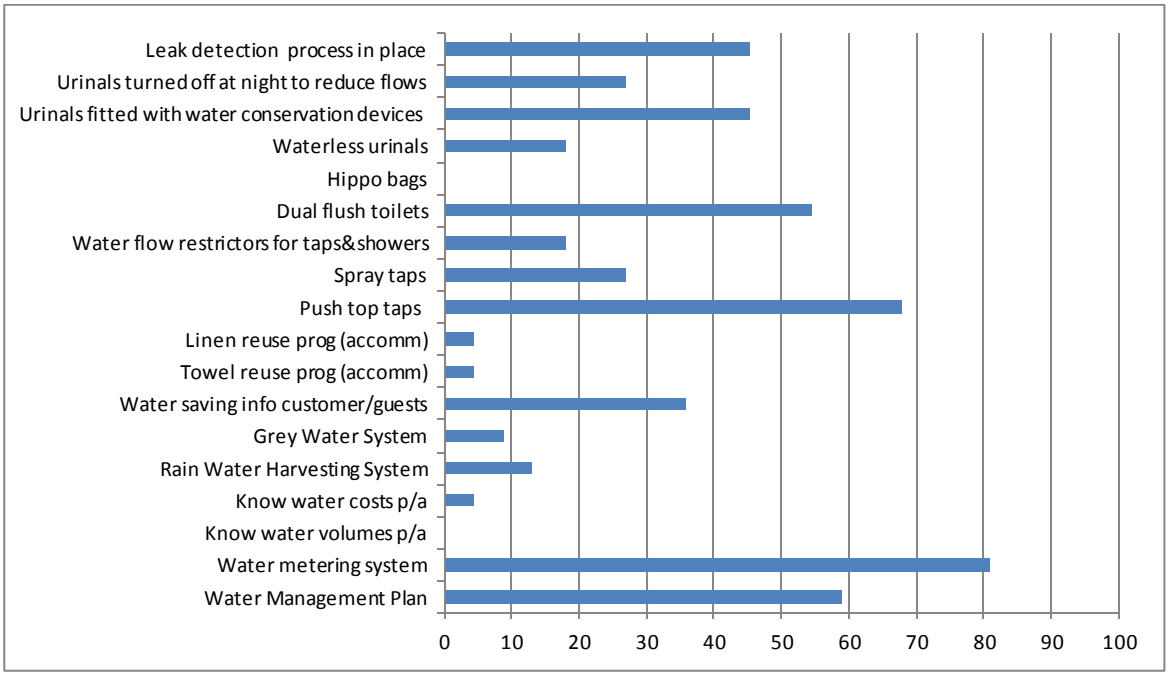
5.15 Water

All businesses in Ireland must now pay water charges, either through flat rate charges or a metered charge. The EEA (European Environment Agency) has identified metering as a powerful tool for decreasing demand for water, with reductions of 10-25% achievable. Metering can also be a useful tool in identifying water losses. The National Water Study 2000 estimated that 47% of water that was treated for use by the public was not reaching the final consumer.

In 2008, we have seen an outbreak of cryptosporidium and e-coli contaminating the water systems in Galway, forcing hotels to implement expensive water purification systems in order for the guests to do simple things such as brushing their teeth. The research carried out found that representative attractions have a purchasing policy for environmentally-friendly products. As can be seen from table 5.20, 59% of attractions have water management plans and 81% have water metering systems. However from a cost saving point of view, it is worth noting that no manager knew their water usage and less than 5%

knew their costs per year. Huge cost savings can potentially be made if the volumes and costs are monitored and managed, as discussed earlier by the EEA, reductions in water use of 10-25% can be achieved by water metering. Water saving systems or programmes do not seem to be top of the agenda for these attractions, as out of fourteen possibilities attractions only used four. These systems and programmes included self-closing taps, dual flush toilets, spray taps and rain water harvesting systems as can be seen at the new Aviva stadium in Dublin.

Table 5.20 – Water saving systems/programmes used at attractions

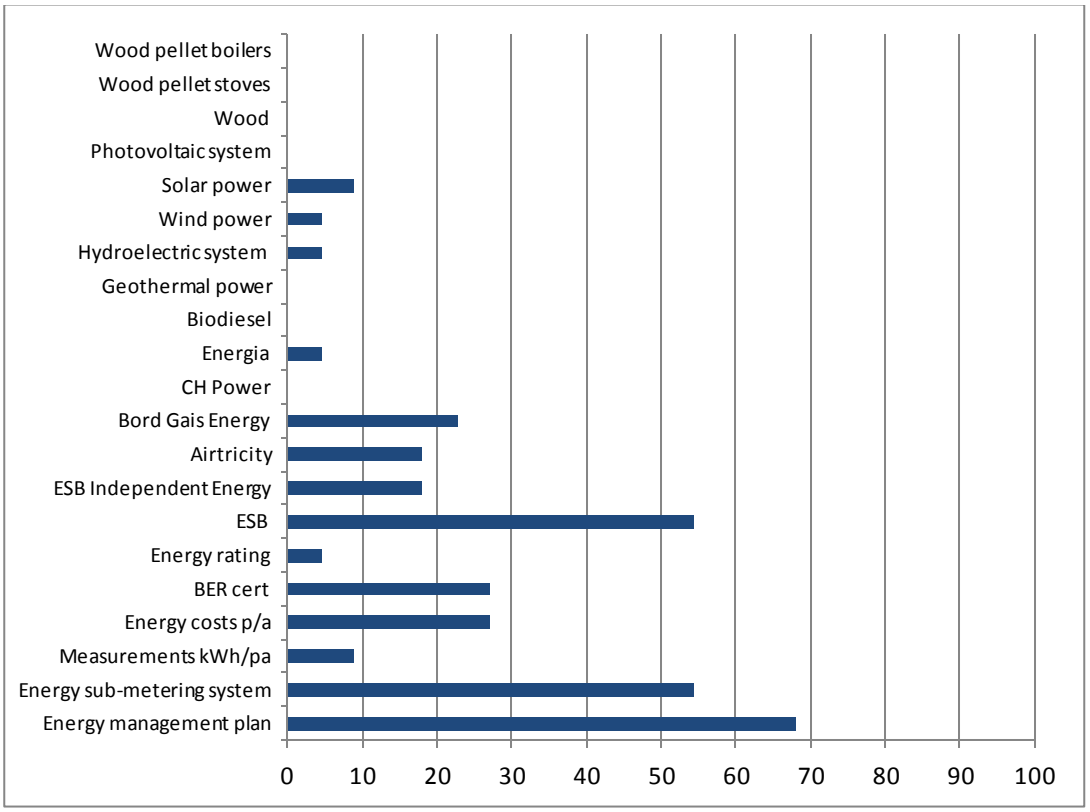


There are a lot of potential cost savings to be made from sustainable water management practices**.** With the low percentage of attraction managers reducing their water usage this indicates the necessity for education, training, and industry guidelines from state agencies such as local authorities and Fáilte Ireland in this area. With regular monitoring of volumes and costs and the use of water saving systems and programmes, these cost savings could be achieved for tourism attractions in Ireland. These results highlight the need for specific water management techniques in the sustainable tourism management checklist. This will help ensure attraction managers have the correct techniques in place in order to save water and money at the attraction.

5.16 Energy

According to Fáilte Ireland (2007) Ireland's total primary energy requirement (TPER) is dominated by oil and gas. Renewable energy is the lowest contributor. With the depletion of fossil fuel resources, tourist attractions need to reduce their energy use in order to minimise costs. As can be seen from table number 5.21, this research found that 68% of the attractions assessed have energy management plans and over 50% have sub-metering systems in place. A meagre 9% knew their energy usage and just over 25% knew their costs per year. This would question if the attractions energy management plans are in fact applied to good use. This result also highlights that attraction managers could potentially save a lot of money if they were monitoring their energy usage and costs. A surprising low figure of 27% of attractions had a BER cert but did not know their ratings.

Table 5.21 – Energy sources used at attractions



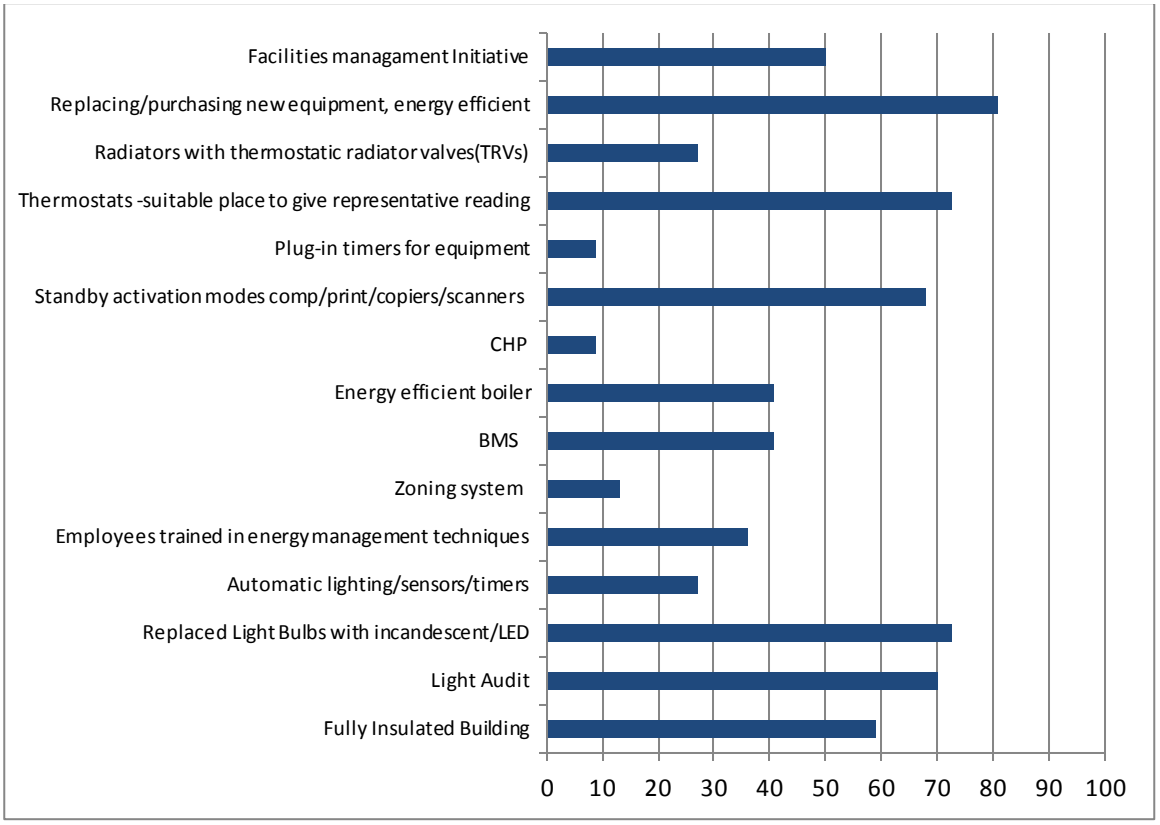
A high majority of attractions of over 70% use ESB as their main energy source with only 30% using alternative sources, mainly that of Airtricity and Bord Gáis Energy. These figures on energy sources also highlight that the majority of attractions do not use renewable energy. Furthermore, they could save money by switching to a renewable energy provider, which had lower commercial rates at the time of research. An average

number at 59% say their buildings are fully insulated and just over 70% have changed all their light bulbs to energy saving bulbs such as LED bulbs. This may highlight that attraction managers are willing to make a change in order to save energy and costs.

The use of energy saving systems or programmes had fifteen options (as shown in table 5.22), with a very poor response as only five of the fifteen are being utilised. These included the purchasing of new equipment with an energy efficient (A) rating, thermostats being placed away from heat sources and draughts to give a representative reading, standby activation modes for computers, printers, scanners and printers, conducting light audits and the replacement of light bulbs to energy efficient light bulbs.

A poor response of fewer than 40% of attraction managers say their employees are trained in energy management techniques. With simple training for the employees such as switching off lights and electrical appliances when not in use and also turning off running taps when not in use can save money at attractions and does not cost anything to conduct simple training. Another point to note is, only 30% of attractions have automatic lighting, a lot of money can also be saved through the reduction of energy usage with the implementation of automatic lights.

Table 5.22– Energy efficient programmes/systems used at attractions



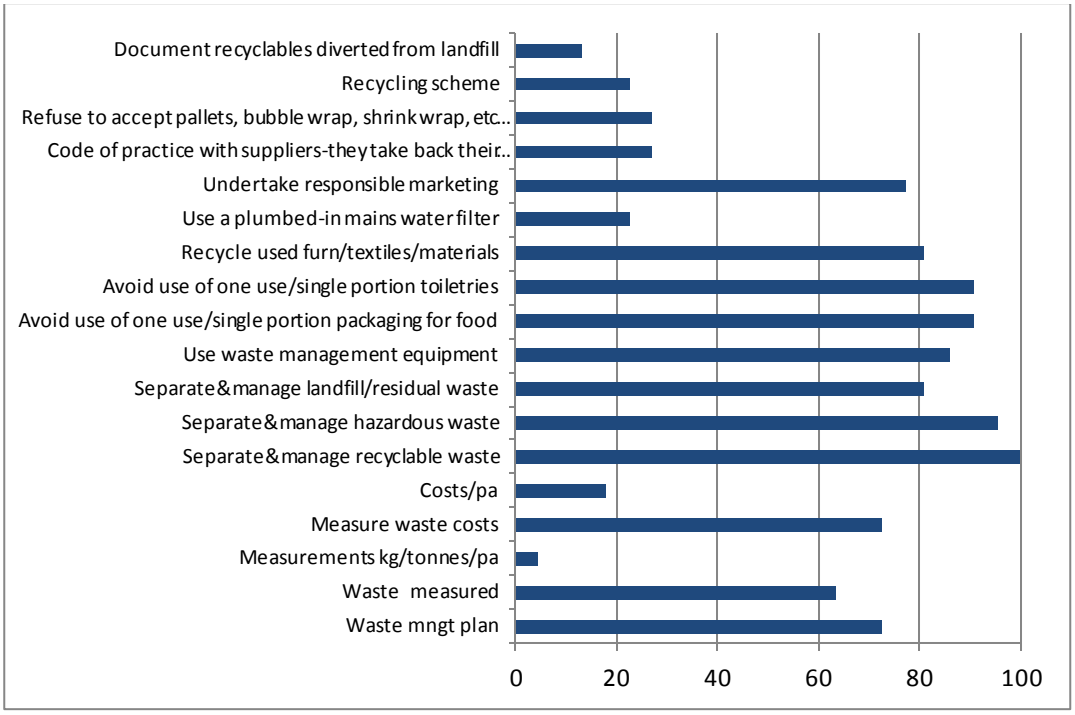
There seems to be potential for a lot of savings on energy at these attractions. With just over 30% of employees at attractions trained in energy management techniques, this could be addressed by implementing compulsory training for employees. Implementing this action will save on energy usage and costs. With regular monitoring of use and costs and the use of energy saving systems and programmes, cost savings could be achieved. These results on energy use emphasize the need to input energy management techniques into the sustainable management checklist.

5.17 Waste

The tourism industry produces large quantities of waste products. Hotels, airlines, attractions and other related businesses that serve tourists throw away tons of garbage a year. Exposed waste is not only aesthetically displeasing but also attracts health hazardous vermin (Olokesusi, 1990). Recyclable and reusable products rather than disposable, and reclamation processes need to be instituted throughout the industry (Wheatcroft, 1991). From this research it was found that over 70% of respondents have a waste management plan in place, but alarmingly none of which knew their measurements or costs per year (as can be seen from table 5.23). Over 90% of the respondents separate their recyclables,

landfill and residual waste and 30% are under a recycling scheme. This high percentage of attractions that recycle their materials is quite significant and reduces a great deal of waste disposed of to landfill. A high figure of 80%, undertake responsible marketing, for example e-marketing and the use of environmentally friendly printing materials.

Table 5.23 – Waste management at attractions



There is room for improvement at attractions in relation to sustainable waste management, with potential cost savings from monitoring waste use and costs and implementing waste management actions. With such a low percentage measuring waste use and costs training for employees and management could be implemented in order to save on waste use and costs. A waste management section will need to be in included in the sustainable tourism management checklist as an outcome from the waste management results.

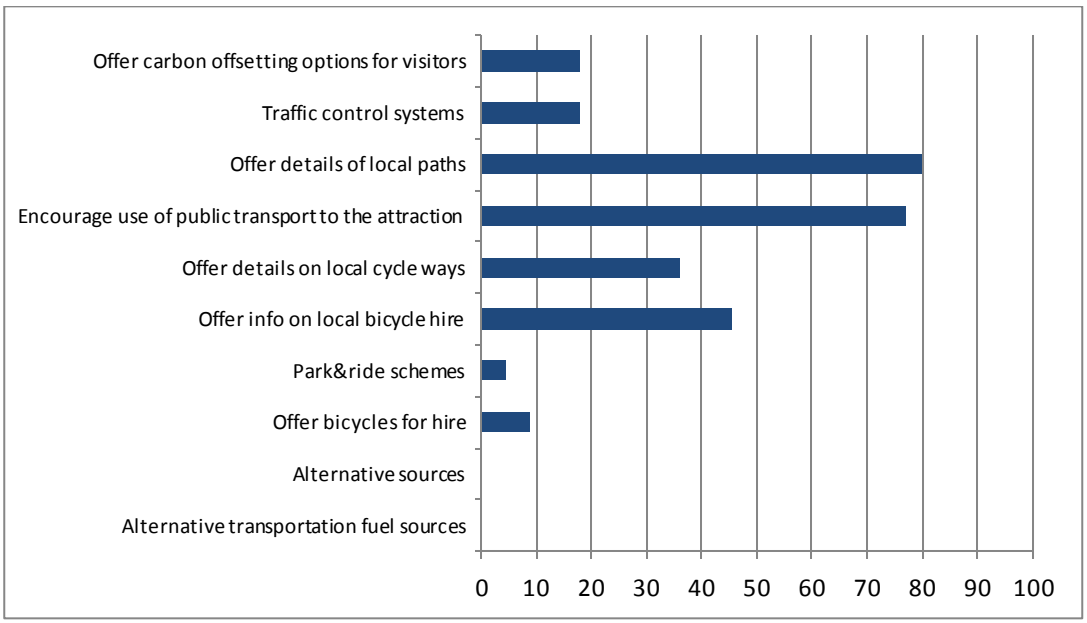
5.18 Transportation

Transport is an important and increasing source of greenhouse gas emissions that are contributing to global warming. For example, a return flight for two from Dublin to Los Angeles produces considerably more CO2 than the average new car does in a whole year. A recent report suggests that aviation is responsible for 75% of all greenhouse gas emissions of all EU tourism transport (Peters et al, 2007). No respondents from this

research have introduced eco-taxes or charges. Carbon offsetting is low with 10% of respondents actively initiating this, however none of whom actually offer this option to their visitors.

Traffic related problems include pollution from exhaust fumes, congestion, damage to verges and lawns due to poor parking and vibration damage to buildings (ETB, 1991). Newgrange in Ireland has overcome traffic related problems by providing a car park at the visitors centre and a shuttle bus service to the attraction. As can be seen from table 5.24, the research found that alternative fuel sources are not used for transport vehicles in use at the attractions.

Table 5.24 – Transportation at attractions

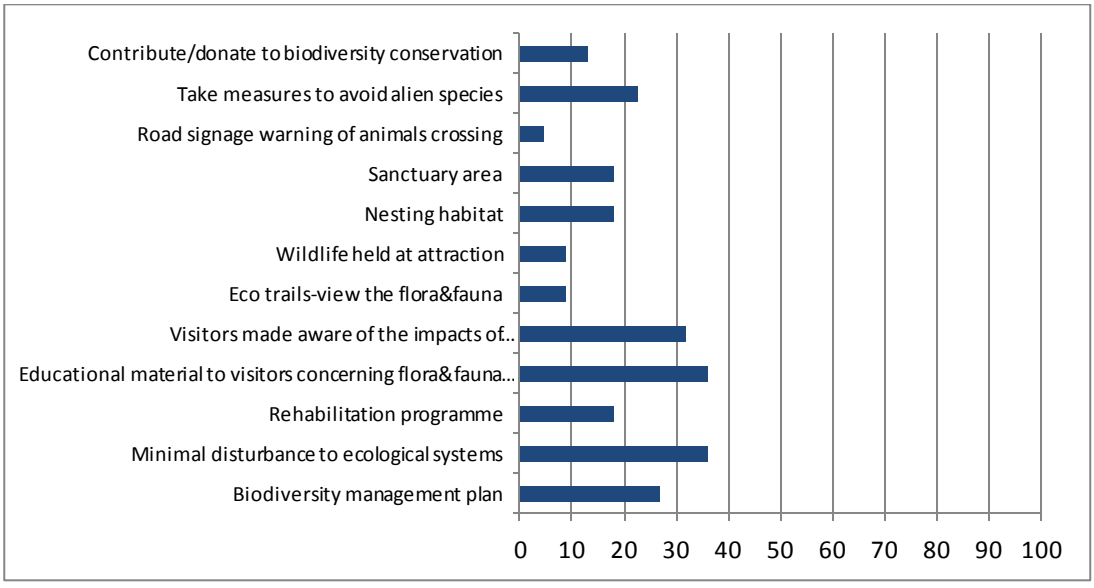


Less than 10% offer park and ride schemes and offer information on local bicycle hire and walkways. Over 90% of respondents do however encourage the use of public transport to their attraction. Finally, quite a poor result was noted for park and ride schemes. Theory from (ETB, 1991 and Peeters et al, 2007), suggests that traffic jams and people congestion in busier months could be avoided or easier to organise and manage if such schemes are put in place. Transportation planning appears to be quite irrelevant at the attractions and this may result in increasing physical impacts to the natural environment at these attractions. Managers could save costs and make a profit by adapting to simple changes such as switching to alternative fuels for the transport at their attractions.

5.19 Biodiversity

Attractive landscapes such as sandy beaches, lakes, riversides, and mountain tops, are often transitional zones, characterized by species-rich ecosystems. Physical impacts to an environmental landscape include the degradation of such ecosystems. It is important that these impacts are managed in a sustainable manner for future use Fáilte Ireland (2007). Physical impacts can include trampling of vegetation by tourists on foot, on horses, in off-road vehicles, and camping. This type of impact has been found in woodlands, grasslands, on cliff tops and on beach dunes (Edwards, 1987; Karan and Mather, 1985). Trampling leads to the destruction of plant life and erosion of paths (Edwards, 1987). A number of ecological problems can occur, such as the alteration of species composition and changes in ecological succession. Disposing of waste into the marine environment is also detrimental to sea life, especially when it is toxic (Miller, 1987). As can be seen from table 5.25, this research found that 27% of the attractions have a biodiversity management plan in place. These attractions also take appropriate action in disseminating information to the visitors concerning flora and fauna of area and how they can contribute to the area.

Table 5.25 – Biodiversity management at attractions



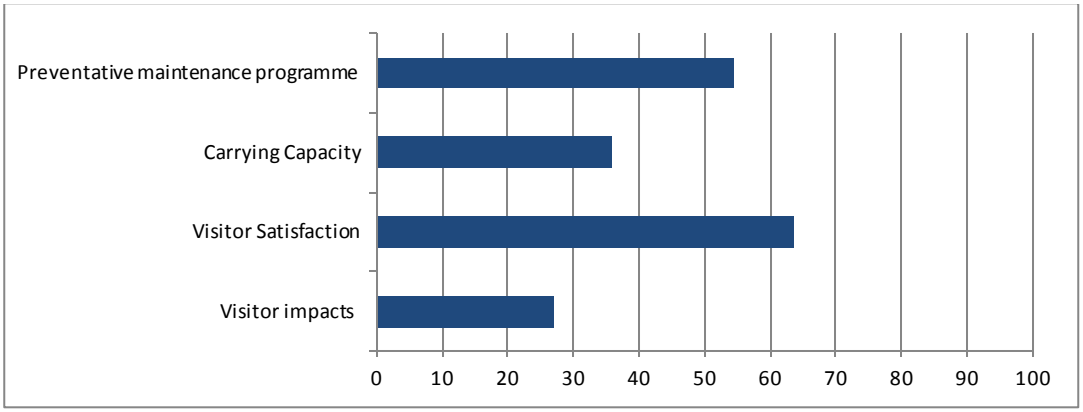
Information is also offered on the potential impacts of interacting with and disturbing the flora and fauna. Over 20% of attractions take measures to avoid alien species being introduced to their attractions with over 35% stating that this was not an issue at their attraction .This is quite a surprising find as Invasive Species can be a huge problem. They cost the European economy €12.7 billion per year. It can be a huge expense to eradicate

an alien species once introduced and spread at an attraction. Zebra mussels are an example of an alien species introduced to the Irish waterways. They smother native clams and mussels and cluster around warm water outflow pipes from power stations. Mitigating the damage caused by zebra mussels has so far cost the USA 5 billion dollars (Marine Conservation Society, 2001). A further 13% of respondents contribute or donate to biodiversity conservation. The evident lack of importance on biodiversity planning may result in increasing physical impacts to the natural environment at these attractions.

5.20 Monitoring impacts

According to the Convention on Biological Diversity (2009) long-term monitoring and assessment provide a means for detecting adverse effects on the environment that may arise from tourism activities and development, so that action can be taken to control and mitigate such effects. Monitoring is fundamental to understanding the relationship between a tourism business and its surrounding environments, and is a crucial part of achieving ecological sustainability (Queensland EPA, 2002). As can be seen from (table 5.26), the research found that only 27% monitor their visitor impacts, with 63% that monitor visitor satisfaction. A low 36% monitor their carrying capacity, which would be considered quite poor, with regard to problems of overcrowding at attractions.

Table 5.26 – Monitoring of impacts at attractions



As Shackley (1999) suggests the problem of overcrowding is highly dependent on the capacity of the site to receive visitors. When the site becomes overcrowded it makes it increasingly difficult to move around, therefore causing queues at bottlenecks. The impacts of overcrowding are typically evidenced by visitors feeling that they are unable to appreciate the character or ambience of a site, a reduced opportunity for visitors to do and

see everything they want to and consequent negative impact on visitor satisfaction. Monitoring is therefore important to avoid impacts such as overcrowding and negative visitor satisfaction at an attraction site. Training and guidelines are also important aspects for employees on the monitoring of impacts at attractions. Following these results techniques on monitoring impacts at visitor attractions will be implemented into the sustainable tourism management checklist.

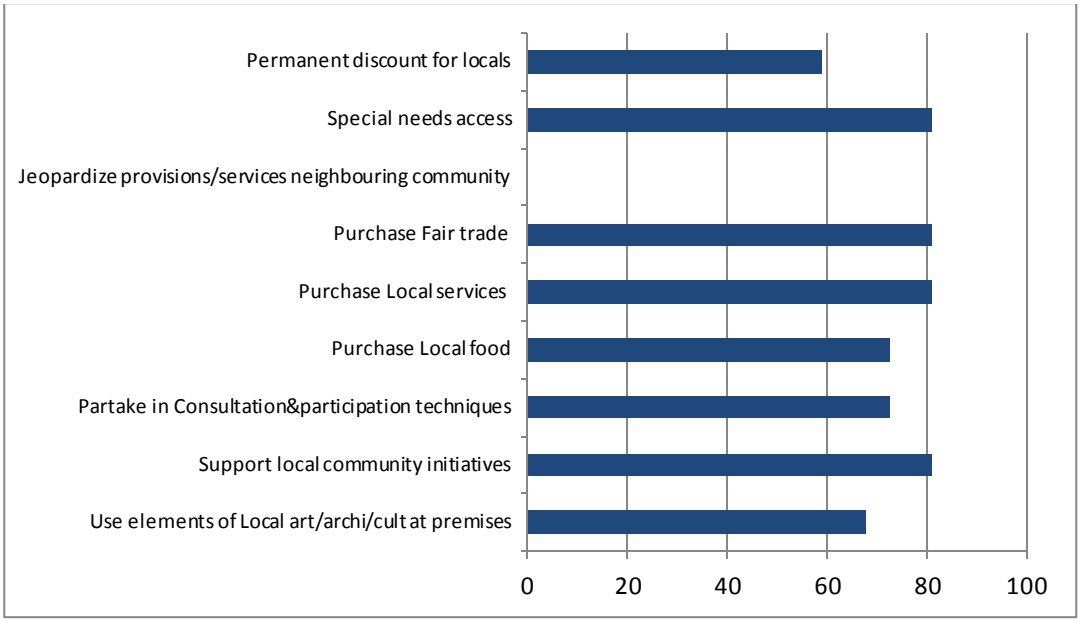
5.21 Social/Cultural initiatives management

Impacts on the local community may result from the thoughtless and antisocial behaviour of visitors. The ETB (1991), discuss that this may range from visitors unwittingly trespassing on private property, to loutish behaviour by visitors who have consumed too much alcohol in the visitor attraction bar. Visitors in large numbers can also cause congestion in local facilities, such as shopping areas or leisure centres. As a result the local community can come to feel besieged by visitors and perceive them to have a negative influence on the local community.

At the same time these impacts can run in the opposite direction with locals giving the visitors a negative experience by the way they treat the visitors. Burns and Holden (1995), describes one way in which visitors affect the host community, which is by means of the 'demonstration effect'. This may be positive in terms of the host community adopting productive patterns of behaviour from observing the tourists. In negative terms the locals can become resentful if they are unable to obtain the goods and lifestyles demonstrated by the visitors. This may result in a high number of emigrations from the area in search of the 'demonstrated lifestyle'. Another process, 'acculturation', may occur when the visiting period is prolonged and is deeper. Williams (1998) states; "Acculturation theory states that when two cultures come into contact for any length of time, an exchange of ideas and products will take place, that through time, produce varying levels of convergence between the cultures; that is they become similar".

As can be seen from table 5.27, over 80% of the attractions analysed support local community initiatives. A high number of over 70% of the managers partake in consultation and participation techniques with the local community, which is conducive to social/cultural sustainability.

Table 5.27 – Social/Cultural initiatives at attractions

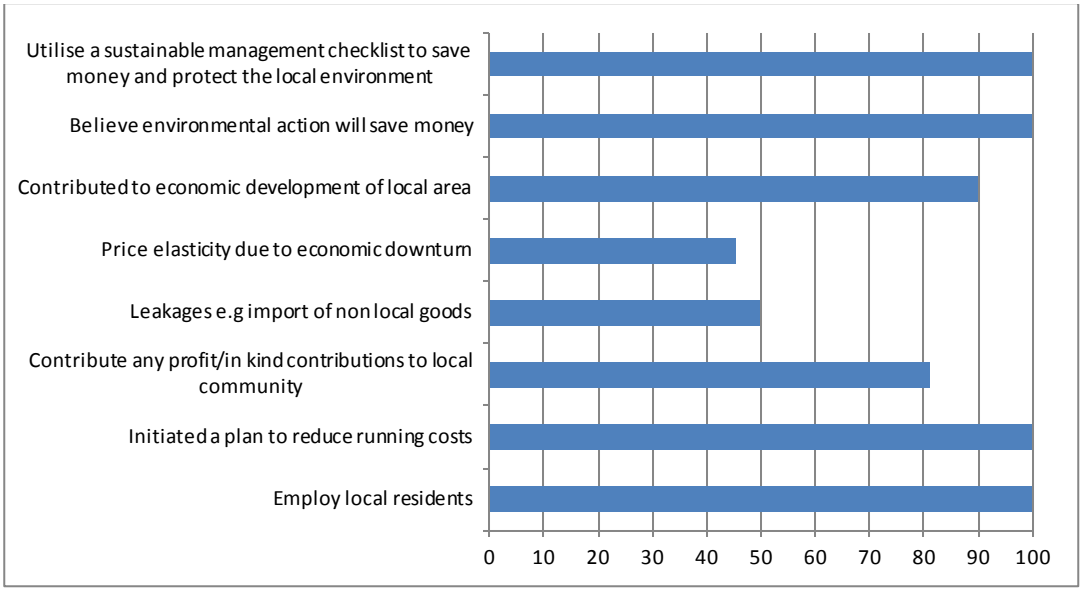


Over 70% of attraction managers purchase local food, with 80% that purchase local services and fair trade goods where possible. Special needs access is covered at 80% of the attractions. The assessed attractions are very conscious of social and community issues and actively support these initiatives. This is a good indicator of social/cultural sustainable management at these attractions.

5.22 Economic sustainable management

According to Stynes (1992) economic benefits and costs of tourism reach virtually everyone in a region in one way or another. Tourism activity involves economic costs, including the direct costs incurred by tourism businesses, government costs for infrastructure to better serve tourists, as well as congestion and related costs borne by individuals in the community. Tourism's economic impacts are therefore an important consideration in state, regional and community planning and economic development. As can be seen from (table 5.28), this research found that local employment is favoured by all attractions. A large margin of 80% of attractions contribute some of their profit or in kind contributions to the local community, therefore 50% say there would be leakages out of the local economy from their attraction. This may have to be revisited in light of the current economic climate.

Table 5.28 – Economic management at attractions



Over 40% reduced their prices in relation to the economic downturn and all respondents believe they have contributed to the economic development of the local area. The results also show that all the attractions have initiated a plan to reduce their overall running costs. These results are quite significant in that they show the importance of economic activity to and from the attractions. Cost savings are imperative for attractions in this economic climate. With effective sustainable management at attractions this is achievable through monitoring of energy use, water and waste volumes, and their costs. The implementation of energy saving systems, water and waste management systems and programmes can also attain cost savings, whilst helping to sustain the environment.

The use of alternative transportation fuels at attractions, biodiversity management plans and training on sustainable environmental practices can also accomplish cost savings. It should be highlighted that 100% of the attractions believe environmental action will save them money and would be willing to utilize a checklist to sustainably manage their attractions thus highlighting the importance of designing the sustainable management checklist from the research results. Examples of some of the responses from the attraction managers were, manager number one quoted "Such a checklist would be very beneficial to my attraction". Manager number 2 quoted, "Anything that will save money whilst helping to protect the environment is great and I would definitely use this". Manager number three quoted, "Yes, if this saves the attraction money I would definitely take a look at it". Manager number four quoted, "Excellent this is the way forward, going green

and saving money, this is what foreign tourists want to see". This fulfils an objective of this research as outlined in chapter one.

5.23 Towards a sustainable tourism management framework for tourism attraction managers

Five themes have been highlighted within the framework (see Table 5.29) on the general sustainable management at visitor attractions, following the findings from this chapter. This chapter has revealed that the level of sustainable management at attractions in Ireland is relatively poor. The majority of points made in the sustainable tourism management framework have not been addressed by attraction managers in the day to day running at the attractions.

The assessment of sustainable management at the attractions, points to a lack of education for attraction managers and employees on sustainability at attractions. Fáilte Ireland for example could initiate an education policy plan for all attraction managers and employees on sustainable management training. This may mean they have to provide a guideline or tool which facilitates sustainable tourism management for attractions, especially considering the fact that Fáilte Ireland has already developed environmental guidelines for horse riding. Such guidelines for tourism attractions could have a significant impact.

Table 5.29 Framework for the sustainable management at tourism attractions

1.Planning for the environmental impacts of tourism	Culture as a commodity
Tourism impacts	Authenticity of the tourist experience
Triple bottom line of sustainability	Tourism and material forms of culture
The environmental impacts of tourism	Tourism and non-material forms of culture
Impacts from CO2 emissions	Consultation and participation techniques with the local community
Impacts on biodiversity	Fair trade purchasing
Impacts on wildlife	Activities of tourism in which do not jeopardize the provision of services, such as water or energy, to the neighbouring communities
Impacts on waste/pollution	**4.Planning for the economic impacts of tourism**
Impacts on water quality	Support of initiatives for social structure community development including, among others, education, and corporate social responsibility
Impacts on energy consumption	Purchasing of local food, goods and services
Visitor management techniques	Tourist business offering a permanent discount off fare/entry for the local communities
Environmental Impact Assessments	Local employment
Management of the attraction knowledgeable and updated on all relevant tourism plans and legislation	Plans in place to reduce running costs
Personnel receiving regular training and awareness sessions regarding their role in sustainable environmental practices	Contribution of percentage of tourist business profits or in kind contributions back into the local community
Code of conduct for visitors	Leakages from the tourist business
Carrying Capacity	Price elasticity in relation to economic downturn
Environmental Management System	Contribution to economic development of local community
Eco taxes or eco charges	**5.Planning for Sustainability in tourism**
Purchasing policy to buy eco-certified products	Government legislation
2.Planning for the social impacts of tourism	The principals of sustainability in tourism
Tourist-host interrelationships	The four pillars of sustainable tourism
Tourism and social change: euphoria to xenophobia	Criteria for sustainability in tourism
Tourism and moral conduct	Sustainable Planning for tourism
Tourism and religion	The UNWTO'S twelve aims for sustainable tourism
Tourism and language	Fáilte Ireland Sustainable tourism principals
Tourism and health	The tools of sustainability in tourism
Special needs access	DIT ACHIEV model of sustainable tourism indicators
3.Planning for the cultural impacts of tourism	Foot printing and Carbon budget analysis
Tourism and cultural change	Fair trade in tourism
Intercultural communication	Certification of Sustainable Tourism

To address these findings, this research suggests the need for guidelines or a sustainable management checklist, that helps to overcome these issues and allows attraction managers to follow. The framework in table 5.29 will be assessed and discussed in context of the frameworks from chapters two and three, and be presented as a final checklist for tourism attraction managers in chapter six. The proposed checklist will be discussed in detail in the concluding chapter six.

5.24 Conclusion

This chapter has given a discussion on the current level of sustainability at visitor attractions in Ireland. Annual visitor numbers to tourist attractions in 2010, exceeded over sixteen million visits, with such huge tourist movement a sustainable approach in tourism management is necessary to preserve the Irish environment. Managers of attractions in Ireland are not aware or knowledgeable enough in the area of sustainability. Education is

paramount for these mangers if they are to sustain and carry a viable and profitable business into the future.

Implementing sustainable management practices at attractions are essential to save money and help protect the environment. The analysis highlights how these practices are needed in Ireland. Such sustainable management practices include, implementing the triple bottom line of sustainability, visitor management techniques and conducting environmental impact assessments at attractions. Others include knowledge and awareness of tourism plans and legislation, sustainable management training for personnel, the introduction of codes of conduct, establishing a carrying capacity. Finally operating under environmental management systems, introduction of eco taxes or eco charges and purchasing policies for environmentally friendly products.

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If tourism is to stimulate the economy, improve from the current position in Ireland and provide jobs for generations to come, then tourism attractions must be developed and managed sustainably. Cost savings are imperative for attractions in this economic climate. With effective sustainable management at attractions this is achievable through monitoring of energy use, water and waste volumes, and their costs. The implementation of energy saving systems, water and waste management systems and programmes can also attain cost savings, whilst helping to sustain the environment. The use of alternative transportation fuels at attractions, biodiversity management plans and training on sustainable environmental practices can also accomplish cost savings. It is clear from the findings that attraction managers believe environmental action will save them money. Furthermore, attraction managers would be willing to utilise a checklist to sustainably manage their attractions, thus highlighting the importance of the development of the checklist.

CHAPTER 6

CONCLUSION

6.1 Introduction

The aim of this thesis was to present the conclusions that can be drawn from the key findings of the analysis on the current sustainability of Irish tourist attractions. This research is Ireland's first baseline study in this area which will be of key importance when conducting a longitudinal analysis on the same in the future. Recommendations have been developed which could be adopted by tourism attraction managers for the future of sustainability at their attractions in Ireland. Initially, the review of the literature identified two key factors of growing importance, first, the need for the tourism industry to practice tourism in a sustainable manner and second, the need to manage impacts at tourism attractions. This can be done with the help of training and education by local authorities and Fáilte Ireland to tourism attraction managers.

A sustainable management checklist is recommended for tourism attractions, which can be seen in table 6.1. This checklist can help bridge the gap between the academic knowledge and the act of facilitating sustainability amongst tourism attractions in the tourism sector through sustainable practices.

6.2 Sustainable management of attractions in Ireland

Tourism can impact the environment in a number of ways and extensive literature has described the problems of degradation of natural habitats, soil erosion, pollution, litter, disruption to wildlife, damage to vegetation and energy use (Mathieson and Wall, 1982; Karan and Mather, 1985; Salm,1986; Bacon, 1987; Edwards, 1987 ; Gartner, 1987; Miller, 1987; Hamele, 1988; Simmons, 1988; Goldman, 1989; Boo, 1990; Kovacs and Innes, 1990; Olokesusi, 1990; May, 1991; Wheatcroft, 1991; Witt, 1991; Shackley, 1994 and 1996; Marullo, 1995; Raj and McNeely, 1995; Gurung, 1998; Chand, 2000; Gurung and DeCoursey, 2000; Dieke, MacLellan and Thapa 2000). The literature in this research has discussed how sustainability in tourism is essential in order to preserve our environment for future generations.

Knowledge and understanding by tourism attraction managers of visitor impacts had quite a high result of 32% of respondents unaware of such. A structured approach by visitor attractions to managing the impact of tourism on natural assets is essential to ensure sustainability and the continued enjoyment of those assets for both tourism and recreation (Bull, 1995; Swarbrooke, 1999; Weaver, 2006). In order to minimise the impacts of tourism on natural assets, attractions need useful information on which to base decisions. Yet despite their importance, many of Ireland's natural assets do not have specific management guidelines for minimising visitor impacts. The sustainable management of natural assets and an education policy for all personnel at attractions on potential visitor impacts and how to sustain the local environment, has many broader advantages. This action will help Ireland maintain its competitive clean, green image, fulfilling national strategies and helping tourist attractions remain profitable and effective.

After building upon the theory of sustainability and tourism, along with tourism impacts at attractions from chapters two and three, the sustainable tourism management framework was developed. This framework was used to assess the tourism attractions and the analyses and discussion was then used to design a sustainable management checklist. The checklist will aid attraction managers in the transition to sustainable visitor attractions. This can be seen in table 6.1. The first and second aims of this research were addressed here with the development of the sustainable management checklist. The next section concludes upon the aims and objectives of this research. A discussion and recommendations are given on the areas of water, energy, waste/recycling, monitoring impacts, transportation, biodiversity, social/cultural sustainable management and economic sustainable management. One of the aims of this research was;

1. To critically examine the current sustainability of key tourist attractions in terms of, water, energy, waste/recycling, monitoring, training, transportation, biodiversity, social/cultural sustainable management and economic sustainable management.

This aim was achieved through the implementation of the following objectives:

(a) To conduct an in-depth analyses and review of contemporary literature on impacts of tourism at visitor attractions.

(b) To determine the extent to which managers of tourist attractions would be willing to utilise a checklist to minimise the environmental impact of tourist's attractions.

The first aim of this research is discussed in the following sections in terms of water, energy, waste/recycling, monitoring, training, transportation, biodiversity, social/cultural sustainable management and economic sustainable management. Recommendations are made on the findings of each area. The first objective (a), of the aims was completed in chapter three which discusses relevant literature pertaining to impacts of tourism at visitor attractions. The second objective (b), which discusses the attraction managers willingness to utilise a sustainable management checklist, is discussed at the end of this section, at 6.2.9.

6.2.1 Water

In the area of water management at the assessed attractions, the findings identified that 59% of attractions have water management plans and 81% have water metering systems. However from a cost saving point of view, it is worth noting that no manager knew their water usage and less than 5% knew their costs per year. Water saving systems or programmes do not seem to be top of the agenda for these attractions, as out of fourteen possibilities attractions only used four. These systems and programmes included self-closing taps, dual flush toilets, spray taps and rain water harvesting systems as can be seen at the new Aviva stadium in Dublin. With a lack of monitoring on water usage, a lot of money can be lost at the attractions.

Huge cost savings can potentially be made if the volumes and costs are monitored and managed. The checklist has been designed to ask managers if they have water meters in place and are monitoring and recording their water usage. The checklist will ensure the attraction managers are utilising this system which will contain policy numbers. Water metering systems can help managers identify how much water they use and at what cost. This system can be especially useful due to the expense of water charges. They have increased for tourism businesses and this is likely to continue with the current austerity measures being introduced by the EU, which will be passed onto the Irish government (Hanrahan and Liddy, 2012). Attraction managers may then consider water saving systems such as the rain water harvesting system to minimise costs and maximise savings.

6.2.1.1 Recommendations

It is essential that attraction managers receive support from tourism authorities such as Fáilte Ireland and local county councils by means of training for managers and staff at the

attractions on the advantages of adopting sustainable water management practices at the attractions. The EPA could also introduce funding and training here for sustainable water management. With the implementation of the sustainable management checklist at attractions, this tool will guide managers on regularly monitoring volumes and costs of water use, along with types of water saving systems and programmes.

6.2.2 Energy

Attractions have a great potential to reduce energy consumption. It can be achieved through both investing in new technologies, and low cost options. In view of the finding that 68% of attractions have an energy management plan or action in place, only a meagre 9% knew their energy usage and just over 25% knew their costs per year. These attractions along with the 32% of attractions that don't have an energy management plan in place are then open to losing money. The researcher has identified a number of large disparities in the area of energy management, with a lack of use of energy saving systems such as simply changing light bulbs to energy saving LED light bulbs.

6.2.2.1 Recommendations

Clearly the staff and management in all areas of the attractions need to be trained of sustainable energy management. From training staff, attraction managers can implement plans and actions to reduce costs, this action alone can yield savings of at least 10%. Monitoring of energy use will also save on costs. Many investments in energy saving systems have a relatively short payback period and are accompanied by immediate energy savings. For example, with energy efficient lighting energy costs can be reduced dramatically, by at least 50%, and it pays back very rapidly, in some cases in well under two years.

Using energy-efficient control systems, such as, time scheduled systems and daylight and motion sensors, can yield energy savings up to 50% (SEI, 2009). Other considerations include maximum use of natural light, heat and ventilation, keeping fixtures and fittings clean, as dirt can reduce their output by half, and introducing task-specific lighting to avoid need for full illumination when only a proportion on room requires it. Sustainable Energy Ireland grants and possible training could help tourism attraction managers to use energy sustainably. Government grant aid could facilitate tourism attractions in the transition to sustainable levels of energy consumption and in some cases, tourism

attractions could produce their own energy, for example biomass or solar power. Furthermore the checklist contains sustainable energy management techniques. This tool will allow tourism attraction managers to identify if they have the correct techniques in place to minimise costs and maximise savings.

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6.2.3 Waste/Recycling

Findings on waste and recycling management found that, over 70% of respondents have a waste management plan in place, but alarmingly none of which knew their measurements or costs per year. Over 90% of the respondents separate their recyclables, landfill and residual waste and 30% are under a recycling scheme. This high percentage of attractions that recycle their materials is quite significant and reduces a great deal of waste disposed of to landfill. A high figure of 80%, undertake responsible marketing, for example e-marketing and the use of environmentally friendly printing materials.

6.2.3.1 Recommendations

Again there is room for improvement at attractions in relation to sustainable waste management, with potential cost savings from monitoring waste use and costs and implementing waste management actions. Training for employees and management could again be implemented by local authorities and Fáilte Ireland in order to save on waste use and costs and to educate on the importance of sustainable waste management for the environment. Local county councils can also help with training on waste management. The checklist will guide tourism attraction managers with a tool to identify if they have the correct techniques in place to minimise costs and maximise savings in the area of waste and recycling sustainable management.

6.2.4 Monitoring impacts

Results from attraction managers monitoring impacts at attractions were found to be quite poor. As only 27% of attractions monitor their visitor impacts, a meagre 36% monitor their carrying capacity, this can cause problems with regards to overcrowding at attractions. As Shackley (1999) suggests the problem of overcrowding is highly dependent on the capacity of the site to receive visitors. When the site becomes overcrowded it makes it increasingly difficult to move around, therefore causing queues at bottlenecks.

6.2.4.1 Recommendations

Training staff on how to regularly monitor impacts will help to save the environment and maintain visitor satisfaction. Fáilte Ireland and local county councils could again intervene with attraction managers and provide training on the importance of this area to the environment. Regular monitoring is necessary to avoid impacts such as overcrowding and negative visitor satisfaction at an attraction site. The checklist will assist attraction managers in this area with a tool on how to implement visitor management techniques at their attractions.

6.2.5 Transportation

Transportation planning at the assessed attractions appears to be quite insignificant, this may result in increasing physical impacts to the natural environment at these attractions. Transport is an important and increasing source of greenhouse gas emissions that are contributing to global warming. A recent report suggests that aviation is responsible for 75% of all greenhouse gas emissions of all EU tourism transport (Peters et al, 2007). Findings from this research were that, no respondents have introduced eco-taxes or charges. Alternative fuel sources are not used for transport vehicles in use at the attractions. Less than 10% of respondents offer park and ride schemes, initiate carbon offsetting or offer information on local bicycle hire and walkways.

6.2.5.1 Recommendations

Theory suggests that traffic jams and people congestion in busier months could be avoided or easier to organise and manage if schemes, such as those from the checklist are put in place. Managers could save costs and make a profit by adapting to simple changes such as switching to alternative fuels for the transport at their attractions. Tourism authorities such as Fáilte Ireland and county councils can again educate attraction managers on sustainable transportation methods. The checklist will allow attraction managers to utilise a tool, to ask themselves whether or not they are participating in such schemes and will list the necessary options that can be put in place in order to obtain sustainable transport management at their attractions.

6.2.6 Biodiversity

Biodiversity planning appears to be quite insignificant at the assessed attractions, with findings of only 27% of the attractions having a biodiversity management plan in place. Just over 20% of attractions take measures to avoid alien species being introduced to their attractions, this may result in increasing physical impacts to the natural environment at these attractions. With such a large percentage of attractions not taking measures to avoid alien species, this may result in a huge expense to eradicate such a species once introduced.

6.2.6.1 Recommendations

Again extensive training is required for tourism attraction managers and employees by Fáilte Ireland and the local county councils on sustainable biodiversity management. The EPA could also assist with funding on sustainable biodiversity planning at attractions. Education on how to evade the introduction of invasive species to the attraction, will help to avoid degradation to the ecosystems and landscapes, thus saving money and the environment. The checklist has been designed to ask attraction managers questions on the stance of their biodiversity management and shows how attraction managers can manage biodiversity at their attractions in a sustainable manner.

6.2.7 Social/cultural sustainable management

Social/cultural sustainable management at the assessed attractions was found to be very good, with 80% of the attractions supporting local community initiatives. A high number of over 70% of the managers partake in consultation and participation techniques with the local community, which is conducive to social/cultural sustainability.

Local food purchases were quite high and the assessed attractions are very conscious of social and community issues, actively supporting these initiatives. This is a good indicator of social/cultural sustainable management at these attractions, as it is important to maintain community satisfaction and support local goods, services and employment for a in order to contribute to local economic development.

6.2.7.1 Recommendations

A social/cultural sustainable management section is included in the checklist for attraction managers on how to maintain social/cultural sustainability. It is important that this high standard is maintained in Ireland and the checklist will facilitate managers to monitor

their social/cultural sustainability with the points on this area that's included in the checklist.

6.2.8 Economic sustainable management

Local employment was found to be favoured by all attractions. A large margin of 80% of attractions contribute some of their profit or in kind contributions to the local community, with 50% responding that there would be leakages out of the local economy from their attraction. This may have to be revisited in light of the current economic climate, as it would not make financial sense to have any leakages seeping from the local economy.

It should be highlighted that all the attractions believe environmental action will save them money and would be willing to utilize a checklist to sustainably manage their attractions. The results found in the analysis chapter are quite significant in that they show the importance of economic activity to and from the attractions.

6.2.8.1 Recommendations

Economic impacts and in particular cost saving are at the top of tourist attractions agendas and is imperative in this economic climate. Without sustainable management actions and staff training from tourism authorities such as local county councils and Fáilte Ireland, on sustainability in all areas at the attractions, revenue will be lost and imperative savings will be missed out on. An economic sustainable management section is implemented in the checklist for attraction managers. The checklist attempts to aid managers to monitor such areas as, local employment, leakages from the attraction, local purchasing and plans to reduce running costs at the attraction. The next section discusses the conclusion of the second aim of this research.

6.2.9 The willingness of managers at visitor attractions to utilise a sustainable management checklist

From the research findings it was found that all the attraction managers assesses, believe environmental action will save them money. Attraction managers would also be willing to utilise a checklist to sustainably manage their attractions. Their responses to the nature of this research and to the development of the checklist were very positive. Examples of some of the responses from the attraction managers were, manager number one quoted "Such a checklist would be very beneficial to my attraction". Manager number 2 quoted,

"Anything that will save money whilst helping to protect the environment is great and I would definitely use this". Manager number three quoted, "Yes, if this saves the attraction money I would definitely take a look at it". Manager number four quoted, "Excellent this is the way forward, going green and saving money, this is what foreign tourists want to see". Attraction managers appear to be very positive about the development of a sustainable management checklist. Their attitudes deemed the checklist as valuable to their business in order to save money and help protect the environment.

These managers discussed how training and funding would be beneficial to them from such bodies as that of Fáilte Ireland, the EPA or authorities such as local county councils. Attraction managers further discussed how training and funding could support them with the implementation and knowledge of sustainable environmental practices such as those contained in the checklist and to how to maintain such action.

These responses have shown the importance and need for tourism attraction managers to utilise such a checklist to maintain their business sustainably and help to protect the surrounding environment. These results have fulfilled the second objective (b), of the aims of this research as highlighted in section 6.2. It has shown the attraction managers willingness to utilise a checklist in order to sustainably manage their attractions. The next section discusses the second aim of this research which also fulfils the third objective of the aims.

6.3 The sustainable tourism management checklist for tourism attractions in Ireland

In order to manage tourist attractions in a sustainable manner it is necessary identify key performance indicators and determine if management have adopted the necessary measures to sustainably manage their attractions. This was the second aim of this research:

1. To develop a generic sustainable tourism checklist for tourism attractions which could reduce running costs and facilitate managers in converting their products to sustainable tourist attractions.

   (b) This aim was achieved through the implementation of the following objective:
   To produce a checklist which attraction managers can use when planning and also in the day to day operation of the attractions to aid the transition to sustainable tourism within Ireland.

Due to the applied and comparative nature of the research it seems appropriate to take advantage of the data and utilise the research to design a tool which may be of use to the attraction managers when planning and operating these attractions within Ireland in the future. The sustainable tourism management checklist is shown in table 6.1. It is the completed checklist for tourism attraction managers in Ireland. This could be implemented by managers of these tourism attractions when planning and also in the day to day operation of the attractions. If implemented, it could aid attraction managers in the transition to sustainable tourism within Ireland. Furthermore if attraction managers are willing to utilize this checklist, it may help to minimize the environmental impact of their attractions and save on costs. This will involve the assessment of the individual managers' attitude to planning and operating their attraction in a sustainable manner, as well as possible barriers which may hinder the managers' efforts. Cost savings are imperative for attractions in this economic climate for their business to survive and sustainable management is imperative for their business and the environment to sustain a future for generations to come.

The checklist contains sections in order to aid attraction managers with the transition to sustainable management at their attractions. These sections vary from the level of sustainability at attractions through to more in depth sections on the sustainable management at the attractions, in the areas of water, energy, waste/recycling, monitoring, transportation, biodiversity, social/cultural and economic sustainable management. An overview of each major section is now provided, however it is important to realise that the various elements of this checklist have been drawn from the previous findings and recommendations.

Table 6.1 Sustainable Management Checklist for Tourism Attractions in Ireland

1 Sustainable management of the attractions	Y	N	P
Management aware of impacts the attraction can have on the environment?			
Attraction operates under the principal of the triple bottom line of sustainability?			
Attraction any visitor management techniques, e.g. zoning, visitor dispersion?			
Has there been an environmental impact assessment carried out on the attraction?			
Management of attraction knowledgeable on tourism plans and legislation?			
Personnel receive regular training regarding their role in environmental practices?			
Are visitors provided with a code of conduct for visiting the attraction?			
Carrying capacity established for attraction e.g. physical, ecological, and social?			
Is the attraction operating under an Environmental Management System (EMS)?			
Has the attraction introduced eco-taxes or eco charges?			
Does the attraction have a purchasing policy to buy eco-certified products? If not, is the attraction actively seeking ways to reduce their use of dangerous chemicals in their products?			
2 Water			
Does the attraction have a water management plan?			
Does the attraction have a water metering system in place?			
Does the attraction monitor water costs?			
Does the attraction have any of the following water saving systems or programmes?			
- Grey Water System			
- Water saving information for customers/guests			
- Active towel reuse programme (guest accommodation)			
- Active linen reuse programme (guest accommodation)			
- Self-closing taps (push tops)			
- Spray taps			
- Water flow restrictors for taps and showers			
- Dual flush toilets			
- Hippo bags			
- Waterless urinals			
- Urinals fitted with water conservation devices (automatic or manual flushing systems)			
- Urinals turned off at night to reduce flows			
- Leak detection process			
3 Energy			
Does the attraction have an energy management plan?			
Is there an energy sub-metering system in place?			
Does the attraction monitor energy costs?			
Does the attraction have a BER certificate?			
Does the attraction source their energy from any of the following sources?			
- Airtricity			
- Geothermal			
- Hydroelectric system			
- Wind power			
- Biomass			
- Solar			
Is the building insulated including all windows, ducts, and pipes containing hot air			
Is there a list of the top 20 energy consuming equipment on site?			
Has the attraction conducted a light audit?			
Has the attraction changed all incandescent light bulbs to energy saving florescent/ LED bulbs?			
Attractions use any of the following energy saving systems or programmes?			
- Automatic lighting/sensors/timer			
- Employees trained in energy management techniques			
- Zoning system (where lights, heating and air-con can be controlled separately in different areas as required			
- Building Management System (an electronic pre-programmed system which controls everything (lights, heating, air conditioning throughout the building)			
- Energy efficient boiler			
- Combined Heat and Power plant (CHP)			
- Standby activation modes for computers/printers/copiers/scanners			
- Plug-in timers for equipment such as printers, food and drink dispensers, water chillers, water-heating urns etc. so they cannot be left on overnight?			
- Air conditioning control system - where it is automatically turned off when			
- Information available to the customer/guest reminding them to close the window if the air conditioning is on			
- A heating control system where it is automatically turned off when windows are opened?			
- Information available to the customer/guest reminding them to close the window if the heating is on			
- Thermostats set in a suitable place, away from drafts and heat sources to give a representative temperature measurement, averaging 18°C - 21°C			
- Radiators with thermostatic radiator valves (TRVs)			
- When replacing or purchasing new equipment, do you purchase energy efficient A or A+ rated equipment (e.g., refrigerators, office equipment)			
Attraction operate a 'facilities management' initiative whereby every piece of plumbing and machinery at the attraction is regularly inspected to ensure efficiency?			
Attraction partake in carbon offsetting involving either planting trees, investing or donating to companies/organisations that are developing renewable energy technologies?			

4 Waste/Recycling	Y	N	P
Is there a waste management plan in place at the attraction?			
Is waste consumption measured?			
Are waste costs measured?			
Does the attraction undertake any of the following waste management actions?			
- Separate and manage recyclable waste			
- Separate and manage hazardous waste			
- Separate and manage landfill/residual waste			
- The use of waste management equipment, e.g. balers, shredders, composters, etc...			
- Avoid the use of one use/single portion packaging for food items			
- Avoid the use of one use/single portion toiletries, by using refillable dispensers			
- Recycle used furniture/textiles/materials			
- Use a plumbed-in mains water filter, rather than a replaceable drum water cooler			
- Undertake responsible marketing (e.g. e-marketing, 100% environmentally friendly marketing materials; recycled paper)			
- Code of practice with your suppliers, where they take back their packaging			
- Refuse to accept pallets, bubble wrap, shrink wrap, polystyrene etc, from your suppliers			
Is the attraction a member of any recycling scheme, e.g. Repak?			
Attraction document the percentage of recyclables diverted from landfill?			
5 Monitoring			
Does the attraction monitor any of the following:			
- impacts of the attraction			
- Visitor satisfaction			
- Carrying capacity			
Does the attraction have a preventative maintenance programme?			
6 Transportation			
Does the attraction source their transportation fuel from any alternative source?			
-Biomass			
- Hydroelectric system			
- Wind power			
Does the attraction do any of the following?			
- Offer park and ride schemes			
- Offer bicycles for hire			
- Offer information on local bicycle hire			
- Offer details on local cycle ways			
- Encourage the use of public transport to the attraction			
- Offer details of local paths			
- Have traffic control systems for the visitors			
Does the attraction offer carbon offsetting options to their customers to offset the impact of their travel to the attraction?			
7 Biodiversity/Wildlife			
Does the attraction have a biodiversity management plan in place?			
Does the operation of the attraction involve minimal disturbance to ecological systems?			
If any ecological areas are disturbed, is there a rehabilitation programme in place to restore these systems?			
Is educational material provided to visitors concerning the different types of flora and fauna at the attraction and how they contribute to the area?			
Are visitors made aware of the impacts of interacting and disturbing the flora and fauna at the attraction?			
Does the attraction have any of the following?			
- Eco trails used to view the flora and fauna			
- Wildlife held at the attraction			
- A nesting habitat			
- A sanctuary area			
- Road signage available en route to and from the attraction in areas where there are wildlife, to warn drivers of animals crossing			
8 Social/Cultural and Economic sustainable management			
Does the attraction use elements of local art, architecture, cultural heritage at the premises?			
Does the attraction partake in consultation and participation technique with the local?			
Does the attraction purchase fair trade goods?			
Do the activities of the attraction jeopardize the provision of basic services, such as water or energy, to the neighbouring communities?			
Does the attraction offer a permanent discount off fare/entry for locals?			
Are there special needs at the attraction?			
Do you employ local residents, e.g. living within a ten km radius?			
Has the attraction initiated a plan to reduce running costs at the attraction e.g. energy, waste, water, purchases?			
Does the attraction contribute any of its profit or in kind contributions back into the community?			
Are there any leakages out of the local economy created from your attraction? E.g. in the form of imports, such as food and beverages purchased that are not supplied by the local community?			
Has the attraction contributed to the economic development of the local area?			
Further strategic planning observation			

The checklist is presented in a compact form to facilitate attraction managers. The main headings are identified in the shaded font and each sub element has a Y- yes, N- No, and P- Policy number present box which can be ticked by the manager to give them an over view of areas to improve on and alternatively area which can be commended for good performance.

The checklist is now discussed under each section, which includes the following headings, sustainable management of the attractions, water, energy, waste/recycling, monitoring, transportation, biodiversity/wildlife, social/cultural and economic sustainable management and further strategic planning observation.

6.3.1 Sustainable management of the attractions

The checklist first of all asks management of the attractions if they are aware of impacts the attraction can have on the environment. Managers need to know if their attraction has any negative impacts on the environment. The attraction is then asked if they operate under the principal of the triple bottom line of sustainability. The managers then look at any visitor management techniques, e.g. zoning or visitor dispersion at the attraction in order to control crowds. The attraction may have or look into carrying out an environmental impact assessment on the attraction. The next step is to ensure management of the attraction are knowledgeable and updated on relevant tourism plans and legislation. Personnel need to receive regular training regarding their role in environmental practices at the attractions. Visitors should be provided with a code of conduct for visiting the attraction. The carrying capacity needs to be established for the attraction e.g. in either the physical, ecological or social component. The managers are asked if the attraction is operating under an Environmental Management System and if it has introduced any eco-taxes or eco charges. Finally in this section managers are asked if they have a purchasing policy to buy eco certified products and if not is the attraction actively seeking ways to reduce their use of dangerous chemicals in their products. The next section is on water management.

6.3.2 Water

In the water management section, attraction managers are asked if they have a water management plan in place in order to save money and water. Water metering systems, attractions measuring their water volumes and knowing their water costs per year are

required for water management at the attractions. Attraction managers are then asked if they use any of the following water saving systems or programmes at the attractions. Once some of these systems are in use it is a good contribution to water saving. These systems are; rain water harvesting system, grey water system, water saving information for customers/guests, active towel reuse programme (guest accommodation), active linen re-use programme (guest accommodation), self -closing taps (push tops), spray taps, water flow restrictors for taps and showers, dual flush toilets, hippo bags, waterless urinals, urinals fitted with water conservation devices (automatic or manual flushing systems), urinals turned off at night to reduce flows and finally leak detection process. The next section is energy management.

6.3.3 Energy

The energy management section starts with the same as that of the water management section, with the attraction managers asked if they have an energy management plan in place. An energy sub-metering system should be in place in order to account the attractions energy use and therefore curtail on costs. The attraction should have a BER certificate. Managers are then asked if the attraction source their energy from any of the following sources. These are Airtricity, geothermal, hydroelectric system, wind power, biomass or solar power. The attraction should be insulated including all windows, ducts, and pipes containing hot air and water. Managers are asked if there is a list of the top 20 energy consuming equipment on site, so they can be aware of how this equipment is used. A light audit should be conducted with all incandescent light bulbs changed to energy saving florescent/ LED bulbs.

Managers are then asked if they use any of the following energy saving systems or programmes in order to save on energy and costs. These are; automatic lighting/sensors/timer, employees trained in energy management techniques, zoning system (where lights, heating and air-con can be controlled separately in different areas as required, a building management system (an electronic pre- programmed system which controls everything (lights, heating, air conditioning throughout the building), energy efficient boiler, combined heat and power plant (CHP), standby activation modes for computers/printers/copiers/scanners, plug-in timers for equipment such as printers, food and drink dispensers, water chillers, water-heating urns etc. so they cannot be left on overnight, air conditioning control system - where it is automatically turned off when

windows are opened, information available to the customer/guest reminding them to close the window if the air conditioning is on, a heating control system where it is automatically turned off when windows are opened, information available to the customer/guest reminding them to close the window if the heating is on, thermostats set in a suitable place, away from drafts and heat sources to give a representative temperature measurement, averaging 18°C - 21°C, radiators with thermostatic radiator valves (TRVs), when replacing or purchasing new equipment, do you purchase energy efficient A or A+ rated equipment (e.g., refrigerators, office equipment).

Attractions are then advised to operate a 'facilities management' initiative whereby every piece of plumbing and machinery at the attraction is regularly inspected to ensure efficiency. Attractions could partake in carbon offsetting by either planting trees, investing or donating to companies/organisations that are developing renewable energy technologies. The next section discussed the implementation of waste/recycling sustainable management techniques.

6.3.4 Waste/recycling

This section again starts with asking the attraction managers if there is a waste management plan in place at the attraction in order to save on overuse of waste and costs. The measurement of waste consumption and the costs measured are necessary as part of the implementation of a waste management plan. Managers are asked if the attraction undertakes any waste management actions. These actions include; separate and manage recyclable waste, separate and manage hazardous waste, separate and manage landfill/residual waste, the use of waste management equipment, e.g. balers, shredders, composters, etc..., avoid the use of one use/single portion packaging for food items, avoid the use of one use/single portion toiletries, by using refillable dispensers, recycle used furniture/textiles/materials, use a plumbed-in mains water filter, rather than a replaceable drum water cooler, undertake responsible marketing (e.g. e-marketing, 100% environmentally friendly marketing materials; recycled paper), code of practice with your suppliers, where they take back their packaging, refuse to accept pallets, bubble wrap, shrink wrap, polystyrene etc, from your suppliers. The final parts to this section are whether or not the attraction is a member of any recycling scheme, e.g. Repak and if they document the percentage of recyclables diverted away from landfill. The next section is monitoring at the attraction.

6.3.5 Monitoring

In the monitoring section, attraction managers were asked if they monitor impacts from the attraction**,** visitor satisfaction at the attraction and the attractions carrying capacity. Monitoring impacts at the attraction are important in order to know where these impacts are coming from and how to deal with them to prevent future impacts. Visitor satisfaction needs to be monitored in order to sustain the level of visitor numbers to the attraction. The attractions carrying capacity is necessary to be continuously monitored in order to control crowds and bottlenecks at attractions, thus preventing unnecessary impacts at the attraction and possible negative visitor satisfaction. The managers are asked if the attractions have a preventative maintenance programme which is maintenance conducted to keep equipment working and/or extend the life of the equipment. This section leads into the sustainable management of transportation at the attractions.

6.3.6 Transportation

In the section of transportation, attractions are asked if they source their transportation fuel from any alternative renewable energy sources such as biomass power, hydroelectric system and wind power. Attractions are also asked if they do any of the following; offer park and ride schemes, offer bicycles for hire, offer information on local bicycle hire, offer details on local cycle ways, encourage the use of public transport to the attraction, offer details of local paths or have traffic control systems for the visitors. Finally managers are asked if the attraction offers carbon offsetting options to their customers to offset the impact of their travel to the attraction. The next section discusses the biodiversity/wildlife sustainable management section in the checklist.

6.3.7 Biodiversity/wildlife

This section starts with the question of having a biodiversity management plan in place at the attractions. Managers are asked if the operation of the attraction involve minimal disturbance to ecological systems and if any ecological areas are disturbed, is there a rehabilitation programme in place to restore these systems. The next part asks if educational material is provided to visitors concerning the different types of flora and fauna at the attraction and how they contribute to the area. It is important visitors are made aware of the impacts of interacting and disturbing the flora and fauna at the attraction. Managers are asked if the attraction have any of the following; eco trails used to view the flora and fauna, wildlife held at the attraction, a nesting habitat, a sanctuary

area, road signage available en route to and from the attraction in areas where there are wildlife, to warn drivers of animals crossing. The next section is based on the social/cultural and economic sustainable management at attractions.

6.3.8 Social/cultural and economic sustainable management

This section involves the attraction using elements of local art, architecture, cultural heritage at the premises and partaking in consultation and participation techniques with the local community. Managers are asked if they purchase fair trade good and if the activities of the attraction jeopardize the provision of basic services, such as water or energy, to the neighbouring communities. Attraction managers are asked if they offer a permanent discount off fare/entry for locals and if there is special needs access at the attraction. Employment of local residents, e.g. living within a ten km radius is another factor in this section.

The next part is whether or not the attraction initiated a plan to reduce running costs at the attraction e.g. energy, waste, water, purchases and if it contributes any of its profit or in kind contributions back into the community. Managers are asked if there are there any leakages out of the local economy created from their attractions for example, in the form of imports, such as food and beverages purchased that are not supplied by the local community. The final component to this section is to ask managers if the attraction contributes to the economic development of the local area. The next and final part is further strategic planning observation at the attractions.

6.3.9 Further strategic planning observation

This final section is titled as further strategic planning observation. This allows attraction managers to write in any plans they may have for the sustainable management of their attraction. This can be done once the checklist is completed, attraction managers will know what they have not done and what they may need to do in order to sustainably manage their attraction.

6.4 Concluding on the sustainable management at the attractions

The attractions assessed in the area of water management, were found to be quite insufficient with monitoring water use and costs. Huge cost savings can potentially be made if the volumes and costs are monitored and managed. The checklist has been

designed to ask managers if they have water meters in place and are monitoring and recording their water usage. The checklist will ensure the attraction managers are utilising this system which will contain policy numbers. Water metering systems can help managers identify how much water they use and at what cost.

In the area of energy management, the researcher has identified a number of large disparities in the area of energy management, with a lack of use of energy saving systems such as simply changing light bulbs to energy saving LED light bulbs. Attractions were found to have a great potential to reduce energy consumption and costs. It can be achieved through both investing in new technologies, and low cost options.

Waste and recycling management at the attractions was found that although a high number of attractions say they have waste management plans in place, none were aware of their waste use or costs. A high number of attractions do however recycle their materials, this is quite significant and reduces a great deal of waste disposed of to landfill. Again here there is great potential for attractions to reduce costs and waste use with the implementation of the checklist, it can aid in this process.

Attractions were found to be quite poor in the area of monitoring. Attraction managers do not appear to understand the importance of monitoring their carrying capacity and visitor impacts in order to avoid overcrowding and help preserve the surrounding environment.

The area of transportation management at the assessed attractions appears to be quite insignificant, which may result in increasing physical impacts to the natural environment at these attractions. Alternative fuel sources are not used for transport vehicles in use and a small number of attractions offer park and ride schemes, initiate carbon offsetting or offer information on local bicycle hire and walkways. Costs can be saved by changing to alternative fuel sources and impacts to the environment minimised by offering park and ride schemes and bicycles for hire.

Biodiversity planning is not very significant at the attractions especially in the area of avoiding the introduction of alien species. Alien species can cost a lot of money to eradicate once introduced and plans are very important to put in place in order to do so.

The surrounding environment at the attractions can also help to be preserved with planning, the checklist contains such measures on biodiversity planning.

Social/cultural sustainable management at the attractions was found to be quite significant. It is important to maintain community satisfaction and support local goods, services and employment, in order to contribute to local economic development.

In the area of economic sustainable management at the attractions, economic impacts and in particular cost saving are at the top of tourist attractions agendas and is imperative in this economic climate. An economic sustainable management section is implemented in the checklist for attraction managers. The checklist attempts to aid managers to monitor such areas as, local employment, leakages from the attraction, local purchasing and plans to reduce running costs at the attraction.

6.5 Further research

The next logical step is further research in this area, which would be to apply this tool to a number of key tourism attractions and modify it if needed. It would also be beneficial for further research to use the framework to identify the sustainability of tourism attractions in order to identify any future shifts in the actual sustainable management of tourism attractions. This longitudinal research may prove beneficial for planners and the national tourism development authority in policy provision and strategic vision for tourism attractions in Ireland.

6.6 Conclusion

This research has identified that currently tourism attractions in Ireland are not being sustainably managed in the areas of water, energy, waste/recycling, monitoring, transportation, biodiversity, social/cultural and economic sustainable management. If tourism is to stimulate the economy in Ireland and provide jobs for generations to come, then tourism attractions must be developed sustainably. Results found that cost savings are imperative for attractions in this economic climate. With effective sustainable management at attractions this is achievable through monitoring of energy use, water and waste volumes, and their costs. The implementation of energy saving systems, water and waste management systems and programmes can also attain cost savings, whilst helping to sustain the environment. The use of alternative transportation fuels at attractions,

biodiversity management plans and training on sustainable environmental practices can also accomplish cost savings. It is clear from the findings that attraction managers believe environmental action will save them money. It should be highlighted that all the attractions believe environmental action will save them money and would be willing to utilize a checklist to sustainably manage their attractions.

This research has conducted an in-depth analyses and review of contemporary literature on impacts of tourism at visitor attractions. It has also highlighted some of the principal theory's and research findings of the sustainable management of tourism attractions in Ireland. In order to facilitate the sustainable management of tourism attractions, the researcher has developed and presented a sustainable management checklist for tourism attractions in Ireland, which is GSTC compliant. The next logical step is further research in this area, which would be to apply this tool to a number of key tourism attractions and modify it if needed. It would also be beneficial for further research to use the framework to identify the sustainability of tourism attractions in order to identify any future shifts in the actual sustainable management of tourism attractions. This longitudinal research may prove beneficial for planners and the national tourism development authority in policy provision and strategic vision for tourism attractions in Ireland.

Appendix A – Visitor attraction managers questionnaire

The Sustainable Management of Tourist Attractions in Ireland

The purpose of this survey is to investigate the current sustainability of tourist attractions in Ireland, in an attempt to develop a framework to design a generic sustainable green print which could be implemented by managers of tourism attractions in Ireland. This could potentially benefit you by reducing running costs and converting your products to sustainable tourist attractions. To fill in the questionnaire will take approximately 15-20 minutes. Your questionnaire responses will be used as part of an Institute of Technology, Sligo, project, under the supervision of Dr. James Hanrahan. Data will be published in the form of a dissertation. If you have any queries please contact carolinegildea@gmail.com. Your assistance is greatly appreciated.

Section 1: Environmental Sustainable Management

1: Approximately how many visitors does the attraction receive annually?

2: On a scale of one to five, how do you rate the importance of protecting the environment at your attraction?
(Please circle one number).

Important ⟶ Not important

1 ------ 2 ------ 3 ----- 4 ------ 5

3: Do you know the potential environmental impacts your visitor attraction can have on the environment?

Yes	
No	
Don't Know	

4: Does the attraction operate under the principal of the triple bottom line of sustainability?

Yes	
No	
Don't Know	

5: **(a)** Do large visitor numbers cause problems for the management of the attraction, e.g. traffic congestion, visitor congestion, litter etc..?
(If so, please specify)

Yes	
No	
Don't Know	

(b) If yes, do these issues impact on the enjoyment of the visitor, or on the quality/conservation of the attraction?
(If so, please specify)

Yes	
No	
Don't Know	

(c) Are these issues seasonal?
(If so, please specify which season)

Yes	
(Spring)	
(Summer)	
(Autumn)	
(Winter)	
No	
Don't Know	

6: Has the attraction established any visitor management techniques, e.g. zoning, visitor dispersion?
(If so please specify briefly)

Yes	
No	
Don't Know	

7: Has there been an environmental impact assessment carried out on the attraction?

Yes	
No	
Don't Know	

8: Is the management of the attraction knowledgeable and updated on any of the following Irish tourism plans and industry legislation?

	Yes	No	Don't Know
Fáilte Irelands Review of Good Environmental Policy and Practice, 2007			
Fáilte Irelands Ecotourism Handbook for Ireland, 2009			
Fáilte Irelands five principals of sustainable tourism development, 2008			
Fáilte Irelands regional tourism development plans, 2008 - 2010			
Fáilte Ireland strategy statement, 2008 - 2010			
Local County Council Development Plan (tourism section)			
Water legislation Act, 2007			
Sustainable Energy Act, 2002			
Waste management legislation Acts,1996 - 2010			
Litter pollution Act, 1997			
Protection of the Environment Act, 2003			
The Irish wildlife Acts, 2000			
The EPA Biodiversity Plan, 2010			
The Flora Protection Order, 1999			
The Planning and Development Act, 2002			
Environmental Noise Regulations 2006			
Air quality legislation Acts, 2007			
Safety, Health and Welfare Act 1989			

9: **(a)** Do all personnel receive training regarding their role in sustainable environmental practices?

Yes	
No	
Don't Know	

(b) If not, would you like to receive training in this area?

Yes	
No	
Don't Know	

10: Are visitors provided with a code of conduct for visiting the attraction?

Yes	
No	
Don't Know	

11: **(a)** Have you established a carrying capacity of your attraction e.g. physical, ecological, social?

Yes	
No	
Don't Know	

(b) If yes, please specify the carrying capacity of your attraction under the three components?

Physical	
Ecological	
Social	

12: **(a)** Is the attraction operating under an Environmental Management System (EMS)?

Yes	
No	
Don't Know	

(b) If yes, which EMS does it operate under?

ISO14001	
EMAS	
Other(*Please specify)*	

13: Has the attraction introduced eco-taxes or eco charges?
g

Yes	
No	
Don't Know	

14: **(a)** Does the attraction have a purchasing policy that favours environmentally friendly products for building materials, capital goods, food, cleaning products and consumables?

Yes	
No	
Don't Know	

(b) If not, is the attraction actively seeking ways to reduce their use of dangerous chemicals in their products? (*Please specify briefly)*.

Yes	
No	
Don't Know	

WATER

15: Does the attraction have a water management plan?

Yes	
No	
Don't Know	

16: **(a)** Does the attraction have a water metering system in place?

Yes	
No	
Don't Know	

(b) If yes, what are the attractions volumes per annum?

water (M3/pa)	
Don't Know	

(c) What are the attractions water costs per annum?

cost/pa	
Don't Know	

17: Does the attraction have any of the following water saving systems or programmes?

	Yes	No	Don't Know
Rain Water Harvesting System			
Grey Water System			
Water saving information for customers/guests			
Active towel reuse programme (guest accommodation)			
Active linen reuse programme (guest accommodation)			
Self -closing taps (push tops)			
Spray taps			
Water flow restrictors for taps and showers			
Dual flush toilets			
Hippo bags			
Waterless urinals			
Urinals fitted with water conservation devices (automatic or manual flushing systems)			
Urinals turned off at night to reduce flows			
Leak detection process			

ENERGY

18: Does the attraction have an energy management plan in place?

Yes	
No	
Don't Know	

19: **(a)** Is there an energy sub-metering system in place?

Yes	
No	
Don't Know	

(b) If yes, what are the attractions measurements per annum?

Energy (kWh/pa)	
Don't Know	

(c) What are the attractions energy costs per annum?

Costs/pa	
Don't Know	

20: **(a)** Does the attraction have a BER (building energy rating) Certificate?

Yes	
No	
Don't Know	

(b) If yes, what is your energy rating?

21: Does the attraction, source their energy from any of the following sources?

(Please tick as many boxes that apply and specify the usage p/a of each energy source used, in the box provided)

	Yes	%
ESB		
ESB Independent Energy		
Airtricity		
Bord Gais Energy		
CH Power		
Energia		
Natural Gas		
LPG (Liquefied Petroleum Gas)		
Coal		
Oil		
Biodiesel		
Geothermal power		
Hydroelectric system		
Wind power		
Solar power		
Photovoltaic system		
Wood		
Wood pellet stoves		
Wood pellet boilers		
Other *(Please specify)*		

22: Is the building insulated including all windows, ducts and pipes containing hot air and water?

Yes	
No	
Don't Know	

23: Is there a list of the top 20 energy consuming equipment on site?

Yes	
No	
Don't Know	

24: Have you conducted a light audit?

Yes	
No	
Don't Know	

25: Has the attraction changed all Incandescent light bulbs to energy saving florescent/LED bulbs?

Yes	
No	
Don't Know	

26: Does the attraction use any of the following energy saving systems or programmes?

	Yes	No	Don't Know
Automatic lighting/sensors/timers			
Employees trained in energy management techniques			
Zoning system (where lights, heating and air-con can be controlled separately in different areas as required)			
Building Management System (an electronic pre-programmed system which controls everything (lights, heating, air conditioning) throughout the building)			
Energy efficient boiler			
Combined Heat and Power plant (CHP)			
Standby activation modes for computers/printers/copiers/scanners			
Plug-in timers for equipment such as printers, food and drink dispensers, water chillers, water-heating urns etc. so they cannot be left on overnight			
Air conditioning control system - where it is automatically turned off when windows are opened			
Information available to the customer/guest reminding them to close the window if the air conditioning is on?			
A heating control system where it is automatically turned off when windows are opened?			
Information available to the customer/guest reminding them to close the window if the heating is on			
Thermostats set in a suitable place, away from drafts and heat sources to give a representative temperature measurement, averaging 18°C - 21°C			
Radiators with thermostatic radiator valves (TRVs)			
When replacing or purchasing new equipment, do you purchase energy efficient A or A+ rated equipment (e.g., refrigerators, washing machines and office equipment)			

27: Does the attraction operate a 'facilities management' initiative whereby every piece of plant, plumbing and machinery at the attraction is regularly inspected to ensure optimum efficiency at all times?

Yes	
No	
Don't Know	

28: Does the attraction partake in carbon offsetting involving either planting trees, investing in or donating to companies/organisations that are developing renewable energy technologies?

Yes	
No	
Don't Know	

WASTE/RECYCLING

29: Is there a waste management plan in place?

Yes	
No	
Don't Know	

30: **(a)** Is waste consumption measured?

Yes	
No	
Don't Know	

(b) If so, what are the attractions measurements per annum?

Waste(Kg/tonnes/pa)	
Don't Know	

31: **(a)** Are waste costs measured?

Yes	
No	
Don't Know	

(b) If so what are the attractions costs per annum?

Cost/pa	
Don't Know	

32: Does the attraction undertake any of the following waste management actions?

	Yes	No	Don't Know
Separate and manage recyclable waste			
Separate and manage hazardous waste			
Separate and manage landfill/residual waste			
The use of waste management equipment, e.g. balers, shredders, composters, etc...			
Avoid the use of one use/single portion packaging for food items			
Avoid the use of one use/single portion toiletries, by using refillable dispensers			
Recycle used furniture/textiles/materials			
Use a plumbed-in mains water filter, rather than a replaceable drum water cooler			
Undertake responsible marketing (e.g. e-marketing, 100% environmentally friendly marketing materials; recycled paper, printing on both sides, environmentally friendly ink, etc.			
Code of practice with your suppliers, where they take back their packaging			
Refuse to accept pallets, bubble wrap, shrink wrap, polystyrene etc, from your suppliers			

33: Is the attraction a member of any recycling scheme, e.g. Repak?
(If so please specify.)

Yes	
No	
Don't Know	

34: **(a)** Does the attraction document the percentage of recyclables diverted from landfill?

Yes	
No	
Don't Know	

(b) If yes, please input the % in the box provided

	%

MONITORING

35: Does the attraction monitor any of the following?

	Yes	No	Don't Know
Visitor impacts of the attraction			
Visitor satisfaction			
Carrying capacity			

36: Does the attraction have a preventative maintenance programme? **(**Maintenance conducted to keep equipment working and/or extend the life of the equipment).

Yes	
No	
Don't Know	

TRANSPORTATION

37: Does the attraction source their transportation fuel from any alternative energy sources?

Yes	
No	
Don't Know	

38: If yes, which of the following alternative sources does the attraction use?

Biomass power	
-Biogas	
-Bioethanol	
-Biodiesel	
Hydroelectric system	
Wind power	
Other*(Please specify)*	

39: Does the attraction do any of the following?

	Yes	No	Don't Know
Offer park and ride schemes			
Offer bicycles for hire			
Offer information on local bicycle hire			
Offer details on local cycle ways			
Encourage the use of public transport to the attraction			
Offer details of local paths			
Have traffic control systems for the visitors			

40: Does the attraction offer carbon offsetting options to their customers to offset the impact of their travel to the attraction?

Yes	
No	
Don't Know	

BIODIVERSITY/WILDLIFE

41: Does the attraction have a biodiversity management plan in place?

Yes	
No	
Don't Know	

42: Does the operation of the attraction involve minimal disturbance to ecological systems?

Yes	
No	
Don't Know	

43: If any ecological areas are disturbed, is there a rehabilitation programme in place to restore these systems?

Yes	
No	
Don't Know	

44: Is educational material provided to visitors concerning the different types of flora and fauna at the attraction and how they contribute to the area?

Yes	
No	
Don't Know	

45: Are visitors made aware of the impacts of interacting and disturbing the flora and fauna at the attraction?

Yes	
No	
Don't Know	

46: Does the attraction have any of the following?

	Yes	No	Don't Know
Eco trails used to view the flora and fauna			
Wildlife held at the attraction			
A nesting habitat			
A sanctuary area			
Road signage available en route to and from the attraction in areas where there are wildlife, to warn drivers of animals crossing			

47: Does the attraction take measures to avoid the introduction of invasive alien species? (*If so please specify briefly*)

Yes	
No	
Don't Know	
Not Known to be an issue	

_____

_____

48: Does the attraction contribute/donate to the support of biodiversity conservation? *(If so, please specify briefly)*.

Yes	
No	
Don't Know	

_____

_____

Section Two: Social – Cultural and Economic Sustainable Management

49: Does the attraction use elements of local art, architecture, or cultural heritage at the premises?

Yes	
No	
Don't Know	

50: Does the attraction actively support initiatives for social and infrastructure community development including, among others, education, and corporate social responsibility? *(If so, please specify briefly)*.

Yes	
No	
Don't Know	

_____

51: Does the attraction partake in consultation and participation techniques with the local community, e.g. the construction of new facilities?

Yes	
No	
Don't Know	

52: Is local food purchased by the attraction, where available?

Yes	
No	
Don't Know	

53: Are local services purchased, where available?

Yes	
No	
Don't Know	

54: Does the attraction purchase fair trade goods?

Yes	
No	
Don't Know	

55: Do the activities of the attraction jeopardize the provision of basic services, such as water or energy, to the neighbouring communities?

Yes	
No	
Don't Know	

56: Does the attraction offer a permanent discount off fare/entry for locals?

Yes	
No	
Don't Know	

57: Is there access for special needs at the attraction?

Yes	
No	
Don't Know	

58: How many people does this business employ, including the owner/manager? (Please include any owners/partners or family members working in the business whether paid or unpaid).

Full Time	
At peak season At low season	
Part Time	
At peak season At low season	

59: Do you employ local residents, e.g. living within a 10-km radius?

Yes	
No	
Don't Know	

60: Has the attraction initiated a plan to reduce running costs of the attraction **e.**g. energy, waste, water, purchases, etc...?
(If so, please specify briefly)

Yes	
No	
Don't Know	

_____

61: Does the attraction contribute any of its profit or in kind contributions back into the community? (*If so, please specify briefly)*.

Yes	
No	
Don't Know	

_____

62: Are there any leakages out of the local economy created from your attraction? E.g. in the form of imports, such as food and beverages purchased that not supplied by the local community. (*If so, please specify briefly.)*

Yes	
No	
Don't Know	

_____

_____

63: Has the attraction introduced price elasticity in relation to income elasticity due to the economic downturn?
(*If so please specify briefly)*.

Yes	
No	
Don't Know	

64: Has the attraction contributed to the economic development of the local area. (*If so please specify briefly*).

Yes	
No	
Don't Know	

65: Do you think environmental action will save the attraction money?

Yes	
No	
Don't Know	

66: Would you be willing to utilize a sustainable management green print in order to sustainably manage the attraction?

Yes	
No	
Don't Know	

Thank you for taking the time to complete this questionnaire.

Appendix B Table of two hundred tourist attractions selected for research

Name of Attraction
Guinness Store House
Dublin Zoo
Cliffs of Moher
National Gallery of Ireland
National Aquatic Centre
National Botanic Gardens
Book of Kells
Irish Museum of Modern Art
National Museum of Ireland - Archaeology (NMI)
Dublin Castle
Blarney Castle
St Patrick's Cathedral
Fota Wildlife Park
Bunratty Castle & Folk Park
Kilmainham Gaol
National Museum of Ireland - Decorative Arts & History (NMI)
Waterford Crystal Visitor Centre
Holy Cross Abbey
Kilkenny Castle
Old Jameson Distillery
Rock of Cashel
Bru Na Boinne Visitor Centre (newgrange)
Powerscourt House & Gardens
Chester Beatty Library
Dublin City Gallery The Hugh Lane

Farmleigh
Kylemore Abbey & Garden
Christ Church Catherdral
Atlantic Edge (Cliffs of Moher)
Belvedere House Gardens and Park
Clonmacnoise
Aillwee Cave
Aquadome
Dublinia & Viking World
The National Library of Ireland
Irish National Stud & Japanese Gardens
Newgrange (Bru na Boinne visitors centre)
Nicholas Mosse Pottery
Dún Aonghasa
National Museum of Ireland - Country Life
The Jameson Experience Midleton
Skerries Mills
Galway Atlantaquaria, National Aquarium of Ireland
Cobh -The Queenstown Story
Glendalough Visitor Centre
Dingle Oceanworld
Airfield
Leisureland
Crag Cave
Cork City Gaol
Leenane Cultural Centre
The GAA Museum & Croke Park Stadium Tour
Ionad Cois Locha
Charles Fort
J F Kennedy Arboretum
Gougane Barra Forest Park
Trim Castle
Avondale House & Forest Park
Brú Ború
Garinish Island
Knowth (Bru na Boinne - Newgrange)
Altamont Gardens
Cahir Castle
Lough Key Forest Park
Phoenix Park Visitor Centre
Glór - Irish Music Centre
Irish National Heritage Park
King John's Castle
Battle of the Boyne
Blackrock Castle Observatory
Donegal Castle
Blasket Centre
Trabolagan Holiday Village
Russborough
Cashel Heritage Centre

Birr Castle Demesne and Ireland's Historic Science Centre
Number Twenty-Nine - Georgian House Museum
West Cork Model Railway Village
Wicklow Gaol
Siamsa Tire Theatre & Arts Centre
Locke's Distillery Museum
Irish Agricultural Museum
St Johns Arts Centre and Theatre
Dunmore Cave
Duncannon Fort
St. Canice's Cathedral
National Photographic Archive
Wexford Wildfowl Reserve
Céide Fields
Hook Lighthouse
Voya Seaweed Baths
Craggaunowen - The Living Past
Aughnanure Castle
The Skellig Experience
Ross Castle
Carrowmore Megalithic Cemetry
Limerick City Gallery of Art
Leahy's Open Farm
Parsons Green Park and Pet Farm
St Fin Barre's Cathedral
Lismore Heritage Centre
Jerpoint Abbey
Foynes Flying Boat Museum
Slieve League Cultural Centre
Waterford and Suir Valley Railway
The Burren Smokehouse Ltd
Glebe House & Gallery
Blennerville Windmill
Dalkey Castle & Heritage Centre
The Hunt Museum
St Audeons Church
Glendeer Pet Farm
Dunbrody Abbey and Visitor Centre
Lough Derg Place of Pilgrimage
UCC Visitors' Centre
Swiss Cottage
Mellifont Abbey
Brigit's Garden
Derrynane House and Gardens
Castlecomer Discovery Park
Dunguaire Castle (Bunratty number - shannon heritage)
Lismore Castle Gardens
Portumna Castle
Parke's Castle

Lifetime Lab
Tullamore Dew Heritage Centre
Castletown House
Sligo Crystal & Giftware
Geokaun Montain & Fogher Cliffs
Limerick City Museum
King House
Desmond Castle
Hill of Tara
Cork Butter Museum
Sligo Abbey
Athenry Castle
Shandon Tower & Bells
Reginalds Tower
Waterford Treasures
Skibbereen Heritage Centre
Athlone Castle & Visitor Centre
Ennis Friary
James Joyce Cultural Centre
Skellig Michael
Monaghan County Museum
South Tipperary County Museum
Tullyboy Farm Visitor Centre
An Mhuc Dubh Fintown Historic Railway
Mullingar Pewter
Rathbaun Farm
Oideas Gael
Dolphin Watch Carrigaholt
Kildare Town Visitor Centre
Barryscourt Castle
Edmond Rice International Heritage Centre
Loughcrew Gardens
Waterwheels
The Organic Centre
Maynooth Castle
Boyle Abbey
Emo Court House & Gardens
Roscrea Castle & Damer House
Tintern Abbey
Dungarvan Castle
Nore Valley Park Open Farm
Donegal County Museum
Rathfarnham Castle
Michael Cusack Centre
Casino Marino
Knappogue Castle
Ardfert Cathedral
Ardgillan Castle
Larchill Arcadian Gardens
Áras an Uachtaráin

Bealick Mill Museum
Patrick Pearse's Cottage
Mainguard
Corlea Trackway Visitor Centre
Colmcille Heritage Centre
The Steam Museum, Straffan
Nenagh Heritage Centre
Cobh Museum
Bamboo Park
Kilmokea Gardens
Ferns Castle
Boyce Gardens
Vandeleur Walled Gardens
Adare Castle
Newmills Corn and Flax Mill
Kilfane Glen and Waterfall
Ormonde Castle
Oakfield Park
Tullynally Castle & Gardens
Clones Lace Gallery
Freemasons' Hall Museum
Bonane Heritage Park
Patrick Kavanagh Rural & Literary Resource Centre
Geological Museum
St Mary's Church

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