

Environmental Management Concepts and Practices for the Hospitality Industry

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By

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To my mum Cecilia Cudjoe

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PREFACE

The world is increasingly confronted with a number of environmental issues ranging from depletion of non-renewable resources to climate change and this has led to calls for climate change mitigation measures, reduction of environmental impacts of industries and ultimately, sustainable development. The hospitality industry depends on environmental resources including water and energy. However, the industry also has the potential to destroy the very resources on which it depends. It is therefore imperative for the industry to embark on environmental management practices geared towards safeguarding the ‘goose that lays the golden egg’. Students of hospitality and tourism management, who are the future of the industry as well as practicing hospitality managers need to be educated on environmental management and sustainability issues. A look at the syllabuses of most tourism, hotel and hospitality training institutions around the world suggests that almost all these institutions have mounted courses in environmental management. The need for a comprehensive textbook on both the theory and practices of environmental management for the hospitality industry has become even more imperative.

This book has been designed to help both undergraduate and postgraduate students and industry practitioners to comprehend the environmental issues confronting the hospitality industry, gain knowledge on the best practices in environmental management in hospitality industry and for them to be able to formulate and implement successful environmental policies and programmes.

This eight-chapter textbook covers all the topical issues relating to environmental management in the hospitality industry. The first chapter provides an introduction to environmental management in the hospitality industry. This is followed by an examination of the causes and effects of some global environmental problems in Chapter two. Chapter three assesses the environmental impacts of the hospitality industry while Chapter four highlights the drivers of environmental management in the hospitality industry. Chapter five outlines the steps to be followed in the environmental management process. The last three chapters address specific environmental management practices which are germane to the

hospitality industry namely waste management, water conservation and energy conservation.

This book also highlights of case studies on successful environmental initiatives by hospitality establishments all over the world, keywords and concepts of each chapter and a set of questions for self-assessment on each chapter. This book is a useful resource for both industry and academia.

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AUTHOR BIOGRAPHY

Prof. Ishmael Mensah is an Associate Professor of tourism and hospitality management at the University of Cape Coast and Ghana Director of the Confucius Institute at University of Cape Coast. He holds a Ph.D. Tourism degree from the same university and is a Certified Hospitality Educator (CHE) by the American Hotel and Lodging Association as well as a Member of the Institute of Hospitality (MIH). Prof. Mensah also holds post-graduate certificates in Hospitality Administration as well as Event Planning & Tradeshow Management from Georgia State University where he was a fellow under the Ghana Tourism Capacity Development Initiative. He has published widely in high-ranking academic journals including the International Journal of Hospitality Management, Journal of Sustainable Tourism and the International Journal of Tourism Research. Prof. Mensah also has two published books and three book chapters. His research interest includes environmental management and service quality. He has also presented papers at several international conferences both at home and abroad. He is currently the Editor-in-Chief of the African Journal of Hospitality and Tourism Management and has served as ad-hoc reviewer for several international journals.

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CHAPTER ONE

INTRODUCTION TO ENVIRONMENTAL MANAGEMENT IN THE HOSPITALITY INDUSTRY

Learning Objectives

By the end of this lesson, readers should be able to:

1. Define the terms ‘environment’ and ‘environmental management’.
2. Outline the components of the environment.
3. Identify and explain five environmental resources for the hospitality industry.
4. Explain the relationship between the tourism and hospitality industry on one hand and the environment, on the other.
5. Explain the concept of sustainable tourism development.
6. Distinguish between voluntary and mandatory environmental management.

Introduction

It is an undeniable fact that issues relating to the environment have become critical issues globally. Environmental issues have been under the spotlight of most international conventions organised by the UN. The fact remains that there are numerous environmental problems confronting the globe including global warming and resource depletion. However, most of the environmental problems are anthropogenic; they are caused by humans through socio-economic activities. Therefore, arresting these environmental problems calls for changing the way individuals,

households and industries operate. The tourism industry which hospitality forms an integral part, is undeniably one of the industries that depend hugely on the environment. Ironically, the tourism and hospitality industry also contributes to the degradation of the environment, including the depletion of natural resources. The industry contributes to the depletion of natural resources such as water, energy and forests, while at the same time generates wastes and pollutes the environment. In order not for the industry to 'kill the goose that lays the golden egg', there is the need for hospitality businesses to institute Environmental Management Systems (EMS) to minimize their adverse impacts on the environment. The industry has a moral responsibility to safeguard the environment by reducing its ecological footprints. However, environmental management does not only help to safeguard natural resources but enables hospitality businesses to reduce costs and improve their bottom-line. This calls for sustainable tourism development. Sustainable tourism development refers to the development of tourism without compromising the ability of future generations to meet their own needs. In response to calls for environmental management and sustainable tourism development, a number of international organizations and hospitality firms have been undertaking various environmental management initiatives.

Zhao and Merna (1992) are of the opinion that environmental management has become an integral part of the operations of most hospitality establishments because the effective management of environmental complexities has become one of the issues on the corporate strategic planning agenda and may well become a key measure of corporate success. Historically, environmental management in the hospitality industry was spearheaded by international associations (Chan & Lam, 2001). It began with the launching of the International Hotels Environment Initiative (IHEI) in 1993 by the Prince of Wales of England. This involved 11 international hotel chains accepting a manual, spelling out a comprehensive campaign to advance environmental performance in the hotel industry. In 1994, 16 hotel groups in the Asia Pacific Rim also formed the first Regional Chapter- the Asia Pacific Hotels Environment Initiative [APHEI] (Chan & Lam, 2001). In the same year, the Hotel and Catering Institute Management Association [HCIMA] participated in Green Globe, an environmental management awareness program initiated by the World Travel and Tourism Council [WTTC] (Anon, 1994). In 1997, the Caribbean Alliance for Sustainable Tourism (CAST) was also born to undertake collaborative environmental management activities and initiatives within the hotel and tourism sector.

Since then, various hotels have undertaken different degrees of environmental management programmes to safeguard the environment. These include Hilton's 'Environmental Reporting', Accor's 'Earth Guest Programme', 'Green Marriott' and the Rezidor Group's 'Responsible Business' (El Dief & Font, 2010). In Hong Kong alone, a survey conducted in 1992 found that about 30% of hotels had launched environmental programmes with different degrees of success (Barlett, 1992). In a related study, Graci and Dodds (2009) found that many of Toronto's hotels were undertaking environmental initiatives to some degree. Environmental management practices in the hospitality industry include environmental policy formulation, green purchasing, compliance with environmental laws and regulations, Environmental Management Systems (EMS), environmental auditing, eco-labelling and certification, waste management and recycling, conservation and environmental sponsorship, environmental education and communication, environmental health and pollution prevention, environmentally responsible marketing and support for local communities. However, the most popular environmental management practices in the hospitality industry are those geared towards cost savings: waste management, recycling, energy and water conservation (Mensah, 2007).

What is the environment?

The word 'environment' originates from the French word *environner* which means to encircle or surround. The word 'environment' has been used in different sense, including 'business environment', 'economic environment' and 'work environment' to describe the issues and circumstances surrounding those phenomena. According to Colby (1989), the environment is the complex of biotic, climatic, soil and other conditions which comprise the immediate habitat of an organism; the physical, chemical and biological surroundings of an organism at any time. Simply put, the environment refers to the circumstances or socio-cultural conditions that surround an organism, individual, group, organization or community. It is the total surroundings of an organism which sustains it, including flora, fauna, landforms, atmosphere and water bodies as well as physical, chemical, aesthetic and cultural properties and conditions.

In the context of this book, *environment* will be used to mean the *biophysical environment* in which hospitality businesses operate which comprises both the natural environment and the built environment. The natural environment refers to natural endowments which were not created

by humans such as water, air and animals while the built environment refers to what has been created by humans within the natural environment such as hotels, bridges and sports stadia. In effect, the environment of the hospitality industry is defined as the surroundings in which hospitality facilities operate, including air, water, land, flora, fauna, humans, man-made facilities and their interrelationships.

Components of the Environment

Since the environment refers to our total surroundings, components of the environment are the living and non-living things that surround us including air, water, minerals, soil, and living organisms. Components of the environment can be grouped broadly into two namely, biotic (living) and abiotic (non-living).

Biotic components

These are all the living components of the environment such as plants, animals and micro-organisms. They also include how living organisms interact and affect each other. They are commonly referred to as the food chain and consist of:

Producers: These are organisms that make their own food from light energy or chemical energy. Most green plants that are one-celled organisms, are producers. Producers constitute the base of the food chain. E.g. fruit trees, bamboo, vines, shrubs, ferns, epiphyte and orchids.

Primary consumers: These are living things that depend on other living things for survival. They cannot make their own food but rely on producers as sources of their food. They include monkeys, bats, bees, wasps and birds.

Secondary consumers: These are predators which use weapons like force, poisons and traps to kill their prey for food. Examples are spiders, scorpions, snakes and lions.

Decomposers: They team up and work together to decompose plant matter by consuming them. For example, termites decompose logs by eating them and by so doing reduce litter. Some other decomposers are earth worms, fungi, bacteria, protozoan and parasites.

Abiotic components

These are the non-living components of the environment. Abiotic components are especially important because they directly affect how organisms including humans survive. Abiotic components like water, sunlight, rain, wind, temperature and soil, are essential to the survival of organisms. Generally, abiotic components of the environment as shown in Figure 1.1 are made up of the following:

Atmosphere: The thin layer of gases that surrounds the earth. It consists of a complex mixture of gases such as nitrogen, oxygen, carbon dioxide and ozone as well as water vapour and particulate materials.

Hydrosphere: This is the body of water on the earth's surface. It covers about 71% of the earth's surface and includes oceans, seas, lakes, ponds, rivers and streams.

Lithosphere: The earth's crust is the outermost solid land surface of the planet. This crust is composed of minerals. It covers the entire surface of the earth from the top of Mount Everest to the bottom of the Mariana Trench.

Biosphere: This is part of the earth's surface and atmosphere containing the ecosystem including air, land, surface rocks and water where there are living things ranging from bacterium to mammals.

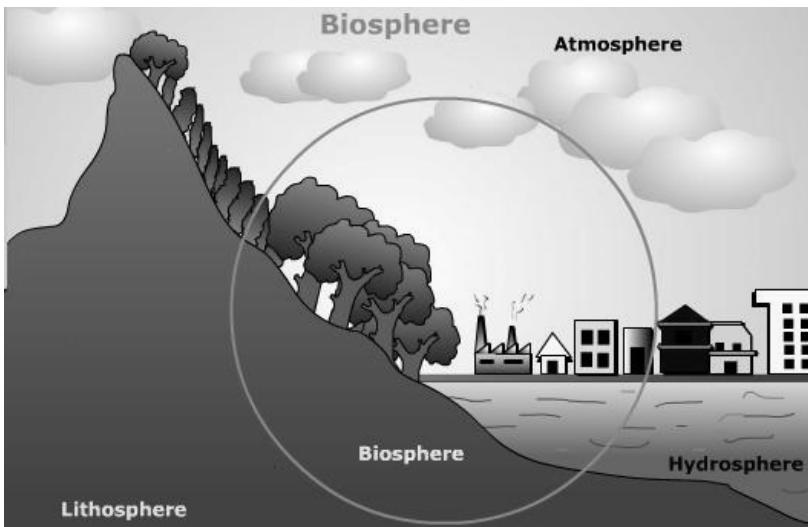


Figure 1.1: Abiotic components of the environment

Environmental Resources for the Hospitality Industry

One major importance of the environment to the hospitality industry is the resources it provides to the industry. Brian Goodall (1987) defined a resource as “something material or abstract that can be used to satisfy some human want or deficiency”. Thus, a resource is anything which humans attach value to, due to its usefulness and ability to satisfy their needs or address their problems.

What this means is that what is considered a resource can change over time: for instance, it was not until the late 19th century that oil became a resource. A natural endowment cannot be considered as a resource until people have found a use for it. According to Zimmerman (1972), an element in nature is a *neutral stuff* until it is found to be valuable and the technical skills to extract it from nature is developed. Also, what may be considered a resource by one community or society may not be a resource to another community. For instance, in Ghana, though Bamboo is a resource, its Shoot is not a resource though it is a delicacy, especially in some Asian countries.

An environmental resource is any material, service, or information from the environment that is valuable to society. It is anything within the

environment which is useful to humans. Environmental resources for the hospitality industry include water, energy, food, climate, forests, minerals and culture.

Water resources: Water is a very essential resource which covers about 71% of the earth's surface. All living organisms need water in order to survive. Ironically, only 3% of the world's stock of water is freshwater out of which only 0.003% is readily available for use. This available freshwater is maintained through the hydrological cycle (Figure 1.2). Water is used in the hospitality industry for different purposes ranging from construction to the operation of hospitality facilities (this will be explained in greater detail in Chapter 7). The International Hotels Environment Initiative estimates that hotel water consumption ranges from 60 cubic metres to 120 cubic metres per bedroom per year.

The hydrologic cycle

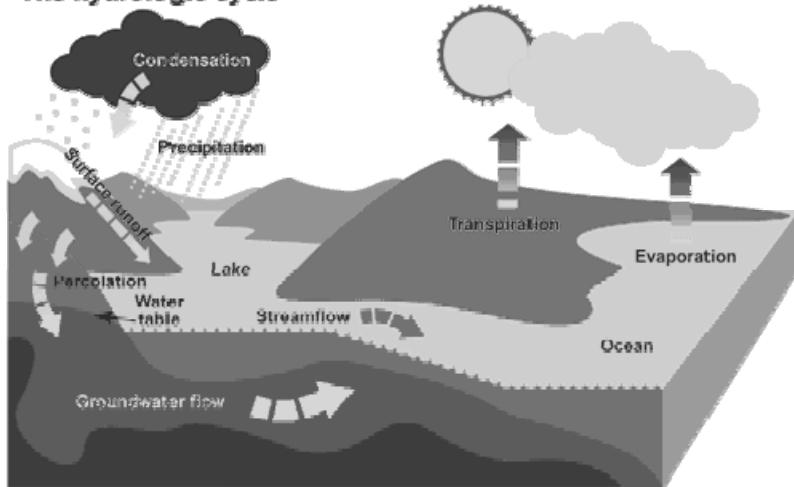


Figure 1.2: The Hydrological Cycle

Climatic resources: Climate encompasses the average weather conditions pertaining to a place over a long period of time. The characteristics of climate include temperature, wind, cloud, precipitation, humidity and sunshine. Different climatic conditions are essential for the sustenance of different plants and animal species.

Climate significantly affects the hospitality industry both positively and adversely. It is a major tourist attraction which facilitates tourist activities such as sunbathing, surfing, hiking and canoeing. Also, sunny clear weather conditions are appropriate for outdoor recreational activities which explain why Mediterranean and tropical beaches such as Costa Brava in Spain, Cote d'azur in France, Copacabana Beach in Brazil, Montego Bay in Jamaica and Cancun in Mexico attract a lot of tourists. On the other hand, extreme weather conditions such as floods, hurricanes, typhoons, snowstorms and cyclones tend to destroy hospitality facilities.

Energy resources: Energy is the capacity to do work and transfer heat. It is energy that gets work done and sets the wheels of industries in motion. It is therefore a vital resource for the hospitality industry (refer to Chapter 8). It comes in different forms, including light, heat and electricity as well as chemical energy from coal and other materials, mechanical energy from flowing water or wind and nuclear energy. Energy can either be *renewable* or *non-renewable*. Non-renewable energy refers to energy resources which are fixed in supply in the earth's crust and can therefore be depleted. They include oil, natural gas, uranium and coal. *Renewable energy* resources on the other hand, can be replenished or renewed through geological processes such as the sun (solar), wind, flowing water (hydro), biomass and hydrogen. At present, non-renewable energy (fossil fuels) is the main source of energy to humans. Fossil fuels account for 79% of global final energy consumption and this is a cause for concern since they are being depleted at great pace.

Mineral resources: A mineral resource is a concentration of naturally occurring solid, liquid or gaseous material, in or on the earth's crust that can be extracted and converted into useful materials which could be sold at affordable prices. They include *metallic mineral resources* like iron and aluminium and *non-metallic mineral resources* like salt, oil, sand and water. The extraction of mineral resources often has destructive effects on the environment. Mineral resources are also important to human wellbeing and socio-economic development; from the use of salt and water for domestic purposes to the use of iron for construction and manufacturing. The hospitality industry also profits from mineral resources. Facilities like hotel buildings are constructed with mineral resources like iron, rocks, sand, aluminium and copper. A

number of fittings and utensils are also made from metallic mineral resources.

Forest resources: Forests are not only a collection of trees but a complex ecosystem that also support a variety of life forms referred to as biodiversity. There are three main types of biodiversity, namely *genetic diversity*, *species diversity* and *ecological diversity*. *Genetic diversity* refers to the variety of genetic makeup among individuals within a single species such as different genotypes of butterflies. *Species diversity* is the variety of species found in different habitats of the planet while *Ecological diversity* refers to the variety of ecological systems such as forests, wetlands, deserts, lagoons and lakes. Forests make up about 26.6% of the earth's total land surface. Most of the materials used for domestic and industrial purposes are obtained from forests. These include timber, food and medicinal plants. Forests also regulate and maintain essential ecological processes, provide watershed protection, prevent soil erosion, influence climatic conditions through transpiration and mitigate global warming by serving as carbon sinks.

The hospitality industry depends heavily on forest resources such as wood, bamboo and other building materials as well as food such as fruits, spices, honey, tubers and mushrooms.

Food resources: Food is any substance which is consumed to provide nutritional support for an organism. Food contains essential nutrients, including carbohydrates, fats, proteins, vitamins and minerals. Food could be obtained from crops such as potatoes, rice, wheat and maize; animals such as cattle, poultry and pigs which provide milk, meat and eggs; and fish which is a major source of animal protein. Foodservice is an important segment of the hospitality industry. Food is served in all hospitality facilities including hotels, resorts and restaurants. Because the industry cannot survive food scarcity, issues of food security have become very important to industry practitioners and policy makers.

Cultural resources: Culture is the total way of life, norms and values of a people including their religion, food, clothing, language, education, customs, behaviour, and expression in performing arts (music, dance, drama) as well as their political and social organisations. It also represents the creations of humans as well as their

modifications to nature. *Material culture* refers to the physical or technological aspects of the daily lives of people, including food items, houses, factories, archaeological sites, dress and tools. *Nonmaterial culture* refers to ways of using material objects as well as customs, beliefs, philosophies, governments, traditions, religion and language. It is the culture of a people that give destinations their unique character. Festivals and sporting events, historic buildings like forts and castles and theme parks are important cultural attractions that enhance hospitality operations. For instance, during cultural events like festivals, the hospitality industry profits from accommodating and feeding attendees.

Relationship between Tourism/Hospitality and the Environment

Throughout the history of tourism, the environment of places, including scenic sites, amenable climates, unique landscapes, lush vegetation, pristine and coconut-fringed beaches have been the main tourist attractions. Ancient travellers were attracted to new lands to discover beautiful places, experience natural attractions and obtain curios. Cook et al. (1992) sum this up by indicating that ‘the environment is the travel industry’s base product’. The raw material of the paper industry is wood but that of the tourism industry is the environment. Thus, tourism activities are influenced by the environmental resources of a destination.

Tourism on the other hand provides the motivation and resources for conservation. Already, a number of global hospitality brands including NOVOTEL, Ramada and McDonalds are actively supporting conservation activities around the globe.

Tourism as a human activity requires the use of resources and interaction with the environment. The hospitality industry requires natural resources in order to meet the needs of tourists and other guests. Thus, environmental resources have always been the focus of tourism. Environmental resources such as forests, water bodies and archaeological sites serve as tourist attractions. Moreover, environmental resources such as minerals, energy, water and wood are used by the hospitality industry for the production of goods and services for tourists’ consumption.

In spite of the importance of tourism to the environment, tourism development and tourist activities as well as the operation of hospitality facilities could impact negatively on the environment. It is against this background that Plog (1973) notes that ‘tourism contains the seeds of its

own destruction'. The negative impacts of the tourism and hospitality industry on the environment include depletion of natural resources, pollution and destruction of ecosystems (this will be further discussed in Chapter 3).

Symbiotic relationship between tourism and the environment: The term, 'Symbiosis' comes from two Greek words 'syn' and 'bios' which mean "with" and "living." It describes a close relationship between two organisms from different species. Thus, the word 'symbiosis' refers to a cooperative relationship between two parties such as the relationship between a master and a servant. In the same vein, there could be a symbiotic relationship between tourism and environment. This is where tourism and conservation enjoy a mutually supportive relationship. In this situation, each benefits the other. A symbiotic relationship between tourism and the environment occurs if tourism and conservation are organized in such a way that both derive benefits from the relationship. The environment supplies clean and attractive environment for tourism development and tourism in turn provides the resources and opportunities for conservation. From the perspective of the conservationist, environmental features and conditions are left as close as possible to their original state but, at the same time, they serve as tourist attractions. This is the ideal situation but hard to achieve. There are few places where this has been achieved. Sustainable tourism development represents a good model for achieving harmony between tourism and the environment.

Sustainable Tourism Development

Growing concerns over the negative effects of human activities on the environment led to calls for a new approach to development. This led to the UN commissioning the World Commission on Environment and Development (WCED) also known as the Brundtland Commission to look into the interlocking issues of development and the environment. The Brundtland Commission submitted a report in 1987 entitled *our common future* in which the concept of sustainable development was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Brundtland, 1987). The concept of sustainable development requires a change of mindset to bring about the full integration of the needs for economic and social development with that of conservation of the environment.

The sustainability concept has gained acceptance by all industries including tourism. Sustainable tourism has gained prominence due to the

fact that conventional forms of tourism have some negative effects on the environment and host communities. Sustainability, as applied to the tourism industry, means regulating the use of tourist resources so that they are not consumed, depleted or polluted in such a way as to be unavailable for use by future generations of tourists (Burton, 1995). Tourism resources should be used wisely to guarantee their availability for the use of both present and future generations of tourists and hosts. Perhaps, a more comprehensive definition of sustainable tourism development is provided by Middleton and Hawkins (1998: ix); according to them, ‘sustainable tourism means achieving a particular combination of numbers and types of visitors, the cumulative effect of those activities at a given destination, together with the activities of the servicing business can continue into the foreseeable future without damaging the qualities of the environment on which the activities are based’. Sustainable tourism describes policies, practices and programmes that take into account not only the expectations of tourists about responsible natural resource management but also the needs of communities that support or are affected by tourist projects and the environment.

What is environmental management?

In view of the importance of the environment to the tourism and hospitality industry coupled with the environmental challenges that currently confront the globe, it has become imperative for hospitality businesses to undertake environmental management. However, environmental management has been defined variously. According to Kessler et al. (2001), ‘environmental management is a process in which (formal and informal, public and private) organizations apply mechanisms to develop and implement a set of cost-effective priority actions on the basis of well-articulated societal preferences and goals for the maintenance or improvement of ambient environmental quality; the provision of environmentally derived or related services; and/or the conservation, maintenance and enhancement of natural resources and ecosystems.’

The Environmental Protection Agency (EPA) of Ghana on the other hand defines environmental management as ‘the process by which the collection of policies, structures, resources, systems and processes are brought to mutual interplay for the achievement of clearly defined environmental policy directives’ (EPA Newsletter, 1997).

These definitions bring out the fact that environmental management employs a systematic approach for protecting the environment and

minimizing the impacts of an organization on the environment. Managers pursuing environmental management adopt practical approaches to conserving vital environmental resources such as water and energy as well as reducing the negative environmental impacts of their operations.

Due to the systematic nature of environmental management, it usually follows a series of procedures including environmental policy formulation, planning, organizing and coordination of activities, resource allocation as well as control and evaluation. This is commonly referred to as Environmental Management System (EMS) which would be discussed in detail in Chapter 5.

Types of Environmental Management

Environmental management could be voluntary or mandatory. Traditionally, environmental management has been mandatory with governments instituting and enforcing laws and other regulations. This has been the traditional role of Environmental Protection Agencies of most countries. However, most organizations are increasingly embarking on various voluntary environmental initiatives.

Voluntary environmental management involves environmental management initiatives which are not legally required or obligatory. Managers of hospitality businesses undertake such initiatives or apply to join such programmes out of their own volition. These also include *eco-labelling* and *certification*. Eco-labels refer to the certification of a particular level of environmental performance in the production of a tradable product or service (Buckley, 1992), whilst certification is the process by which a third party gives written assurance to the consumer that a product, process, service or management system conforms to specified requirements (Toth, 2000). The tourism and hospitality industry appears to have embraced eco-labelling and certification as there are over 100 eco-labels in the industry worldwide (Yunis, 2002). These include Blue Flag. Eco-labels operating in the tourism and hospitality industry Ecohotel, EcoMeet, Ecotel, Green Key, Green Leaf, Green seal, Green Globe 21 and Green Deal. Apart from helping to mitigate the environmental impacts of hospitality businesses, eco-labelling and certification also help such organizations to project a green image and inform customers about their environmental commitment. According to Font and Bendell (2002), 68% of the eco-labels are awarded to the accommodation sector. In 1999 and 2000

alone, over two thousand hotels, campsites, hostels and restaurants in Europe were certified and awarded eco-labels (Hamele, 2004).

Mandatory environmental management is when environmental management is undertaken by hospitality businesses in response to environmental laws and regulations such as the UK Clean Air Act (1993), the Toxic Substances Control Act of the USA (1976) and the EPA Act (Act 490) of Ghana (1996). The laws of a country where a resort is located may require management to undertake certain activities such as environmental impact assessment, environmental auditing and waste management. Most countries have Environmental Protection Agencies which have the authority to enforce compliance. Such laws are also occasioned by the ratification of international agreements and protocols on the environment such as the United Nations Framework Convention on Climate Change (Kyoto Protocol), which enjoins countries to institute laws and regulations to help reduce greenhouse gases by 5.2% from 1990 levels. Countries have subsequently enacted laws and regulations to ensure that they achieve these targets.

Among other measures, most governments have enacted legislations which impact on the operations of hospitality organizations. These include planning guidelines (including building permits), Environmental Impact Assessments (EIAs), levels of greenhouse gas emissions that are permissible, land use planning and development restrictions. According to Middleton and Hawkins (1998), since the Rio Summit in 1992, some governments have made it a statutory/regulatory requirement that large new public and private sector projects undertake EIAs and to further develop Environmental Impact Statements (EIS). Mandatory environmental regulations together with monitoring and explicit penalties for non-compliance have proven to be effective mechanisms for motivating businesses to improve their environmental practices (Rivera, 2004).

In spite of this, there are instances where hospitality businesses have been non-compliant. According to a study in the UK, hotel and restaurant sectors are among the most ignorant when it comes to environmental legislation. Just 8% of small and medium-sized hotel and restaurant businesses in the UK could, without prompting, name the 2006 Waste Electrical and Electronic Equipment [WEEE] Regulations (Caterersearch, 2008). Also, a survey of 363 small hotel

and restaurant operators in the UK revealed that 89% could not identify any piece of environmental legislation unprompted (Environmental Regulations Online, 2009).

Keywords and Concepts

Environment	Ecosystem
Biophysical environment	Symbiotic relationship
Biotic	Conservation
Abiotic	Sustainable tourism development
Environmental resource	Environmental management
Hydrological cycle	
Biodiversity	

Review Questions

1. Explain the following terms:
 - i. Environment
 - ii. Environmental management
 - iii. Environmental resources
 - iv. Sustainable tourism development
2. Distinguish between the following pairs:
 - i. voluntary and mandatory environmental management.
 - ii. biotic and abiotic components of the environment
3. With practical illustrations, identify and explain five resources which are commonly used by the hospitality industry.
4. Explain the symbiotic relationship between tourism and the environment.

