

sustainability in the **hospitality** **industry**

Principles of sustainable operations

Second edition



Philip Sloan, Willy Legrand and Joseph S. Chen



Sustainability in the Hospitality Industry

Sustainability is one of the single most important global issues facing the world. A clear understanding of the issues surrounding climate change, global warming, air and water pollution, ozone depletion, deforestation, the loss of biodiversity and global poverty is essential for every future manager in the hospitality industry. Present and future hospitality executives need to know how sustainable management systems can be integrated into their businesses while maintaining and hopefully improving the bottom line.

Sustainability in the Hospitality Industry, second edition, is the only book available introducing students to the economic, environmental and social sustainability issues specifically facing the industry as well as exploring ideas, solutions and strategies of how to manage operations in a sustainable way.

Since the first edition of this book there have been many important developments in this field and this second edition has been updated in the following ways:

- Updated content to reflect recent issues and trends, including hotel energy solutions and green hotel design.
- Two new chapters on sustainable food.
- Updated international case studies throughout to explore key issues and show real-life operational responses to sustainability within the hospitality industry.
- New case studies on growth hotel development markets, Asia and the Middle East.
- New practical exercises throughout to apply your knowledge to real-life sustainability scenarios.

This accessible and comprehensive account of sustainability in the hospitality industry is essential reading for all students and future managers.

Philip Sloan Department of Hospitality Management, International University of Applied Sciences, Bad Honnef, Bonn, Germany.

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‘This book is a unique addition to the scholarly literature of tourism and hospitality. Although there is an abundance of books on tourism and sustainability in general, this second edition is the only book available to introduce students and practitioners of hospitality to the essential aspects of sustainability and the challenges that face our industry in today’s highly competitive business environment. The book also explores ideas, solutions and strategies to manage operations in a sustainable way. Without doubt, this is one of the most needed and refreshing books we have in the field.’

Muzaffer Uysal, Professor of Tourism and Hospitality
Management, Virginia Tech University, USA

‘*Sustainability in the Hospitality Industry*, second edition takes a holistic approach to sustainability which will support the hospitality industry in taking the next steps forward in the integration of sustainability in its strategy and operations. This book contains examples of best practice which engage the reader and help both practitioners and students to better understand the opportunities offered by the application of sustainability principles to the practice of hospitality. It also clearly illustrates the impact of choices made which gives the industry a clear picture of their responsibilities towards solving them. Finally, this book highlights the importance of sustainable consumer behavior. This is something which is often overlooked but here the authors present the advantages of involving clients and staff in the sustainability effort. This makes this book essential reading for all students and practitioners in the hospitality industry.’

Elena Cavagnaro, Professor of Service Studies,
Stenden University of Applied Science, the Netherlands

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Joseph S. Chen

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Preface

The hospitality industry at large and hotel companies in particular have increased their involvement in matters of sustainability during the past decade. Fuelled by increasing energy costs, public scrutiny and regulatory constraints, large, medium-sized and small hotels are keen to polish up their image while doing something good for the planet.

For the past three decades, the oil and chemical industries have long been in the spotlight due to their visible and often negative environmental image. While not in the front seat of environmental pollution and consumption of non-renewable resources compared to heavy industries, the hospitality industry is often thought to be at the forefront of the service industry in terms of resource usage. While issues surrounding the management of waste produced or water consumed in hotels are important features of any environmental management programme, carbon dioxide (CO₂) emissions have taken the central stage in the mitigation of environmental impacts. The partnership formed to develop Carbon Footprint Standards between the International Tourism Partnership (ITP), the World Travel & Tourism Council (WTTC) and hotel players such as Accor, the InterContinental Hotels Group, MGM Resorts International, Mövenpick Hotels & Resorts, Red Carnation Hotel Collection, Starwood Hotels & Resorts Worldwide, Inc., Premier Inn-Whitbread Group and Wyndham Worldwide is yet one more recent initiative aimed at making carbon measurement possible. It is important to realize that due to a resource-intense utilization of energy, water and consumables in hotel facilities, the environmental footprint of hotels is typically larger than those of buildings of similar size. This is partly explained by the fact that hospitality operations are made up of a diversity of small operations from restaurants and banqueting to housekeeping and spas. Each of those operations accounts for a rather small share of environmental pollution in terms of energy and water consumption, food, waste and other resources but it is *the whole which is greater than the sum of its parts* (Aristotle).

This book is of particular interest for three reasons. First, there is acute pressure on the private sector to clean up after itself. All stakeholders, including investors, employees, customers, environmental and ethical groups as well as the general public, now expect companies to show best performance concerning all dimensions of the 'triple bottom line' of social, environmental and economic management, and companies are increasingly being judged as to their transparency in this system. Although the restaurant sector does not rank as highly among the great polluters such as the metallurgical or chemical industries, the size and rapid growth of the industry make it clear that environmentally sustainable action is necessary. This book

reviews best hospitality industry practices regarding water and energy consumption, material and food procurement and analyses trends in environmental protection and social equity.

Second, legal implications are expanding and becoming increasingly important, with stricter emission and pollution controls than ever before. The tourism industry, as a whole, is one of the largest industries in the world. For businesses, the challenge is to be a step ahead of legislation, rather than being forced to implement certain practices afterwards. This book examines how hotels and restaurants implement environmental management systems, and take advantage of possible certifications or eco-labelling schemes enabling businesses to operate more efficiently and hence improve their competitive position considerably.

Third, by incorporating responsible marketing and corporate social responsibility, hospitality businesses can enhance their reputation and attract investment. This book examines the behaviour of the responsible consumer and discusses which marketing practices would be considered sustainable to attract such consumers.

Sustainability in the Hospitality Industry seeks to provide some answers to questions, attempts to resolve challenges and give guidance. Finally, it provides a new intellectual framework designed to stimulate discussion on conducting business which future generations can benefit from.

Organization of the book

1 The rationale for sustainable development: the environment, the people, the economy

The book starts with a review of the current global challenges faced by nations. [Chapter 1](#) looks at the concept and roots of climate change. It develops further by addressing the management of natural resources and the effects on economic development. The chapter closes by clarifying the links between those global issues and the relationship between economics, people and the environment.

2 Sustainable development in the hospitality industry

[Chapter 2](#) introduces the general concept of sustainability and sustainable development. It develops the idea that financially profitable hospitality operations can be combined with the principles of environmental management and societal engagement. The chapter also describes the various actions undertaken over the past two decades in the field of sustainable hospitality management.

3 Energy efficiency

Chapter 3 describes the issues concerning energy consumption in hospitality operations and defines the term carbon footprint, including calculation and offsetting options. The concepts of renewable and non-renewable energy sources are explained, followed by a detailed analysis of the possibilities and application of the different forms of energy used in hotels: solar, wind, geothermal, wave, hydro and biomass. The chapter also discusses the use of energy-efficient technologies in hotels and the process involved in installing an energy management programme as well as the tools available for energy usage self-audits.

4 Waste management

Chapter 4 starts by describing the various forms of waste and explaining the impacts of waste on the environment and communities. It follows with a discussion on waste management strategy, including waste avoidance, waste reduction, waste recycling and waste disposal methods in the hospitality industry.

5 Water conservation

Chapter 5 focuses on the issues surrounding water usage, water quality, water availability and water conservation. Techniques for water conservation and use of technology to manage water are discussed, including solar water heating and rainwater harvesting.

6 Eco-design in hospitality architecture

Chapter 6 starts by explaining the impacts buildings and hotels have on the natural and societal environments. The chapter continues by underlying the principles of eco-design in construction and architecture as well as site selection. It also explains the theory of embodied energy in construction material and discusses the waste created and resources used in the construction of a hospitality operation. Finally, the chapter reviews the leading construction certification systems available.

7 Food security

Chapter 7 starts by analysing the current food crisis and challenges as well as the impacts linked to conventional agriculture and food security. Food production systems and food scares are discussed. The linkages between agricultural inputs and the Western diet are examined. Finally, issues of animal welfare are reviewed.

8 Sustainable food issues and food sourcing

Chapter 8 continues from **Chapter 7** by introducing issues in sourcing the most important input of restaurant operations, i.e. food. A brief insight into agriculture to

pave the way for a deeper understanding of the effects of sourcing food is given with definitions of the following terms: conventional, integrated, organic and biodynamic farming. The chapter also defines the concept of food miles, sustainable food and a comprehensive analysis of regional food systems is provided.

9 Sustainable food and beverage management

[Chapter 9](#) continues on from [Chapter 8](#) and explores the opportunities and limitations of sustainable food, taking into consideration aspects such as regionality, seasonality, meat and fish dishes, and vegetarian and vegan food. Issues surrounding genetic engineering are discussed and categories of sustainable food are presented. The chapter continues by discussing nutrition in relation to human health.

10 Green marketing and branding

Referring to the discussion in previous chapters, [Chapter 10](#) defines what it takes to establish a sustainable marketing strategy. To do so, the chapter identifies the principles of green marketing for hotels and examines the concept of sustainable development in relation to external communication and green marketing. It examines responsible marketing as part of a company's ethical strategy and discusses the four new Ps of green marketing.

11 Consumer typology and behaviour

[Chapter 11](#) examines the changes in consumer behaviour in relation to sustainable development. The chapter examines the importance for companies in tourism to identify the motives of the responsible tourist. The chapter also discusses the techniques used by hospitality operations to involve consumers in sustainable management practices. The chapter closes on a discussion to understand behavioural variances toward consumption.

12 Corporate social enterprises

[Chapter 12](#) identifies the underlying principles of sustainable business management and discusses the concept of corporate social responsibility as well as the concept of social entrepreneurship. The chapter discusses the relevance of each strategy in the hospitality industry.

13 Hospitality industry environmental management systems

[Chapter 13](#) starts with defining what an environmental management system is. It continues by discussing the ways to implement such a system in hospitality operations and examines the challenges and opportunities associated with environmental

management systems. A set of recommendations for the successful implementation of an EMS are discussed.

14 Certification processes and eco-labels

Chapter 14 defines what is meant by ‘certification’ and evaluates the various certification schemes available to hospitality managers. The chapter continues by discussing the major benefits associated with certification as well as the costs associated with certification. The chapter introduces a set of well-established standards and discusses how hotels communicate performance.

15 Financing, investing, measuring and accounting in sustainable hospitality

Chapter 15 explores the possibilities of accessing the finance investment needed for new green technologies or green refurbishing in hotels. The chapter provides examples and an overview of green financing schemes. The chapter also discusses green accounting, defines the concept of externalities and presents a series of environmental performance indicators and sustainability performance indicators. A sustainability performance framework is presented and online environmental self-auditing tools are discussed.

Epilogue: sustainability education in hospitality

The Epilogue discusses the issues and challenges in providing sustainability in hospitality curricula in universities.

Glossary

At the back of the book there is also a full glossary of terms used. These terms are shown in bold on their first occurrence in the chapter.

Companion website resources

A companion website accompanies this book at www.routledge.com/cw/sloan, and includes additional resources for both students and lecturers.

Student resources

- A test bank of questions for each chapter for students to test their understanding.
- Links to relevant videos and websites to provide further insight into the industry.

Lecturer resources

- PowerPoint slides of all the tables, line figures and photographs from each chapter.
- Additional case studies to provide further examples of theory in practice within the hospitality industry.

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The rationale for sustainable development

The environment, the people,
the economy

CHAPTER OBJECTIVES

The objectives for this chapter are:

- To explain the way the activities of mankind are affecting the planet
- To describe the various forms of environmental degradation
- To analyse the reasons for the over-exploitation of water, minerals and oil
- To describe the effects of over-population
- To analyse the relationship between economics, people and the environment
- To define sustainable economics



Emerging challenges for the planet

Impact on the planet

Humankind consumes what nature has to offer and in return we create waste and deplete the Earth's natural reserves. All our actions have an impact on the Earth's **ecosystems** that are only able to renew themselves at low levels of consumption. For many thousands of years man's impact on the **environment** was negligible, however, at the dawn of the Industrial Revolution all this changed. We now consume more of the Earth's resources than the planet can regenerate, hence, the planet is

in 'ecological overshoot'. Our current consumption levels are simply too high and action needs to be taken soon as the planet's non-renewable resources are quickly being depleted. This depletion is accelerated by the continuous growth of the world population and its changing consumption patterns.

Climate change

Proven by recent incontrovertible scientific evidence, the climate has been changing as a consequence of human activity during the past 150 years. Within the troposphere (the lower part of the atmosphere about 10–15 kilometres deep), there are what is known as **greenhouse gases**. When sunlight reaches the Earth, some of it is converted to heat. Greenhouse gases absorb some of the heat and trap it near the Earth's surface, so that the Earth is warmed up. The most important greenhouse gases are **carbon dioxide**, CFCs (chlorofluorocarbons), nitrogen oxides and methane. This process is commonly known as the **greenhouse effect**. Life, as we know it, exists only because of this natural greenhouse effect which regulates the Earth's temperature. Without these gases, the surface temperature on Earth would be approximately 30°C lower. However, it is now clear there have been increases in the concentration of these gases which have exceeded the amount sequestered in the **biomass**, the oceans and other sinks. This has led to increases in air temperatures around the globe ranging from –0.26°C in 1880 up to 0.63°C in 2011 (National Aeronautics and Space Administration, 2011) known as **global warming**. It is suspected that this phenomenon may be causing increases in storm activity, the melting of ice caps on the poles resulting in flooding in lowlands, and other environmental problems. Scientists expect sea levels to rise between 10 and 90 cm by 2100 and ocean temperatures to increase. This of course is serious in the extreme for all nations but developing nations of the world simply lack resources to respond to this form of environmental **degradation**. For example, in Bangladesh, a 50 cm rise in sea level will place approximately 6 million people at risk from flooding. Carbon dioxide, one of the greenhouse gases, is also essential for internal respiration in the human body. It is the guardian of the pH (the measure of the acidity or basicity) of the blood, which is essential for survival. Apart from being an essential buffer in the human system, carbon dioxide is also known to cause health effects when the concentrations exceed a certain limit.

World leaders met in Kyoto, Japan, in December 1997, to consider a world treaty restricting emissions of greenhouse gases, mainly of carbon dioxide, that cause global warming. Unfortunately, while the **Kyoto Protocol** has worked for a while, America, the world's largest polluter, has never signed up. At the United Nations (UN) climate control talks in December 2011 in Durban, the protocol was dealt a major blow with Canada announcing its decision to pull out. Russia and Japan also oppose any extension of their commitments. The extension of the protocol beyond 2012, when the first round of commitments expires, was agreed on the last day by industrialized countries only after developing countries gave their nod for a new treaty for emissions reduction from 2020 onwards.



Damage to biodiversity

One reason for the catastrophic losses and degradation to the world's **biodiversity** (up to 60 per cent of the world's ecosystems are degraded or used unsustainably, according to the European Commission in 2011) is global climate change. The distribution of species (biogeography) is largely determined by climate, as is the distribution of ecosystems and plant vegetation zones (biomes). Climate change sometimes shifts these distributions but, for a number of reasons, plants and animals cannot always adjust.

Over-hunting has been another significant cause of the extinction of hundreds of species and the endangering of many more, such as buffalo in the nineteenth century and many African large mammals. Most extinction over the past several hundred years is mainly due to over-hunting for food, fashion and profit, in addition to environmental degradation.

One of the best-known models of commercial exploitation is the whaling industry, where whales are slaughtered for oil and meat. This custom has led to many whale species being brought to the brink of extinction. A century ago, humans could not seriously threaten whale populations because of rather primitive technology. At that time, a three-year-long whaling trip would kill fewer than a hundred whales. However, by 1967, about 60,000 were being killed yearly, yielding roughly 1.5 million barrels of oil. Not only the whaling industry but the fishing industry has developed exponentially as well. Larger, faster ships, sonar, better nets and other similar improvements have increased the ability of commercial fishermen to catch more fish and put the survival of species in danger.

Between 1966 and 1970, world herring catches decreased by almost a hundred-fold, from 1.7 million tonnes to 20,000 tonnes. Indeed, marine fisheries have been wiped out because their catches are no longer profitable. The California Sardine Fishery took 750,000 tonnes in the 1936–1937 season, but 21 years later, only 17 tonnes were brought in. The local fishing industry has not, to this day, recovered. In addition, when a specific type of fish becomes rarer, its value and price increase. Consequently, fishermen are given greater incentive to hunt it. It then becomes even more difficult for that species to survive.

However great over-exploitation is, the greatest damage to marine life is the result of general environmental degradation. Most sea aquatic life is concentrated in shallow waters close to land, where marine populations that are already exploited are also most subject to heavy **pollution** (because most pollutants are dumped into the sea near the shore). Moreover, many organisms live in estuaries, the mouths of rivers and streams where fresh and salt waters mix. These areas are threatened because of industrial and human waste in some parts of the world and fertilizers washed off agricultural land that interfere with the delicate natural equilibrium of these environments. Habitat loss and degradation caused by human activity are important causes of **flora** and **fauna** extinctions. As **deforestation** proceeds in tropical forests, more loss of biodiversity can be expected. All species have specific food and habitat needs, the more specific these needs and localized the habitat, the greater the vulnerability of species to loss of habitat through agricultural land

and livestock enlargement and to roads and cities. As the human population passed the seven billion mark in 2011, roughly half of the world's forests and natural habitats have been transformed, degraded or destroyed. Tropical forests are important because they are home to at least 50 per cent, and perhaps more, of the world's biodiversity, and they also act like sponges, releasing vast quantities of moisture into the atmosphere to fall as rain elsewhere and perform the vital task of absorbing carbon dioxide from the atmosphere. The original extent of these forests was 15 million square kilometres (km²), now there remains about 7.5–8 million km². While there is uncertainty regarding the rate of loss, and what it will be in the future, the likelihood is that tropical forests will be reduced to 10–25 per cent of their original extent by late twenty-first century. Habitat fragmentation is a further aspect of habitat loss that often goes unrecognised. Forests, meadows, boglands and other habitats that are divided by human development remain generally small and isolated and can only maintain very small animal populations at best. Any species that requires a large home range, such as the grizzly bear, will not survive if the area is too small.

Over-exploitation of water, minerals and oil resources

Materials removed from the earth are needed to provide humans with food, clothing, and housing in the process of the continual standard of living upgrading that most people expect. Some of the materials needed are renewable resources, such as agricultural and forestry products, while others are non-renewable, such as minerals and oil. The United States Geological Survey has reported in 'Materials Flow and Sustainability' that there is increasing demand for non-renewable resources. Primarily due to the new developing **BRIC** (Brazil, Russia, India and China) economies, world commodity prices maintain their relentless push higher and higher as vital minerals such as ores of copper or aluminium become depleted. High oil prices are here to stay, the European Union's Energy Commissioner Guenther Oettinger warned in 2011. The lower prices of the previous three years had been the result of the financial crisis and recession, but escalating demand is now pushing up prices. The over-use and waste of valuable natural resources are threatening to produce a fresh economic crisis, Janez Potočnik, chief of the European Union's Commission for the Environment, warned in the same year. He said:

It's very difficult to imagine [lifting Europe out of recession] without growth, and very difficult to imagine growth without competitiveness, and very difficult to be competitive without resource efficiency. Unless consumers and businesses take action to use resources more efficiently (from energy and water to food and waste, and raw materials such as precious metals), then their increasing scarcity, rising prices and today's wasteful methods of using them will drive up costs yet further and reduce Europe's standard of living.



This stark warning highlights the increasing **scarcity** and rising price of some key resources, including energy and water, but also food and raw materials such as metals, ores and minerals.

Some essential minerals can be recycled, such as phosphorus, potassium and nitrogen but the number of people that even the most efficient **recycling** could support may be much less than today's world population. In 1997, Canadian geographer Vaclav Smil calculated that were it not for the industrial fixation of nitrogen, the world's population would probably not have exceeded 4 billion people, 3 billion fewer than are alive today. It's likely that **organic agriculture** can feed many more people than it currently does, but the hard accounting of the nutrients in today's 7 billion human bodies, let alone tomorrow's projected 10 billion, challenges the hope that a climate-neutral agriculture system could feed us all. The bonanza forecast by some economists of cheap bio-fuels is beginning to backfire since land that was previously used for producing food is now used to produce crops to fuel cars. In the United States, which harvested 416 million tonnes of grain in 2009, 119 million tonnes went to ethanol distilleries to produce fuel for cars which is enough to feed 350 million people for a year. The result has been a massive increase in world food prices. The massive United States investment in ethanol distilleries sets the stage for direct competition between cars and people for the world grain harvest. In Europe, where much of the auto fleet runs on diesel fuel, there is growing demand for plant-based diesel oil, principally from rapeseed and palm oil. This demand for oil-bearing crops is not only reducing the land available to produce food crops in Europe, it is also driving the clearing of rainforests in Indonesia and Malaysia for palm oil plantations. On the demand side, the other reasons for the huge food price increases in the early years of the twenty-first century are population growth and the rising affluence of 300 million inhabitants of the BRIC countries. On the supply side: aquifer depletion, the loss of cropland to nonfarm uses, the diversion of irrigation water to cities, the plateauing of crop yields in agriculturally advanced countries, and, due to climate change, crop-withering heat waves, melting mountain glaciers, ice sheets and soil erosion. These climate-related trends seem destined to take a far greater toll in the future. An estimated one-third of the world's cropland is losing topsoil faster than new soil is forming through natural processes – and thus is losing its inherent productivity. Two huge dust bowls are forming: one across north-west China, western Mongolia and central Asia; the other in central Africa. Each of these dwarfs the US dust bowl of the 1930s.

In 2002, the United Nations asked 1500 experts to study the **social** effects of water scarcity in developing countries. One year later teams of executives from the world's largest water, oil and chemical companies tried to forecast the effect of future water scarcity on their own and national economies. Both groups reported back with alarming unanimity and predicted supply, health and economic crises coming sooner rather than later if there is no radical change in the way water is used. Reasons for water shortages can be found in the phenomenal pace at which glaciers are melting. Glaciers that used to gently supply communities in the summer season with a steady water supply are now melting so fast as to cause unseasonal floods and mud slides.

If all the ice in the polar ice caps were to melt, the oceans would rise by an estimated 70 metres. Even present low level melting is affecting coastal life and coral reefs, which are disappearing. Droughts, too, are becoming more frequent and lasting longer, rains are coming more irregularly. But the really big water deficits are caused by over-pumping of the water aquifers and wasteful irrigation techniques. In India, the World Bank numbers indicate that 175 million people are being fed with grain that is produced by over-pumping. In China, over-pumping provides food for some 130 million people. In the United States, the world's other leading grain producer, the irrigated area is shrinking in key agricultural states such as California and Texas. As water becomes scarcer, some countries may have to give up growing certain crops and rearing animals. A one quarter-pound hamburger needs about 11,000 litres of water, a cotton T-shirt 7,000 litres, a kilo of rice 5,000 litres. When the water needed to grow crops has to be pumped hundreds of metres from below, the true cost of food on supermarket shelves becomes clearer. Rather than digging deeper and moving water further, the future will be about recycling water. Waste water is increasingly being collected from kitchens, gardens and bathrooms, treated and reused. The technology is proven, and it is being used everywhere from golf courses in southern Spain to desert farms in Jordan and breweries in Ghana. Singapore, a city right on the equator with seemingly no shortage of fresh water, is using waste water for all its industries and most of its housing. Cities that do not want to ask their citizens to save water are moving rapidly to desalination. California and the Middle East, led by Dubai, are increasingly dependent on the technology. Most coastal cities around the world and even London may soon build a plant as desalination becomes a US\$100 billion-a-year industry. In most cases, however, desalination is the most expensive and least sensible option for the time being. Studies suggest that most communities can find additional water, more quickly and for less money, by improving efficiency and management. The downsides of desalination are the enormous amounts of power needed and the vast quantities of salt that are extracted and must be disposed of. In the next decade, however, the cost is expected to fall as the technology improves, and desalination plants will increasingly be linked to waste heat from factories or solar power stations.

Over-population

Few experts question the received demographic wisdom that the Earth will be home to roughly 9 billion people in 2050 and become stable at 10 billion by the end of the century. Demographers also project that life expectancy will keep rising while birth rates drift steadily downward, until the human population stabilizes at nearly 3 billion more people than today's 7 billion residing on this planet. Amazingly, 2 billion people are overweight and paradoxically another 1 billion do not have enough food on the table to eat every evening. It appears difficult to square this projected growth in the population with the ecological limits that we appear to be meeting and perhaps surpassing. There is little scientific dispute that the world is heading toward



a warmer and harsher climate, less dependable water and energy supplies, less intact ecosystems with fewer species, more acidic oceans and less naturally productive soils. Some analysts, ranging from scientists David Pimentel of Cornell University to financial advisor and philanthropist Jeremy Grantham, dare to underline the possibility of a darker alternative future, suggesting that humanity long ago overshot a truly **sustainable** world population.

Most scientific commentators on the environment and population do not sign up to such predictions. However, questions should be asked about whether such possibilities are real enough to temper the usual demographic confidence about future population projections.

Climate change, water aquifer depletion and natural resource depletion all provide daunting challenges to the present-day population. The world's net land under cultivation has scarcely expanded since 1960, with millions of acres of farmland gobbled up by urban development while roughly equal amounts of less fertile land have come under the plough. The doubling of humanity has cut the amount of cropland per person in half. Much of this essential asset is declining in quality as constant production saps nutrients that are critical to human health. Fertilizer helps restore fertility (though rarely micronutrients), but at ever-higher prices and through massive inputs of non-renewable resources such as oil, natural gas and key minerals.

It is certainly possible that ingenuity, resilience and effective governance will manage the stresses humanity faces in the decades ahead and will keep life expectancy growing in spite of them. Slashing per-capita energy and resource consumption would certainly help. A sustainable population size will be easier to maintain if societies also assure women the autonomy and contraceptive means they need to avoid unwanted pregnancies. However, it seems foolish to treat projections of 10 billion people at the end of this century with total serenity. More humility about population growth is needed in an uncertain and dangerous century where **conservation**, correct management and political leadership have never appeared so important.

The economy, present and future

The economy, the human population and the Earth's ecosystems are all inextricably linked. What affects one affects another, the change in state of each one of these components affects the states of the other components. The present economic model creates momentum for certain processes it creates and drives growth. However, the economy is constrained by a wider ecosystem **carrying capacity** so the economic model cannot drive growth indefinitely. When growth starts to impact on the ecosystems, i.e. it is nearing the ecosystem carrying capacity, the ecology/economy will start dragging population growth down. This is because the population growth is dependent on the economy/ecology to sustain it and maintain it. Ecological carrying capacities are not simply caused by the finite limits of natural

resources. In practice, it is the ability of a species to access its essential resources, which become constricted. To a large extent, cooperation is necessary for things to work and as limits are reached, the social efficiency of the functioning of a species is affected. In the case of mankind, it will be our economic patterns, governments and infrastructures which will need to change. This will be the mechanism by which this growth will be restricted, not resources running out completely.

Our present system of capitalism has been described as 'a financially profitable, non-sustainable aberration in human development' but no-one can deny that it has been prodigiously productive. Nearly everyone alive in Western Europe today has a higher real income than they would have had if capitalism had never existed. The trouble is that among the things that have been destroyed in present-day capitalism is the way of life on which capitalism in the past depended.

Defenders of capitalism argue that it offers everyone the benefits that in Karl Marx's time 150 years ago were enjoyed only by the bourgeoisie, the settled middle class who owned capital and had a reasonable level of security and freedom in their lives. In the nineteenth century, most people had very little. They lived by selling their labour more often than not on a daily basis and when the mill or the farm had less work, they faced hard times. But as capitalism develops, its defenders say, an increasing number of people will be able to benefit from it. Fulfilling careers will no longer be the prerogative of a few. People will no longer struggle from month to month to get by on a meagre wage without security. Protected by a cushion of economies, a house they own and a decent pension, they will be able to plan their lives without fear. With the growth of democracy and the spread of wealth, no-one needs to be shut out from the aspirations for a better life. Everybody can be middle-class.

In fact, in many developed countries over the past 20 or 30 years, the opposite has been happening. Few people have job security, life-long careers are barely memories and the trades and many professions of the past have largely gone.

While previous generations could comfort themselves with significant savings and property ownership, credit has now become so tight and employment so irregular that house purchasing is a distant dream for many. In many parts of Europe and North America, house ownership has become the scourge of negative equity as prices stagnate and the value of bricks and mortar falls. A dwindling minority can count on a pension on which they can comfortably live but many regard their working lives extending into what was until recently considered to be the golden years. The future is insecure, the art of living from day to day is becoming a necessity for many.

For the more fortunate individuals who do have work, disposable incomes are far higher than in the past and the remnants of the post-war welfare state still provide care, infrastructure and medical treatment, albeit often limited. The model of free, comprehensive welfare for all as created by Aneurin Bevan in the UK is no more than a distant memory.

Job scarcity and security are becoming a generational issue, the situation for many younger people is worse. Increasingly, higher education is no longer a birth right, it is a business transaction. Gaining knowledge and skills has become an issue of



wealth and financial debt. At a time when savings are diminishing due to low interest rates, being thrifty can make the situation worse. It is the cavalier business person who borrows heavily and is not afraid to declare bankruptcy who survives and goes on to prosper. In a market place where mobility is expected, it is those who are always ready to try something new who have the most promising future. Those who stick dutifully to their old ways risk falling by the wayside.

In 2008, the bubble economy of the Western economies burst and in 2012 global markets are in a state of reconfiguration. The USA and Europe were ready to embrace **globalization** only when it seemed the process would produce their version of capitalism. As the global crisis unfolds, there is unlikely to be any alteration in human behaviour. The reflex of people is to turn to governments for security from the thunderclouds while governments, as always, will be mainly concerned with their own survival. Until now, bank bail-outs have stopped the financial system from disintegrating and policies of monetary expansion attempt to kick-start economies. The growth produced in the bubble economy leading up to the crisis was unsustainable; attempts to re-start it might well be self-defeating. Resource scarcities, upon which much of this temporary prosperity is built, will become more obvious and more threatening to the planet.

The model of globalization in place over the last generation appears to be undergoing an irreversible collapse. The global free market was only stable when resting on the assumption that it could be self-regulating, but since economies are so closely connected, the whole system has become fragile with different fractions pulling it apart. In the past, destabilization suffered in one economy would not be passed like a virus to the next. In the present integrated system where countries and economies rely on each other, it is likely to break down when one part ceases to function. When the American sub-prime mortgage crisis struck and brought down the whole financial system, shock waves were sent around the globe and shortly after its real economy went into reverse and those of its trading partners.

A new style of sustainable economics is needed. The present freedom of markets is there only for the benefit of human beings, and then, it can be argued, only for a minority and generally not for the environment. In the global free market, societies and individual governments have little control over the economic instruments used by it. The spread of new communication technologies throughout the world does not make Western values universal or the rise of a single economic civilization more likely. On the contrary, it makes a world rich in cultural diversity a distant memory.

Towards sustainable economics

Some environmentalists and economists argue in favour of a sustainable economy which implies including all resources that contribute to sustainable human activity. In the current market economy allocation system, most non-marketed natural and social capital **assets** and services that are critical contributors to human well-being and that of the planet are excluded. In sustainable economics contributions of natural

and social capital are included and approximate to real economic efficiency. In a sustainable economy, the use of *renewables* are maximized, such as from wind, water, the sun or another **renewable resource** for power production, rather than burning fossil fuels, of which there are limited supplies.

It means that society would desire a more constant Gross National Product (GNP), with some sectors growing and others declining at an equal and opposite rate. Those sectors of the economy that increased the **sustainability** of the environment, such as **renewable energy** or the production of long-lasting goods, would be encouraged to grow. Where new technologies make growth possible without decreasing sustainability, growth would be stimulated. Likewise, growth would be encouraged in service industries where a high proportion of human capital is involved. Rather than consuming natural resources and depleting biodiversity, the sustainable economy seeks to use what is already taken, leaving natural resources as a backup supply. Biological capital is viewed as being of equal importance to financial capital.

In order to stimulate the sustainable economy, incentive systems would be used to reward those who minimize the toll they exert on the environment, and produce environmentally friendly items for human use. The levels of consumerism that exist today in the Western world are simply not sustainable. The planet does not have enough resources to provide the new BRIC countries with the same levels of consumerism as exist today in the Western world on a long-term, sustainable basis. We all need to make do with less; people should be encouraged to use goods and services that bring comfort and well-being rather than happiness as defined by the number of cars parked in the drive or by the size of one's house. Finally, a sustainable economy would attempt to build a more egalitarian society. While trying to minimize the number of goods people used, the economy would also try to equalize what goods people have.

EXERCISE

SMALL GROUP QUESTION AND GROUP DEBATE

Read the article entitled 'The Economics of the Coming Spaceship Earth' by Kenneth E. Boulding. Then read the article entitled 'Lifeboat Ethics: The Case Against Helping the Poor', by Garrett Hardin. Which analogy, Hardin's lifeboat or Boulding's spaceship, more accurately describes the current condition of human civilization on Planet Earth? Provide some argumentation and be ready to discuss in class.

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5 WRITTEN (AND RESEARCH) ASSIGNMENT The use of energy in hotels greatly impacts upon the environment but is invisible to hotel guests, who have a seemingly unlimited supply of energy available, e.g. to switch the lights on or turn the TV on. Energy is used everywhere in hotels, for HVAC, in the guest rooms, the kitchens, for the laundry, the pool, the lifts and escalators and so on. • What alternative sources of energy to the traditional fossil fuels are available to hoteliers with possibly less impact on the environment? • What should a hotel implement as an example of a solution to reduce the overall energy consumption and how much would be the capital investment (if any) to implement this?

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Go to www.routledge.com/cw/sloan to find PowerPoint slides
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from the book, additional case studies, a test bank of
questions and extra links to useful

videos. • How can the building construction process said to
be polluting? • Describe the principles of sustainable
construction. • Why are there fewer environmental impacts
during the renovation of a building than in construction? •
Explain the sustainable design priorities.

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from the book, additional case studies, a test bank of
questions and extra links to useful

videos.

4 GROUP PROJECT OR WRITTEN ASSIGNMENT Animal welfare Choose
and answer one of the following questions: • Many
vegetarians believe that factory farming is a cruel and
unnecessary practice and that a diet would be healthier if
less meat was eaten. Do you agree? Or • If there are so
many problems today with food scares and general food
safety, it is because animals are not being treated
properly in the first place. Do you agree? Or • Many
countries spend a great amount of money on household pets.
Some argue that money spent on helping poor and hungry
people instead would be wiser. Do you agree? Or • Hotels
and restaurants should regularly pay a visit to the
slaughterhouse in order to check and control the suppliers
of meat, the same meat which eventually ends up on plates
in the dining room. Do you agree?

8 CHAPTER 8 Sustainable food issues and food sourcing

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9 CHAPTER 9 Sustainable food and beverage management

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1 INDIVIDUAL PROJECT AND DISCUSSION My food habits • Make a complete listing of food, food types and food ingredients that you consume over a complete week. Develop a categorization system for the food (e.g. organic, local, processed, etc.) and share and discuss your results with classmates. • How much effort would it take to ensure a sustainable food sourcing?

2 GROUP DISCUSSION OR GROUP PROJECT Working with restaurateurs • Visit a local restaurant and find out where the food comes from (sourcing). Develop an action plan for the manager or owner of the restaurant to increase the sustainability of the food offerings. Present the results to the manager or owner and classmates.

3 GROUP RESEARCH AND DISCUSSION A question of food management Provide answers and critically discuss the following questions: • How would you describe sustainable food? • What types of food can be considered sustainable? • Describe some common health problems that can result from poor eating habits. • What is organic agricultural production? • What is understood by the term 'food miles'? • Describe three types of sustainable wine.

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Additional material

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Evaluate the websites of five different hotels undertaking
green initiatives and compare the differences and
similarities of the green-related messages posted on the
web. • Discuss if there is any issue preventing the
successful delivery of the online communicative messages.

3 GROUP PROJECT Communicating the four new Ps • Write a
short essay that could be used for a press release,
incorporating the concepts of the four new Ps (people,
planet, profit and process). Choose the hospitality entity
you are interested in and report its green performance.

4 GROUP PROJECT OR WRITTEN ASSIGNMENT Brand image and green
hospitality • Identify an establishment involving green
hospitality management and find out how the specific
service/product attributes affect the image of the brand.

5 GROUP PROJECT AND PRESENTATION Market analysis • Conduct
a market analysis on the major players among green hotels
from a particular city, region or country. The analysis
should reveal the strengths and weaknesses of each player
in regard to service quality and pricing structure.

6 WRITTEN (AND RESEARCH) ASSIGNMENT Loyalty programmes •
Compare the loyalty programmes of three green hotels of
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differences in reward provision among those three

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3 GROUP PROJECT Motivation to purchase green • Interview your friends or colleagues to discover what are the potential factors motivating them to stay at a hotel practising green operations.

4 GROUP PROJECT OR WRITTEN ASSIGNMENT Perception of green hotels • Conduct a behavioural study by interviewing a few individuals who are regarded as frequent travellers, to understand their awareness and perceptions of green hotels.

5 GROUP PROJECT AND PRESENTATION Communication of green efforts • Browse three hotel websites which contain information on their green practices. Then, elaborate if

those green-related communicative messages affect your choice of hotels. If so, why are they so effective? 6
WRITTEN (AND RESEARCH) ASSIGNMENT • If you were a marketing manager in a green hotel, suggest three innovative marketing ideas which could increase room sales, so as to secure consumer loyalty (e.g. giving a discount to those staying at a room consuming energy below the average usage of energy per room).

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1 GROUP DISCUSSION, GROUP PROJECT OR WRITTEN ASSIGNMENT
Hospitality stakeholders • Map out who the key internal and external stakeholders are for a hotel or restaurant and identify the potential impacts on the business and wider communities.

2 GROUP DISCUSSION OR GROUP PROJECT Non-governmental organizations and hospitality • Find out what is the NGO's verdict on what is missing from the hospitality sustainability strategy. How much should a hotel engage with NGOs? What does an engagement deliver for the hotel company and for the NGO?

3 GROUP PROJECT Embracing CSR in the hospitality industry • Identify, categorize and describe the key responsibilities a hotel or restaurant takes when embracing corporate social responsibility.

4 GROUP DISCUSSION Engaging green travellers as key stakeholders in the future of our industry • Discuss how hospitality businesses can better collaborate with other consumer service and product providers to promote sustainability and engage with the sustainable travellers.

5 GROUP DISCUSSION Multi-stakeholder approaches to sustainable hospitality • Identify examples of public and private sector collaboration and multistakeholder approaches to sustainability challenges and opportunities in hospitality. Discuss whether those initiatives were successful (or not) from the sustainability viewpoint.

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Epilogue: Sustainability education in hospitality

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Bridging the gap between research and industry Results of hospitality-based research often do not make it to the hospitality firms' boardrooms. However, a greater collaboration between researchers and practitioners could hasten the speed of change towards greater sustainability in the hospitality industry. • Discuss how knowledge from research could better inform industry practices supporting sustainable management and operations strategies and practices and help to promote innovative solutions in hospitality. EXERCISE