

CHAPTER 14

SUSTAINABLE CONSUMPTION



LEARNING OBJECTIVES

After reading this chapter you should be able to:

- Explain the historical perspective on how sustainable consumption has developed.
- Describe the importance of some of the principles of sustainable consumption.
- Explain the relevance of ecological modernisation to our lives in the 21st century.
- Explain the key elements of the human impact on the environment.
- Describe the approaches taken towards social sustainability.
- Provide some examples of greenwashing seen in marketing communications.
- Explain the relevance of anti-consumerism, the ecological footprint, overconsumption and simple living.
- Describe the impacts of hyperconsumption.

INTRODUCTION

Sustainable consumption is the study of resource and energy use (domestic or otherwise) and it complements analyses of production and its processes. As the term sustainability would imply, those who study sustainable consumption seek to apply the concept of 'continuance': the capacity to meet both present and future human generational needs. Thus it is about promoting resource and energy efficiency, sustainable infrastructure and providing access to basic services, green and decent jobs and a better quality of life

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for all. Sustainable consumption as part of sustainable development is a prerequisite in the worldwide struggle against sustainability challenges such as climate change, resource depletion, famines or environmental pollution. Its implementation helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty. At the current time, material consumption of natural resources is increasing (Muhammad and Khan, 2021; Schandl et al., 2018), particularly within East Asia (Abid et al., 2021). The Asia-Pacific region has now become the world's largest user of natural resources, and established systems of production and consumption have been tailored to the current high levels of resource use and emissions (Amin et al., 2022; Nakajima et al., 2018). Countries are also continuing to address challenges regarding air, water and soil pollution.

Since sustainable consumption and production aims at 'doing more and better with less', net welfare gains from economic activities can increase by reducing resource use (Ivanic and Martin, 2018; Kheirinejad et al., 2022; Shen et al., 2022), degradation and pollution along the whole life cycle, while increasing quality of life (Fuchs and Boll, 2018). There also needs to be significant focus on the operation of the entire supply chain, involving everyone from producer to final consumer. This includes educating consumers on sustainable consumption and lifestyles (Bennett and Alexandridis, 2021; Kiss et al., 2018; Uldemolins and de Magistris, 2021), providing them with adequate information through standards and labels, and engaging in sustainable public procurement (Manta et al., 2022), among others.

Should the global population reach nearly 10 billion by 2050, the equivalent of almost three planets could be required to provide the natural resources needed to sustain current lifestyles. With rises in the use of non-metallic minerals within infrastructure and construction, there has been significant improvement in the material standard of living. The per capita 'material footprint' of developing countries increased from 5 metric tons in 2000 to 9 metric tons in 2017. The material footprint is on everyone's mind as 93% of the world's 250 largest companies are now reporting on sustainability. Before we go further into particular issues, Table 14.1 highlights some facts and figures adapted from www.un.org (2022):

TABLE 14.1 Highlights of water, energy and food consumption

Water consumption	Less than 3% of the world's water is fresh (drinkable), of which 2.5% is frozen in the Antarctic, Arctic and associated glaciers. Humanity must therefore rely on 0.5% for all of its ecosystems and fresh water needs. By 2050 at least one in four people will live in a country where the lack of fresh water will be chronic or recurrent
	Humans are polluting water faster than nature can recycle and purify water in rivers and lakes
	More than 1 billion people still do not have access to fresh water and 40% of the world are affected by water scarcity
	Excessive use of water contributes to the global water stress
	Water is free from nature but the infrastructure needed to deliver it is expensive

Energy consumption	If people worldwide switched to energy-efficient lightbulbs, the world would save over 1400 million tons of CO ₂ and avoid the construction of 1250 power stations
	Despite technological advances that have promoted energy efficiency gains, energy use in the global industrial sector is forecast to grow by more than 30% between 2018 and 2050 as consumption of goods increases, and by 2050, it is expected to reach around 315 quadrillion British thermal units (Btu). Commercial and residential energy use is the second most rapidly growing area of global energy use after transport
	The total global vehicle stock will increase from about 800 million in 2002 to more than 2 billion units in 2030. By this time, 56% of the world's vehicles will be owned by non-OECD countries, compared with 24% in 2002. In particular, China's vehicle stock will increase nearly 20-fold, to 390 million in 2030. This fast speed of vehicle ownership expansion implies rapid growth in oil demand
	Households consume 29% of global energy and consequently contribute to 21% of resultant CO ₂ emissions
	The current global energy crisis has added new urgency to accelerate clean energy transitions and, once again, highlighted the key role of renewable energy. For renewable electricity, pre-crisis policies lead to faster growth in the UN's updated forecast. Notably, wind and solar photovoltaic systems have the potential to reduce the European Union's power sector dependence on Russia's natural gas by 2023
Food consumption	While substantial environmental impacts from food occur in the production phase (agriculture, food processing), households influence these impacts through their dietary choices and habits. This consequently affects the environment through food-related energy consumption and waste generation
	Each year, an estimated one-third of all food produced – equivalent to 1.3 billion tons worth around \$1 trillion – ends up rotting in the bins of consumers and retailers, or spoiling due to poor transportation and harvesting practices
	The United States discards more food than any other country in the world: nearly 40 million tons – £80 billion every year
	Globally, 2 billion people are overweight, and of those 650 million are obese
	Land degradation, declining soil fertility, unsustainable water use, overfishing and marine environment degradation are all lessening the ability of the natural resource base to supply food
	From farm to grocery store shelf, energy and fuel are used at every step as our food moves through the supply chain, the way we grow, transport, prepare, process and package consumes around 30% of the world's available energy. Around 70% of this occurs after the farm

Source: Adapted from www.un.org.

DEFINITIONS

Sustainability is defined by the Oxford English Dictionary as avoidance of the depletion of natural resources in order to maintain an ecological balance.

The definition proposed by the 1994 Oslo Symposium on Sustainable Consumption is:

the use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations.

In order to achieve sustainable consumption, two developments have to take place: it requires both an increase in the efficiency of consumption as well as a change in consumption patterns and reductions in consumption levels in industrialised countries. Rich members of societies in developing countries, who have a large ecological footprint, must set the example for the increasing *middle classes* in developing countries (Meier and Lange, 2009). The first prerequisite is not sufficient on its own and can be termed weak sustainable consumption. Here, technological improvements and eco-efficiency support a necessary reduction in resource consumption. Once this aim has been met, the second development, a change in patterns and a reduction in levels of consumption, is essential. In order to achieve what can be termed strong sustainable consumption, changes in infrastructure as well as changes in the choices available to customers are required. Weak sustainable consumption has been discussed in the political arena, whereas strong sustainable consumption has been largely missing from the debate until recently (Fuchs and Boll, 2018; Green et al., 2022; Niskanen and Rohrer, 2022; Opoku et al., 2021; Willett et al., 2022).

Attitude-behaviour/ Values-action gap

The space that occurs when the values (personal and cultural) or attitudes of an individual do not correlate with his or her actions or behaviour

The so-called **attitude-behaviour** or **values-action gap** describes a significant obstacle to changes in individual customer behaviour (Essiz et al., 2023). Many consumers are well aware of the importance of their consumption choices and care about environmental issues (Rahmani et al., 2021); however, most of them do not translate their concerns into their consumption patterns as the purchase decision-making process is highly complicated and relies on, for example, social, political and psychological factors. Young (2010) identified a lack of time for research, high prices, a lack of information and the cognitive effort needed as the main barriers when it came to green consumption choices. Just over 10 years on from that and we find that environmental attitudes, environmental knowledge, subjective norms, perceived behavioural control, conditional value and emotional value have a significant positive relationship with green purchase intentions (Nekmahmud et al., 2022).



BRAND EXPERIENCES: WHY BUY WHEN YOU CAN BORROW?

With an average of £500 of unworn clothes in the closets of British women and an average of 40% of clothes not being worn in closets all over Europe, it seems fairly evident that we're generally very bad shoppers. We tend to buy on impulse because something's on sale, looks good on us in the shop, or even because sales staff talk us into it.

We also tend to buy for 'one day...'; you may not have any plans to go on holiday to Morocco, but you buy an elaborate silk kaftan because maybe you'll go there one day. Or you buy a stunningly beaded gown that's appropriate for the red carpet because maybe you'll get invited to a black tie event one day.

Whether it's for a major job interview you just landed, a big date you want to impress, or a wedding you need to attend, clothing rental sites are your go-to solution for finding pricey clothes and accessories you need right now, but may not ever need again in the future.

Admittedly, there are some environmental costs to clothing rental sites: there's a lot of dry cleaning and transportation involved – but it certainly beats buying pieces for just one or two wears, then having them just sit there in your wardrobe until you discard them. In fact, there are plenty of advantages: you save money, save on wardrobe space, and in a way, you do help to save the planet, since you only rent what you need, when you need it, and allow others to 'share' the item, rather than having all interested parties buy a dress and keep it for themselves.

There are a number of service providers who have emerged recently, each with a slight differentiation.

Take Le Tote, for instance. The US-based clothing subscription service styles and curates what you receive based on your own personal needs, and you can exchange and return your stuff every month – unless you fall in love with an item, that is! In that case, you can buy it for 50% off the retail price. This is the perfect solution for people moving towns for a short time, who don't want to pack up their entire wardrobes with them. It's also great for clothing junkies who love change, but the planet, too. Brands on offer include higher end ones like House of Harlow, Kate Spade and Calvin Klein, and high street brands like Free People and FCUK.

If you want to wear Elie Saab at your best friend's wedding, Dolce & Gabbana on the beach, and Chanel to a job interview – all for around the same price that you'd pay in tax if you bought those items new, Frontrow (based in the UK) offers an array of the world's most prestigious luxury brands to rent, allowing you to feel (and look) like you're totally minted.



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Style-Lend is a New York based peer-to-peer lending site which allows you to borrow or lend clothing for low prices. You can find all kinds of clothing and accessories here, and the guidelines for lenders is that their garments should be in great condition, less than 2 years old, and worth at least \$250 new.

HURR Collective is an economy sharing platform (that operates similarly to Airbnb) that allows women to make money from their under-utilised wardrobes, and also rent clothes and accessories for a fraction of the retail price. Not sure what to wear? They also have complimentary personal stylists on hand to help you look your best.

(Continued)

What if there was a way to find local clothing you can borrow – and maybe meet new people too? Darpedecade rather cheekily calls itself a *'Tinder for closets'*! Simply download the app to start swapping clothes with people near you. You'll be able to see who loves something in your virtual closet, and then the app will connect you to someone if they also have something in their wardrobe that you've got your eye on. Once the meeting is made, then you can decide to swap with that person or not. It's a great way of locating clothing you love locally and sharing with people whose taste is as good as your own. Who knows? You may even make a new friend! And the best is that it's usually 100% free, but you may need to negotiate with your swapper in case they want a damage deposit or something.

Glam Corner is an Australia-based service that offers nearly 10,000 outfits you can rent. There are some great, unique features of this site: they offer a styling service, where you can consult with a stylist online, by phone or in person to know what suits you best; you can try the clothes on before you commit, and Glam Corner also makes an effort to ensure that all sizes are catered to, from tiny to curvy.

If you want a bit of French girl chic in your life go online and take USA-based Armoire's quick quiz to see which clothing best suits your style and body type, and then start browsing for your perfect rental wardrobe. Armoire will have your selected pieces delivered right to your doorstep and picked up whenever you're ready to return the garments and accessories.

Finally, imagine if you could go shopping in an actual store, take an outfit away, and then return it the next day? That's kind of what EKOLUV offers. This Australian clothing rental and consignment site has an actual shop in Sydney where you can try clothing on before hiring it for up to 8 days, but of course, you can also do this online. Need some extra cash? You can also sell your own high-quality (preferably eco-) designer clothing on consignment. But maybe the best part about EKOLUV is this: of all the clothing rental sites, this is definitely the most eco-friendly, thanks to their specialty in conscious-fashion brands like Yama, Kowtow, Mettle/Fairtrade and Smile. This site is so ethical, in fact, that a percentage of its profits are donated to Opportunity International Australia to help empower women.

A SHORT LOOK BACK ON RECENT HISTORY

Our Common Future (Brundtland, 1987; aka The Brundtland Report) was a report prepared for the United Nations by a World Commission on Environment and Development headed by Gro Harlem Brundtland. Interestingly, she neither coined the term sustainability nor initiated the argument that growing global human impacts on non-human environments cannot be sustained. The report, however, did proffer the notion of 'environmentally sustainable development' and triggered many subsequent meetings, global gatherings and negotiations that built on this concept. She noted that as opposed to making recommendations for national governments to merely adopt, it was decided to highlight challenges that were transnational or global in scale and that sustainability is not something that could be left for governments to sort out because it affected the future of those who currently live on our planet as well as future generations.

The Rio Earth Summit, which took place in 1992, set out the Agenda 21 proposals, which many nations adopted. Following Rio, the stage was set for the Global Convention on Biological Diversity and various other agreements on helping to protect endangered wetlands and establish rules to prevent the degradation of marine environments.

An international protocol for reducing emissions of greenhouse gases was a task for the meeting in Kyoto in 1997. However, to try to phase out the use of fossil fuels is much harder than to replace the use of the gases that thin the ozone layer. The meeting in Copenhagen in 2009 was disappointing as governments continued to prioritise short-term national economic interests, until the Paris Summit in 2015, when things started to change and to once again gain pace.

Here we should have a look at the model from which the psychologist John Elkington (1994) first developed the notion of environmentally sustainable development by introducing the 'triple bottom line' (see Figure 14.1).

The need to balance competing policy and practice agendas in the present is very much highlighted here by Elkington. The greater challenge emanating out of this is to think beyond the short-term political or policy cycles (as some governments have been doing) or even lifetimes (as some generations have been doing!) and think about the legacy we are creating for the younger generation. Mulligan (2018) calls this 'intergenerational equity'. This is not the first time this concept has been used. The Incas of Peru, who are undoubtedly one of the most admired of the South American civilisations, also believed in intergenerational equity. They felt that any societal decision should be taken with three perspectives in mind:

1. How will this affect us, here and now?
2. How will our decision affect future, yet unborn, generations?
3. How would our departed loved ones have reacted to the decisions we are about to take?

It is an interesting way to view decision-making, especially in the context of sustainable consumption.

Following on from the triple bottom line, it's worth taking a brief look at other models that are in existence currently. Figure 14.2 shows 'the nested diagram' model. The main thrust of the argument presented by Giddings et al. (2002) is that as soon as the economy, society and the environment are separated from each other, this is where the problems arise. This is why they have preferred a 'nested' version of the diagram on sustainability.

But of course, when one refers to the very broad domain of 'social' it is hard to know what is included and what is not... thus, Hawkes (2001) argued that the cultural expression that humans portray as their sense of personal and social wealth is a vitally important 'pillar' to be able to build on, and thus proffered his 'fourth pillar' model (see Figure 14.3).

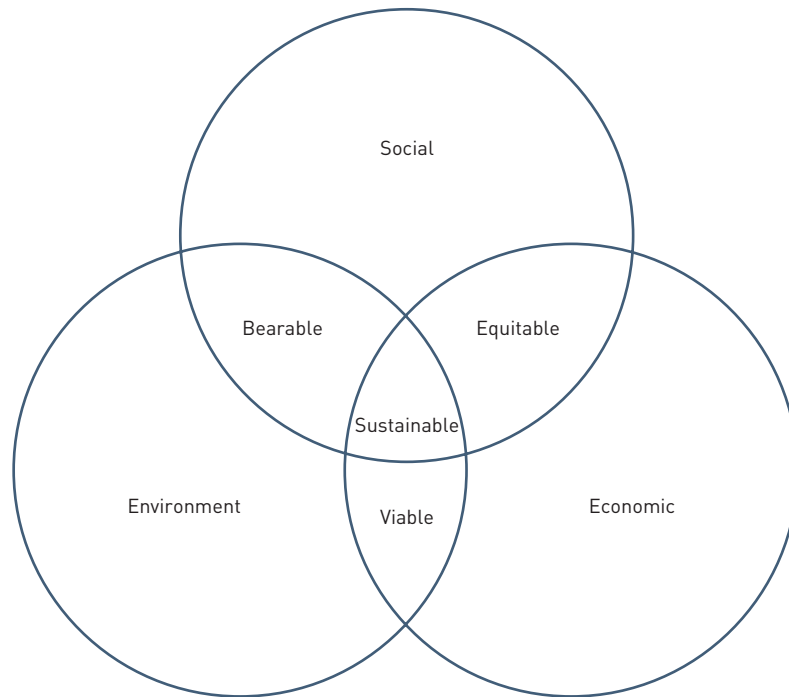


FIGURE 14.1 The 'triple bottom line' represented as three overlapping sectors

Source: Elkington (1994).

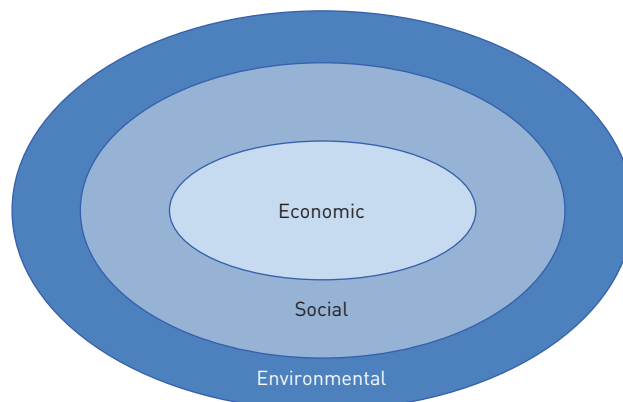


FIGURE 14.2 Nested diagram of sustainability

Source: Adapted from Giddings et al. (2002).

PRINCIPLES OF SUSTAINABLE CONSUMPTION

Arguably, there are a number of principles that form many more pillars of sustainable consumption. Here we take a brief look at some of them and leave the reader to make conclusions about the applicability of each to their consumer lives.

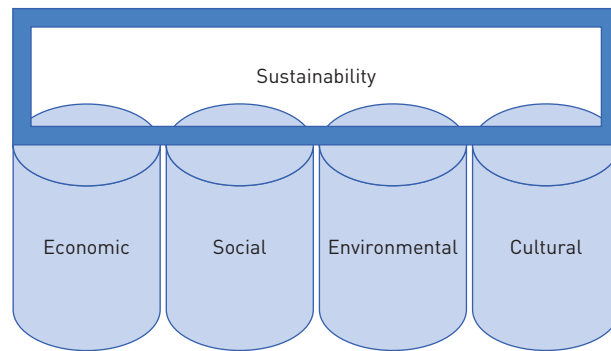


FIGURE 14.3 The fourth pillar of sustainability

Source: Representation of the work of Jon Hawkes (2001).

EARTH SYSTEM GOVERNANCE

Earth system governance is a recently developed paradigm that builds on earlier notions of environmental policy and nature conservation, but puts these into the broader context of human-induced transformations of the entire Earth system (Hofmann, 2022). It conceptualises the system of formal and informal rules, rule-making mechanisms and actor-networks at all levels of human society (from local to global) (and now artificial intelligence systems too [Bolton et al., 2021]) that are set up to steer societies towards preventing, mitigating and adapting to global and local environmental change and Earth system transformation, within the normative context of sustainable development.

ECOLOGICAL MODERNISATION

Ecological modernisation is a school of thought in the social sciences that argues that the economy benefits from moves towards environmentalism (Teelucksingh, 2018). It has gained increasing attention among scholars and policy-makers internationally (Leipold, 2021) in the last several decades. It is an analytical approach as well as a policy strategy and environmental discourse (Hajer, 1995). One basic assumption of ecological modernisation relates to environmental readaptation of economic growth and industrial development (Isik et al., 2018; Watts, 2018). On the basis of enlightened self-interest, economy and ecology (Sovacool et al., 2018) can be favourably combined: environmental productivity (Li and Zhang, 2018), that is, productive use of natural resources and environmental media (air, water, soil, ecosystems), can be a source of future growth and development in the same way as labour productivity (Lea, 2018) and capital productivity (Mamoon, 2018). This includes increases in energy and resource efficiency as well as product and process innovations such as environmental management and sustainable supply chain management (Huang and Huang, 2022; Taylor and Vachon, 2018), clean technologies (Kumar et al., 2022; Somorin et al., 2019), benign substitution of hazardous substances, and product design with the environment in mind (Al-Hamadani et al., 2021; Hassenzahl, 2018; Sroufe et al., 2000). On the point about clean technologies, it is worth noting that developing countries are faced with numerous energy challenges including the dilemma of increasing energy

services to billions of people who currently live without electricity, and the need to operate low-carbon, intensive energy systems for environmental sustainability. This said, all over the world countries are battling with energy crises (Siksnyte-Butkiene, 2022), for example currently in the UK (Wolf, 2022) in a post-Covid-19 environment (Heffron et al., 2021). Clean energy technologies can reduce fossil fuel dependency, provide jobs and play a central role in improving access to energy; however, there are questions on the availability, accessibility, reliability, affordability and appropriateness of these technologies in developing countries (Somorin et al., 2019).

HUMAN IMPACT ON THE ENVIRONMENT

Human, or anthropogenic, impact on the environment includes changes to biophysical environments and ecosystems (Slocumbe, 1993), biodiversity and natural resources (Kellert et al., 2000; Taketani et al., 2022) caused directly or indirectly by humans, including global warming (Salawitch et al., 2018), environmental degradation (Kutz, 2018) (such as ocean acidification), mass extinction and biodiversity loss, ecological crises and ecological collapse (Richards, 2022). Modifying the environment to fit the needs of society is causing severe effects, which has deteriorated as the problem of human overpopulation continues (Cafaro et al., 2022). There has been some talk recently that human overpopulation may well be a contributor to epidemics and pandemics (Spernovasilis et al., 2021). As we've alluded to earlier in the chapter, some human activities that cause damage (either directly or indirectly) to the environment on a global scale include human reproduction (Goudie, 2018; Qu et al., 2022), overconsumption, overexploitation, pollution and deforestation, to name but a few. Some of the problems, including global warming and biodiversity loss, pose an existential risk to the human race, and overpopulation causes those problems. Sir David Attenborough, in a speech called 'People and Planet' at the Royal Society of Arts in 2011, described the level of human population on the planet as a multiplier of all other environmental problems. In 2013, he described humanity as 'a plague on the Earth' that needs to be controlled by limiting population growth (The Telegraph, 2013).

For nearly three decades the UN has been bringing together almost every country on Earth for global climate summits – called COPs, which stands for 'Conference of the Parties'. In that time climate change has gone from being a fringe issue to a global priority. 2021 was the 26th annual summit – giving it the name COP26. With the UK as President, COP26 took place in Glasgow. In the run up to COP26 the UK worked with every nation to reach agreement on how to tackle climate change. World leaders arrived in Scotland, alongside tens of thousands of negotiators, government representatives, businesses and citizens for 12 days of talks. Not only was it a huge task, but it was also not just yet another international summit, with most experts believing that COP26 had a unique urgency.

To understand why, it's necessary to look back to another COP.

For the first time ever, something momentous happened: every country agreed to work together to limit global warming to well below 2 degrees and aim for 1.5 degrees, to adapt to the impacts of a changing climate and to make money available to deliver on these aims. The Paris Agreement was born. The commitment to aim for 1.5 degrees is important because every fraction of a degree of warming will result in the loss

of many more lives and livelihoods damaged. Under the Paris Agreement, countries committed to bring forward national plans setting out how much they would reduce their emissions – known as Nationally Determined Contributions, or ‘NDCs’. They agreed that every five years they would come back with an updated plan that would reflect their highest possible ambition at that time.

CRITICAL REFLECTION



The veteran naturalist and filmmaker Sir David Attenborough told world leaders at the COP26 climate summit to ‘rewrite our story’, and that future generations would judge them for their success or failure at the conference, which took place over two weeks in Glasgow, Scotland.

Speaking to an audience of delegates that included US President Joe Biden, Canadian Prime Minister Justin Trudeau and German Chancellor Angela Merkel, Attenborough said the climate emergency ‘comes down to a single number: the concentration of carbon in our atmosphere’.

Accompanied by footage showing the atmospheric concentration of carbon dioxide at its current level of 414 parts per million, Attenborough pointed out that CO₂ ‘greatly determines global temperature ... and the changes in that one number is the clearest way to chart our own story’.

‘We need to rewrite our story to turn this tragedy into a triumph’, he continued. ‘We are after all the greatest problem-solvers to have ever existed on earth. We now understand this problem. We know how to stop the number rising and put it in reverse. We must halt carbon emissions this decade.’

Attenborough, who strode to the stage with a purpose that belied his 95 years, delivered his speech along with a film that illustrated 300,000 years of atmospheric carbon dioxide levels, along with accompanying increases and decreases in average global temperatures. Also shown were climate activists from around the world, with messages of concern and hope.

The broadcaster emphasised the fact that, little more than 10,000 years before the present day, the Earth’s climate stabilised, allowing human civilisation to flourish.

‘Everything we’ve achieved in the last 10,000 years was enabled by the stability during this time’, he said, showing that the climate had not wavered by more than plus or minus one degree Celsius over the period.

But now, Attenborough stressed, conditions are changing rapidly thanks to human activity.

‘Our burning of fossil fuels, our destruction of nature, our approach to industry, construction and learning are releasing carbon into the atmosphere at an unprecedented pace and scale’, he said. ‘We are already in trouble. The stability we all depend on is breaking.’

He went on to say: ‘those who’ve done the least to cause this problem are being the hardest hit’, pointing out that the poorest countries that have released the least CO₂ into the atmosphere are those bearing the brunt of extreme weather events made more severe by climate change.

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Attenborough concluded, however, with an upbeat message. 'We must use this opportunity to create a more equal world, and our motivation should not be fear, but hope', he said. To avert further instability, the international community must focus on keeping temperature change within 1.5 degrees Celsius this century, as prescribed by the UN's Intergovernmental Panel on Climate Change. To achieve that would require 'a new industrial revolution, powered by millions of sustainable innovations'.

'It comes down to this', he said. 'The people alive now [and] the generation to come will look at this conference and consider one thing: did that number [atmospheric CO₂ concentration] stop rising and start to drop as a result of commitments made here? There's every reason to believe that the answer can be yes.'

Source: Adapted from Vetter (2021). For more data and insights see forbes.com.

Some deep ecologists, such as the radical thinker and polemicist Pentti Linkola, see human overpopulation as a threat to the entire biosphere (Kearney, 2022; van Pelt, 2018). In 2017, over 15,000 scientists around the world issued a second warning to humanity which asserted that rapid human population growth is the 'primary driver behind many ecological and even societal threats' (Independent, 2017). The years 2023–50 are crucial for the natural world: a new international agreement will be agreed to combat global biodiversity loss. The post-2020 Global Biodiversity Framework is intended to ensure that by 2050, humans are living in harmony with nature. The UN has also called for greater funding for nature conservation.

SOCIAL SUSTAINABILITY

Social life is the least defined and least understood of the different ways of approaching sustainability and sustainable development. Social sustainability has had considerably less attention in public dialogue than economic and environmental sustainability.

There are several approaches to sustainability. The first, which posits a triad of environmental sustainability, economic sustainability and social sustainability (as seen in Figure 14.1), is the most widely accepted as a model for addressing sustainability. The concept of 'social sustainability' in this approach encompasses such topics as social equity (Hamilton et al., 2018), livability (Beggs, 2018), health equity (Parkinson, 2018; Patenaude et al., 2022), community development (Pratt, 2021; Tolbert and Schindel, 2018), social capital (Adams, 2018; Giovannetti et al., 2021), social support (Erman, 2019; Parahiyanti and Nurmalita, 2022), human rights (Fabre, 2018; Nunes, 2022), labour or workers' rights (Wilson et al., 2018), placemaking (Sepulveda, 2018), social responsibility (Malecki, 2018; Turker, 2018), social justice (Morrisey and Walker, 2018), cultural competence (Alviar-Martin, 2018), community resilience (Aguñaga et al., 2018) and human adaptation (Fox, 2018), especially after the Covid-19 pandemic (Frey et al., 2021).

A second, more recent, approach suggests that all of the domains of sustainability are social, including ecological, economic, political and cultural sustainability. These domains of social sustainability are all dependent upon the relationship between the social and the natural, with the 'ecological domain' defined as human embeddedness in the environment and the built environment (Soust-Verdaguer et al., 2022). In these terms, social sustainability encompasses all human activities. It is not just relevant to the focused intersection of economics, the environment and the social.

ENVIRONMENTALISM

Environmentalism, or environmental rights (see Carter [2018] for recent information on ideas, activism and policy), is a broad philosophy, ideology and social movement regarding concerns for environmental protection and improvement of the health of the environment, particularly as the measure for this health seeks to incorporate the impact of changes to the environment on humans, animals, plants and non-living matter (Guim and Livermore, 2021). While environmentalism focuses more on the environmental and nature-related aspects of green ideology and politics, ecologism combines the ideology of social ecology and environmentalism. 'Ecologism' is more commonly used in continental European languages, while 'environmentalism' is more commonly used in English but the words have slightly different connotations.

Environmentalism advocates the preservation, restoration and/or improvement of the natural environment, and may be referred to as a movement to control pollution or protect plant and animal diversity. For this reason, concepts such as a land ethics, environmental ethics, biodiversity, ecology and the biophilia hypothesis figure predominantly.

At its crux, environmentalism is an attempt to balance relations between humans and the various natural systems on which they depend, in such a way that all the components are accorded a proper degree of sustainability. The exact measures and outcomes of this balance are controversial and there are many different ways for environmental concerns to be expressed in practice. Environmentalism and environmental concerns are often represented by the colour green, but this association has been appropriated by the marketing industries for the tactic known as **greenwashing**.

Greenwashing

A compound word modelled on 'whitewash'; also called 'green sheen', greenwashing is a form of spin in which green PR or green marketing is deceptively used to promote the perception that an organisation's products, aims or policies are environmentally friendly

GREENWASHING

There are many definitions of 'greenwashing' that exist (see Table 14.2). Research shows that significant deception and misleading claims exist both in the regulated commercial sphere, as well as in the unregulated non-commercial sphere (e.g. governments, NGO partnerships, international pledges, etc.). Recently, serious concerns have been raised over rampant greenwashing, in particular with regard to rapidly emerging net zero commitments (Nemes et al., 2022).

TABLE 14.2 Definitions of greenwashing

‘The act of disseminating disinformation to consumers regarding the environmental practices of a company or the environmental benefits of a product or service’	Baum, L.M. (2012) It’s not easy being green or is it? A content analysis of environmental claims in magazine advertisements from the United States and United Kingdom. <i>Environ. Commun.</i> , 6: 423–40.
‘Greenwashing refers to the practice of falsely promoting an organisation’s environmental efforts or spending more resources to promote the organisation as green than are spent to actually engage in environmentally sound practices. Thus, greenwashing is the dissemination of false or deceptive information regarding an organisation’s environmental strategies, goals, motivations, and actions’	Becker-Olsen, K. and Potucek, S. (2013) Greenwashing. In S.O. Idowu, N. Capaldi, L. Zu and A. Das Gupta (eds), <i>Encyclopedia of Corporate Social Responsibility</i> . Berlin/Heidelberg: Springer. pp 1318–23.
‘Disinformation disseminated by an organisation so as to present an environmentally responsible public image’	Oxford English Dictionary (2003) <i>Concise Oxford English Dictionary</i> , 10th edn, J. Pearsall (ed.). Oxford: Oxford University Press.
‘Greenwashing is when a company or organisation spends more time and money on marketing themselves as environmentally friendly than on minimizing their environmental impact. It is a deceitful advertising gimmick intended to mislead consumers who prefer to buy goods and services from environmentally conscious brands’	Corcione, A. (2020) What is greenwashing? <i>Business News Daily</i> . www.businessnewsdaily.com/10946-greenwashing.html (accessed 17 February 2022).
‘(1) The phenomenon of socially and environmentally destructive corporations attempting to preserve and expand their markets by posing as friends of the environment and leaders in the struggle to eradicate poverty. (2) Environmental whitewash. (3) Any attempt to brainwash consumers or policy makers into believing polluting mega-corporations are the key to environmentally sound sustainable development (4) Hogwash’	CorpWatch (2001) <i>Greenwash Fact Sheet</i> . www.corpwatch.org/article/greenwash-fact-sheet (accessed 17 February 2022).
‘greenwashing is taken to mean two main things. It can be when companies – usually mega corporations and sometimes politicians – try to hide or cover up their less-than-stellar environmental records with a grand, public gesture towards green causes; the other type of greenwashing is where companies and brands use words like “green”, “sustainable”, “eco-friendly”, or “vegan” simply as a marketing ploy, without any deep interrogation over what those terms actually mean. And crucially – without any accountability for their actions’	De Ferrer, M. (2020) What is greenwashing and why is it a problem? <i>Euronews</i> . www.euronews.com/green/2020/09/09/what-is-greenwashing-and-why-is-it-a-problem (accessed 17 February 2022).
The authors note two different major classifications of greenwashing, including ‘product/service level claim greenwashing, which uses textual arguments that explicitly or implicitly refer to the ecological benefits of a product or service to create a misleading environmental claim’ while ‘executional greenwashing suggests nature-evoking elements such as images using colors (e.g., green, blue) or sounds (e.g., sea, birds). Backgrounds representing natural landscapes (e.g., mountains, forests, oceans), or pictures of endangered animal species (e.g., pandas, dolphins) or renewable sources of energy (e.g., wind, waterfalls) are examples of executional nature-evoking elements’	De Freitas Netto, S.V., Facao Sobrãl, M.F., Bezerra Riberio, A.R. and da Luz Soares, G.R. (2020) Concepts and forms of greenwashing: A systematic review. <i>Environ. Sci. Eur.</i> , 32: 19.
‘the act of misleading consumers regarding the environmental practices of organisations (firm-level greenwashing) or the environmental benefits of a product or service (product-level greenwashing)’	Delmas, A.M. and Burbano, V.C. (2011) The drivers of greenwashing. <i>Calif. Manag. Rev.</i> , 54: 64–87.

<p>'Greenwashing is the process by which organisations spread misleading perceptions about their products or services that suggest they are more environmentally responsible than is the reality. The practice of greenwashing is used regularly by corporations, governments, and other entities to deceive the public into believing that they are doing more for the environment than they truly are in order to gain better public perception'</p>	<p>Ecolife (n.d.) What is greenwashing? <i>Ecolife Dictionary</i>. www.ecolife.com/define/greenwashing.html (accessed 17 February 2022).</p>
<p>'Greenwashing is used to describe the practice of companies launching adverts, campaigns, products, etc. under the pretence that they are environmentally beneficial, often in contradiction to their environmental and sustainability record in general'</p>	<p>Ethical Consumer (2020) What is greenwashing. www.ethicalconsumer.org/transport-travel/what-greenwashing (accessed 17 February 2022).</p>
<p>'The expressions "environmental claims" and "green claims" refer to the practice of suggesting or otherwise creating the impression (in a commercial communication, marketing or advertising) that a good or a service has a positive or no impact on the environment or is less damaging to the environment than competing goods or services. This may be due to its composition, how it has been manufactured or produced, how it can be disposed of and the reduction in energy or pollution expected from its use. When such claims are not true or cannot be verified, this practice is often called "greenwashing". "Greenwashing" can relate to all forms of business-to-consumer commercial practices concerning the environmental attributes of goods or services. According to the circumstances, this can include all types of statements, information, symbols, logos, graphics and brand names, and their interplay with colours, on packaging, labelling, advertising, in all media (including websites) and made by any organisation, if it qualifies as a "trader" and engages in commercial practices towards consumers'</p>	<p>European Commission (2016) <i>Guidance on the Implementation/Application of Directive 2005/29/EC Unfair Commercial Practices. SWD (2016) 163 Final</i>. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016SC0163&from=FR (accessed 17 February 2022).</p>
<p>'Greenwashing is the process of conveying a false impression or providing misleading information about how a company's products are more environmentally sound. Greenwashing is considered an unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly'</p>	<p>Kenton, W. (2021) Greenwashing. <i>Investopedia</i>. www.investopedia.com/terms/g/greenwashing.asp (accessed 17 February 2022).</p>
<p>'greenwash can be characterized as the selective disclosure of positive information about a company's environmental or social performance, while withholding negative information on these dimensions'</p>	<p>Lyon, T.P. and Maxwell, J.W. (2011) Greenwash: Corporate environmental disclosure under threat of audit. <i>J. Econ. Manag. Strategy</i>, 20: 3–41.</p>
<p>'the word greenwash is used to cover any communication that misleads people into adopting overly positive beliefs about an organisation's environmental performance, practices, or products; the important phenomenon of misleading environmental communication'</p>	<p>Lyon, T.P. and Montgomery, A.W. (2015) The means and end of greenwash. <i>Organ. Environ.</i>, 28: 223–49.</p>
<p>'Greenwashing is the practice of promoting environmentally friendly programs to deflect attention from an organisation's environmentally unfriendly or less savoury activities'</p>	<p>Marquis, C. and Toffel, M.W. (2011) <i>The Globalization of Corporate Environmental Disclosure: Accountability or Greenwashing?</i> Cambridge, MA: Harvard School of Business. HBS Working Paper Number: 11–115.</p>
<p>Focus on 'executional greenwashing whereby nature-evoking elements in the ad execution may induce false perceptions of a brand's greenness, whether intentionally or not on the part of the advertiser'</p>	<p>Parguel, B., Benoit-Moreau, F. and Russell, C.A. (2015) Can evoking nature in advertising mislead consumers? The power of 'executional greenwashing'. <i>Int. J. Advert.</i>, 34: 107–34.</p>

(Continued)

TABLE 14.2 (Continued)

'Greenwashing is the unjustified appropriation of environmental virtue by a company, an industry, a government, a politician or even a non-government organisation to create a pro-environmental image, sell a product or a policy, or to try and rehabilitate their standing with the public and decision makers after being embroiled in controversy'	Sourcewatch (n.d.) Greenwashing. The Center for Media and Democracy. www.sourcewatch.org/index.php/Greenwashing [accessed 17 February 2022].
'The act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service'	Sustainable Furnishings Council (n.d.) Glossary. https://sustainablefurnishings.org/glossary [accessed 17 February 2022].
'Communication that misleads people (e.g., consumers and stakeholders) regarding environmental performance/benefits by disclosing negative information and disseminating positive information about an organisation, service, or product'	Tateishi, E. (2018) Craving gains and claiming 'green' by cutting greens? An exploratory analysis of greenfield housing developments in Iskandar Malaysia. <i>J. Urban Aff.</i> , 40: 370–93.

Source: Adapted from Nemes et al. [2022].

Back in the mid-1980s, Chevron (an oil company) commissioned advertising to convince its public of its supposed exemplary environmental credentials. The campaign, titled 'People Do', showed Chevron employees protecting bears, butterflies, sea turtles and all manner of cute and cuddly animals. These were fantastically effective commercials and in 1990 they won an Effie Advertising Award, with the result that they also found their way into becoming a Harvard Business School case study. Amongst environmentalists, however, these advertisements became notorious for being the *gold standard* of greenwashing: the corporate practice of making diverting sustainability claims to cover up a questionable environmental record.

Jay Westerveld first noted the term greenwashing in 1986. These were the days when most (if not all) consumers received their news from television, radio and print media. These were the same channels that organisations regularly flooded with a wave of high-priced, slickly produced commercials and print ads. So the combination of limited public access to information and seemingly unlimited advertising enabled companies to present themselves as caring environmental stewards, even as they were engaging in environmentally unsustainable practices.

Chevron had quite a murky environmental record, which the 'People Do' campaign ignored. At the same time as the adverts were running on a plethora of media outlets, the company was also violating the Clean Air Act, the Clean Water Act and spilling oil into wildlife refuges. Of course Chevron was not the only company digging deep into the greenwashing basket of *suitable clothes*. At around the same time, DuPont (a chemical company) announced its new double-hulled oil tankers with ads featuring marine animals clapping their flippers and wings in chorus to Beethoven's 'Ode to Joy'. Friends of the Earth were quick to point out in their report 'Hold the Applause' that DuPont was the single largest corporate polluter in the USA. Other examples of corporate claims include Weyerhaeuser (a giant in the forestry sector). The company commissioned adverts claiming that it was '*serious*' about caring for fish, even as it was cutting down trees in some of its forests and destabilising salmon habitats!

Since then, consumers have become very aware of global sustainability concerns. This interest in the environment has also triggered an increased awareness of the greenwashing at play. Not surprisingly, the sustainability imperative has been driven

primarily by the consumer. A few forward-thinking retailers such as Patagonia and Levi's have been pioneers in this field and should get the credit they deserve for giving conscious consumerism a bigger platform. Yet it's the consumer – specifically the Gen Z consumer – that has elevated the sustainability conversation. A recent study found that the Gen Z consumer has an outsized influence on not only their Gen X parents but even their Boomer grandparents when it comes to sustainable shopping (Petro, 2022). Over the past two years, Gen X consumers' preference to shop for sustainable brands increased by nearly 25% and their willingness to pay more for sustainable products increased by 42%. In fact, consumers across all generations – from Baby Boomers to Gen Z – are now willing to spend more for sustainable products. Just two years ago, only 58% of consumers across all generations were willing to spend more for sustainable options. Today, nearly 90% of Gen X consumers said that they would be willing to spend an extra 10% or more for sustainable products, compared to just over 34% two years ago.

Engaging customers in their sustainability efforts is top of the list for many companies – even as their core business model remains environmentally unsustainable. The Home Depot (an American home improvement supplies retailer) and Lowe's (a hardware store), for example, both encourage customers to do their part by offering onsite recycling for several products, including compact fluorescent lights and plastic bags. Meanwhile, they continue to sell billions of dollars worth of environmentally damaging products per year, such as paints that are loaded with toxic ingredients and which release noxious fumes, and taun flooring which, in its production, causes devastation to indigenous land in Papua New Guinea (Global Witness, 2017).

Finally, for fans of greenwashing exposé, we now have a Greenwashing Index Score. There are five criteria upon which the score is based. When you rate an ad with the Greenwashing Index, it will generate a score based on your response to a set of statements (see Table 14.3). Your score will be included in the ad's overall score, and your comments will be added to the tally. Scoring is similar to golf: high scores are undesirable (for the advertiser).

TABLE 14.3 The Greenwashing Index Scoring Criteria

1	The ad misleads with words	Do you believe the ad misleads the viewer/reader about the company's/product's environmental impact through the things it says? Does it seem the words are trying to make you believe there is a green practice when there isn't? Focus on the words only – what do you think the ad is saying?
2	The ad misleads with visuals and/or graphics	Do you think the advertiser has used green or natural images in a way designed to make you think the product/company is more environmentally friendly than it really is?
3	The ad makes a green claim that is vague or seemingly unprovable	Does the ad claim environmental benefits without sufficiently identifying for you what they are? Has the advertiser provided a source for claims or for more information? Are the claims related to the company/product?
4	The ad overstates or exaggerates how green the product/company/service actually is	Do you believe the advertiser is overstating how green the product/company actually is? Are the green claims made by the ad believable? Do you think it's possible for the product/company to do the things depicted/stated?
5	The ad leaves out or masks important information, making the green claim sound better than it is	Do you think the ad exists to divert attention from something else the company does? Do you believe the relevant collateral consequences of the product/service are considered in the ad? Does it seem to you something is missing from the ad?

Source: Adapted from www.greenwashingindex.com [2018].

CONSUMPTION

Under the banner of consumption, we once again see a number of cornerstones that the reader needs to be aware of, so that a considered analysis of their applicability to sustainable consumption can take place based on the context of a given situation.

ANTI-CONSUMERISM

Let's start with anti-consumerism, which is a socio-political ideology that is opposed to consumerism, the continual buying and consuming of material possessions (Lekakis, 2021). Anti-consumerism is concerned with the private actions of business corporations in pursuit of financial and economic goals at the expense of the public welfare, especially in matters of environmental protection, social stratification and ethics in the governing of a society. In politics, anti-consumerism overlaps with environmental activism, anti-globalisation and animal rights activism; moreover, a conceptual variation of anti-consumerism is post-consumerism, living in a material way that transcends consumerism. Faria and Hemais (2018) have historicised this well.

Anti-consumerism arose in response to the problems caused by the long-term mistreatment of human consumers and of the animals consumed, and from the incorporation of consumer education into school curricula. Examples of anti-consumerism are the book *No Logo* (2000) by Naomi Klein, and documentary films such as *The Corporation* (2003) by Mark Achbar and Jennifer Abbott, and *Surplus: Terrorized into Being Consumers* (2003) by Erik Gandini; each made anti-corporate activism popular as an ideologically accessible form of civil and political action.

ECOLOGICAL FOOTPRINT

The ecological footprint measures human demand on nature, that is the quantity of nature it takes to support people or an economy. It tracks and regulates (Ahmed et al., 2022) this demand through an ecological accounting system. The accounts contrast the biologically productive area people use for their consumption to the biologically productive area available within a region or the world (biocapacity – the productive area that can regenerate what people demand from nature). In short, it is a measure of human impact on Earth's ecosystem and reveals the dependence of the human economy on natural capital. The ecological footprint is defined as the biologically productive area needed to provide for everything people use: fruits and vegetables, fish, wood, fibres, absorption of carbon dioxide from fossil fuel use, and space for buildings and roads.

Footprint and biocapacity can be compared on an individual, a regional, a national or a global scale. Both footprint and biocapacity change every year with number of people, per person consumption, efficiency of production and productivity of ecosystems. On a global scale, footprint assessments show how big humanity's demand is compared to what planet Earth can renew. Global Footprint Network calculates the ecological footprint from UN and other data for the world as a whole and for over 200 nations. They estimate that as of 2013, humanity has been using natural capital 1.6 times as fast as nature can renew it.

OVERCONSUMPTION

Overconsumption is a situation where resource use has outpaced the sustainable capacity of the ecosystem. A prolonged pattern of overconsumption leads to environmental degradation and the eventual loss of resource bases. Generally, the discussion of overconsumption parallels that of human overpopulation; that is, the more people, the more consumption of raw materials takes place to sustain their lives. But humanity's overall impact on the planet is affected by many factors besides the raw number of people. Their lifestyle (including overall affluence and resource utilisation) and the pollution they generate (including carbon footprint) are equally important. The developing world is a growing market of consumption. These nations are quickly gaining more purchasing power and it is expected that the Global South, which includes cities in Asia, Latin America and Africa, will account for 56% of consumption growth by 2030 (McKinsey, 2016). This means that consumption rates will plateau for the developed nations and shift more into these developing countries.

SIMPLE LIVING

Simple living encompasses a number of different voluntary practices to simplify one's lifestyle (Kraisornsuthasinee and Swierczek, 2018; Read et al., 2018). These may include, for example, reducing one's possessions, generally referred to as minimalism, or increasing self-sufficiency. Simple living may be characterised by individuals being satisfied with what they have rather than want (Freud, 2018). Although asceticism generally promotes living simply and refraining from luxury and indulgence, not all proponents of simple living are ascetics. Simple living is distinct from those living in forced poverty, as it is a voluntary lifestyle choice.

Adherents may choose simple living for a variety of personal reasons, such as spirituality, health, increase in quality time for family and friends, work-life balance, personal taste, financial sustainability, frugality, or reducing stress. Simple living can also be a reaction to materialism and conspicuous consumption. Some cite socio-political goals aligned with the environmentalist, anti-consumerist or anti-war movements, including conservation, degrowth, social justice and tax resistance.

HYPERCONSUMPTION

Having looked at simple living, it is only right to go to the other end of the spectrum with hyperconsumption. This refers to the consumption of goods for non-functional purposes and the associated significant pressure to consume those goods exerted by the modern, capitalist society, as those goods shape one's identity (Cyr and Jagos, 2019; Kazim, 2018). Lunning (2010) defines it curtly as '*a consumerism for the sake of consuming*'. Hyperconsumerism is fuelled by brands (Bosco, 2014), as people often form deep attachment to product brands, which affects people's identity, and which pressure people to buy and consume their goods. Another of the characteristics of hyperconsumerism is the constant pursuit of novelty, encouraging consumers to buy new and discard the old, seen particularly in fashion, where the product life cycle can be very short, measured sometimes in weeks only. In hyperconsumerism, goods are often status symbols, as individuals buy them not so much to use them as to display them to others, sending associated meanings (such as displaying wealth).

However, the need to consume in hyperconsumption society is driven less by competition with others than by their own hedonistic pleasure (see Chapter 5). Finally here, hyperconsumerism has also been said to have religious characteristics (Lyon, 2013), and to have been compared to a new religion that enshrines consumerism above all, with elements of religious life being replaced by consumerist life: (going to) churches replaced by (going to) shopping malls, saints replaced by celebrities, penance replaced by shopping sprees, desire for better life after death replaced by desire for better life in the present, and so on (Sayers, 2008). Sayers notes that hyperconsumerism has commercialised many religious symbols, giving an example of religious symbols worn as jewellery by non-believers.

SUSTAINABILITY MARKETING MYOPIA

Sustainability marketing myopia is a term used in sustainability marketing referring to a distortion stemming from the overlooking of socio-environmental attributes of a sustainable product or service at the expense of customer benefits and values. The idea of sustainability marketing myopia is rooted in conventional marketing myopia theory, as well as green marketing myopia.

The marketing myopia theory was originally proposed in 1960 by American economist Theodore Levitt. According to Levitt, marketers should not overlook the importance of company potential and product attributes at the expense of market needs; catering for market needs should receive first priority. A company, besides being technically sound and product-oriented, also needs to be customer-oriented in order to successfully cater for a market. Knowledge of customer needs and of innovations that can be implemented to maintain customer interest, as well as of how to adapt to the changing business market, is crucial. Marketing myopia has been highly influential in the formation of modern marketing theory, and was heeded by marketers to such an extent that some authors now speak of a 'new marketing myopia' stemming from too narrow a focus on the customer to the exclusion of other stakeholders.

Green marketing is the marketing of products that are presumed to be environmentally safe. In order to be successful, green marketing must fulfil two objectives: improved environmental quality and customer satisfaction. Misjudging either or overemphasising the former at the expense of the latter can be defined as green marketing myopia (or greenwashing, as we saw earlier). The marketing discipline has long argued that innovation must consider an intimate understanding of the customer, and a close look at green marketing practices over time reveals that green products must be positioned on a consumer value sought by targeted consumers. As such, successful green products are able to appeal to mainstream consumers or lucrative market niches and frequently command price premiums by offering 'non-green' consumer value (such as convenience and performance). When consumers are convinced of the desirable 'non-green' benefits of environmental products, they are more inclined to adopt them.

Sustainability marketing (Lloveras et al., 2022) aims at marketing sustainable products and services that 'satisfy customer needs and significantly improve the social and environmental performance along the whole life cycle', while increasing customer

value and achieving the company's objectives. In turn, sustainability marketing myopia is an exaggerated focus on the socio-ecological attributes of the product over the core consumer values, a distortion of the marketing process which is likely to lead to the product failing on the market or remaining confined in a small alternative niche. Just as an excessive focus on product attributes generates marketing myopia, and just as a single-minded focus on customers results in 'new marketing myopia', in both green and sustainability marketing an unbalanced strategy neglecting one aspect (namely, product attributes) is detrimental to the effectiveness of the marketing process. However, it is important to note that sustainability marketing myopia differs from green marketing myopia in that the former follows a broader approach to the marketing myopia issue, taking into account the social attributes of a product as well as the environmental ones. At the same time, sustainability marketing myopia encompasses sustainable services and product-related services, not products alone.

CONSUMER BEHAVIOUR IN ACTION: HYDROPONICS AND AQUAPONICS



As traditional agriculture comes under scrutiny due to its recounted adverse effects on the environment – depletion of natural resources, contamination of water sources, misuse of synthetic chemical inputs – and usable land for crops declines, growers are continuously looking for alternative and safer ways to grow plants while using less space. This has led to an explosive surge in soilless production systems within both small growers and large-scale commercial productions. At the forefront of soilless systems are hydroponics and aquaponics, both providing growers with many significant benefits to growing plants while minimising potentially dangerous environmental effects.

Hydroponics is a method of growing plants, without soil, that has been utilised for thousands of years. At first, it may seem contradictory to grow plants without any soil, but hydroponics is an intricate system that works better than the traditional method of growing plants in soil. For plants to flourish they need two things: a set of plant essential nutrients and water. Due to this, if the nutrients are provided within the water and delivered to the roots, there isn't any need to have soil present in the growing system. In a hydroponic growing system, a nutrient-charged, aquatic solution is flushed through the root zone to provide the plants with the resources needed for optimal growth. There are many benefits to using hydroponic grow systems: fewer resources are consumed, arable land isn't needed, and the harvestable plants are of higher quality than when grown using traditional methods. In the last 60 or 70 years, these benefits have increased the popularity of hydroponics, and have expanded the limited possibilities of indoor and urban gardening.

Aquaponics is another innovative system of growing plants without any soil to support their root systems but is slightly different from hydroponics. Aquaponics is the combination of growing plants hydroponically and the practice of aquaculture (raising fish). Just as in hydroponics, plants in an aquaponics system are grown in a soilless environment. Instead of plants getting their nutrients from sources in the soil,

(Continued)

an aquatic solution provides the essential nutrients needed for plant growth directly to the roots, where efficient nutrient uptake can occur. However, instead of adding fertilisers to the water to provide nutrients, like what is done in hydroponics, fish are grown simultaneously in the aquatic environment to create a symbiotic relationship that results in an incredibly efficient system. In aquaponics, the fish provide a natural source of organic nutrients through their excreted waste; beneficial microbes convert the waste into usable nutrient sources for plants; the plants in turn naturally filter the water, providing a clean living environment for the fish and microbes. In aquaponics, the microbes convert the ammonia from the fish waste into nitrites and then into nitrates. Plants then take in the nitrates through their roots using them as a source for plant essential nitrogen. This combination of hydroponics and aquaculture allows aquaponics to draw upon the benefits of both systems while minimising the individual drawbacks of each.

Since aquaponics is the combining of concepts from hydroponics and aquaculture, it's clear the two systems have many similarities that make them both beneficial.

- Longer growing season than traditional gardening.
- Lessened negative environmental impacts.
- Plants grow faster.
- Higher yields.

Growing plants in soilless systems is becoming increasingly popular and provides the grower with many distinct advantages over traditional methodology. Two basic systems are popular amongst homeowners: hydroponics that solely grows plants within its contained system, and aquaponics which combines hydroponics with raising fish. Both systems have similarities and differences that must be considered before starting a project of this scale. While many believe aquaponics is the better option mostly because of its sustainability, both have distinct advantages over growing plants in a soil-based garden.

SUMMARY

In summary, readers of this chapter have been given a very small taste of some of the key issues in sustainability. This is a vast area that is continually developing, and thus trying to include everything relevant would be a futile exercise. However, we are reminded about the Sustainability Principles published by RMIT University in Australia (Mulligan, 2018), and we believe that these summarise the way forward perfectly – so much so that we've listed them here as the key points below.



KEY POINTS

- Acknowledge interconnections at all levels within the biosphere.
- Acknowledge that there are limits to growth.
- Remember that prevention is better than cure.

- Work to improve intergenerational equity.
- Face up to the challenges of intergenerational equity.
- Respect requisite diversity in both nature and culture.
- Work for relocalisation with global connectedness.
- Move from consumerism to quality-of-life goals.
- Learn how to travel hopefully in a world of uncertainty.

HOW TO IMPRESS YOUR EXAMINER

Your knowledge on ethical and sustainable consumption should be expressed using as many case examples as you can. You can exercise your very own personal consumer power to achieve better personal, social and environmental outcomes, and the examiner will be very interested in reading about these strategies!



REVIEW QUESTIONS

1. What lessons can be learnt from historic shifts in perception and attitudes towards sustainable consumption?
2. What part can consumers play in helping with climate change, resource depletion, environmental pollution, etc.?
3. What can the global society do to alleviate the struggles of 1 billion people who still do not have access to fresh water?
4. How, if at all, can food consumption be spread more equally amongst the developed and developing countries?
5. We have had the 2022 United Nations Climate Conference, more commonly referred to as COP27 – the 27th conference held in Sharm El Sheikh, Egypt, in November 2022. What happens now?
6. Would you download and use the Darpdecade app?
7. Which sustainability model is the most useful for our communities?
8. If we know that the human impact on the environment is significant, should we be prioritising what we should tackle first?
9. Social sustainability has many facets to it (as can be seen from the text earlier). Is any one facet more important than the other, and why?
10. Can you think of other examples of greenwashing from the online or offline media for any organisation of your choice?





CASE STUDY: SEA2SEE

I grew up in Africa; I'm an outdoors sort of a guy. It's sad to see the impact plastic waste has made on the environment. (Abeele, quoted in Breitnauer, 2021)

In 2015, when François van den Abeele was just starting to wear glasses, the choices were all virgin plastic. And he was following brands like O'Neill that were using recycled materials but there was nothing really in the optical industry. He felt he could do something.

After a Kickstarter campaign raised €39,000 (NZ\$64,965), social and environmental entrepreneur van den Abeele was able to fund his first collection and launched Sea2see in Barcelona, Spain in 2016 with a range of 18 'seastainable' sunglasses. Committed to a model of sustainable innovation and social responsibility, Sea2see was the first eyewear company to champion a vertically integrated sustainable business model, creating its own infrastructure for collecting marine plastic waste and then using it as a raw material to create high-quality frames. A lot of science has gone into it, understanding which polymers can be recycled and what method to use to get the best finish.



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Their objective has been to create a global consciousness in regard to the issues of ocean plastic contamination and the unsustainable optical and fashion industry. They have pioneered a *seastainable* change in the eyewear industry proving that marine plastic waste is a great source of raw material. Where others see waste, they see raw material. They've redesigned a supply chain where waste has value in order to create a sustainable and scalable solution that reduces marine plastic and improve the lives of marginalised coastal communities living in biodiversity hotspots of developing countries. Every second, 256 kg of plastic ends up in our oceans, so surely it must be time to act?!

We don't produce glasses or watches, but a statement of change, which can be worn by anybody willing to stand for our Oceans.

Sea2see frames are made in Italy exclusively from 100% marine plastic. The waste is up-cycled into a reusable raw material in the form of pellets called UPSEA™ PLAST. The material is Cradle to Cradle™ Gold Certified, combining a quality finish with durability, lightness and fashionable, modern appeal.

Today the award-winning brand has an extensive collection of over 250 ophthalmic and sun styles for men, women and junior with a lightweight contemporary design,

and a selection of looks, from fashion-oriented to timeless or sporty. The frames are stocked in leading independent optical retailers and well-known chains around the world that have committed to the promotion of their 'seastainable' values.

Their consumers are environmentally conscious and expect ecologically friendly materials, sustainable use of resources, reduced emissions and greater social commitments from the companies they support.

Sea2see has also teamed up with the famous photographer Weston Fuller in California, in a new campaign about ocean contamination. The powerful imagery reinforces the Sea2see legacy, its environmental message and the brand's commitment to the production of high-quality eyewear and watches, made exclusively from 100% recycled marine plastic. In this new campaign with Weston Fuller, a photographer who is passionate about environmental action, they wanted to raise awareness about the devastating impact of plastic in our oceans and encourage reflection on what we can do better as consumers to protect the world in which we live. The photographs show models standing in or near water, wearing Sea2see products whilst surrounded by plastic waste. The campaign connects with consumers through direct visual reminders of contamination in the sea. It also portrays the way in which Sea2see is successfully turning recycled waste into products that are uncompromising on quality and style.

In recent years, recycling at Sea2see has picked up pace in Africa in collaboration with a growing number of fishing communities in West Africa creating a new source of income for the plastic they collect, while also being involved in an activity with an immediate positive impact on the environment. Their involvement with communities in this region has led to a new collaboration launched in 2021 with Freetheslaves.net (Ghana) – www.freetheslaves.net/where-we-work/ghana/.

Sea2see is also committed to working with non-profit conservation organisations. In 2020, the brand partnered with @searchingforchinook creating a limited edition SFC recycled sunglasses edition, to support their project to save the orcas. @searchingforchinook is a two-part documentary led by Alexandra Johnston and Maria Nangle and produced by Dolphin Project Ambassador and actress Maisie Williams.

Their watch collection launched in retail and online from March 2021 with 22 individual watch models, produced in two sizes (41 mm and 37 mm).

Five years after creating its first 'seastainable' eyewear brand, Sea2see has earned B Lab's global B Corporation certification, awarded to companies meeting strict standards of social and environmental performance.

'We are proud to say that we are a certified B Corp, which for us means being part of a movement that isn't competing to be the best in the world, it is competing to be the best for the world. This certification represents a tremendous step for us as we mark our fifth anniversary and reflect on our progress to date', said Sea2see founder and CEO François van den Abeele.

The certification process is rigorous, said van den Abeele, providing answers to 300+ detailed questions on governance, workers, communities and impact on the environment. Companies who receive the certification are also required to undergo verification every three years, by demonstrating ongoing positive impact.

Source: Adapted from www.sea2see.org.

(Continued)

CASE STUDY QUESTIONS

1. What are the benefits of nurturing a sustainable ecosystem?
2. Do you support a sustainable consumption idea, product or service, and if so what is it?
3. How do the principles of sustainable consumption (honesty, prudence and responsibility) affect your shopping behaviour?
4. How important are these three character traits as a part of your sense of self?
5. Do you need to be rich to be sustainable?



FURTHER READING

For great online content on policy and practice, head over to the Lush website and read about their amazing work on sustainable consumption: <https://uk.lush.com/tag/our-policies>.

For an interesting read about the values and ethics behind some people's adoption of public bicycle-sharing schemes, look at J. Yin, L. Qian and A. Singhapakdi (2018) Sharing sustainability: How values and ethics matter in consumers' adoption of public bicycle-sharing scheme, *Journal of Business Ethics*, 149 (2): 313–32.

UNESCO actually provides three 'cautionary points' as regards defining sustainable consumption. More information can be found at www.unesco.org/education/tlsf/mods/theme_b/popups/mod09t06s07.html.

Finally, for a more in-depth read about the United Nations' 17 Goals to Transform Our World; go to www.un.org/sustainabledevelopment/.

MORE ONLINE

For additional materials that support this chapter and your learning, please visit:

<https://study.sagepub.com/sethna5e>

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