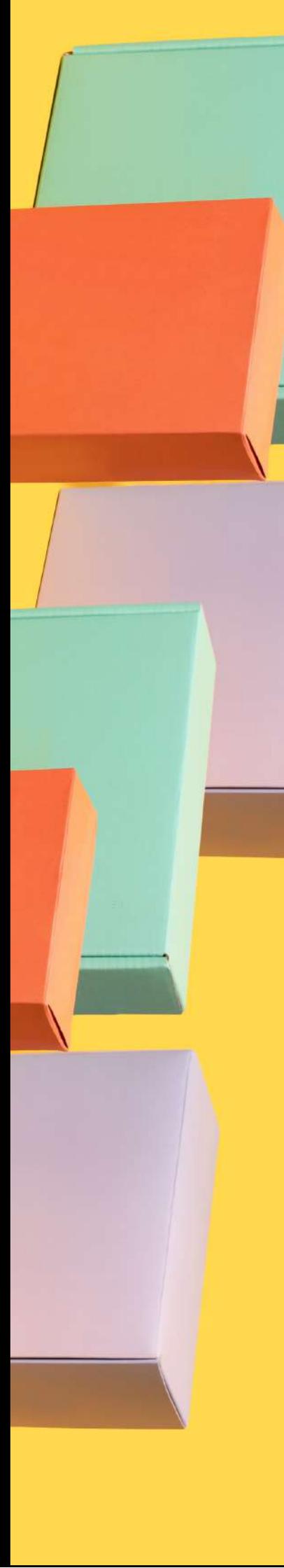MAY 2023

CIRCULARITY, NET ZERO AND PLASTIC

FUTURE OF PACKAGING ANNUAL REPORT 2023

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Contents

Chapter 1: Packaging Design and Interventions

Introduction

Making packaging sustainable is a complex problem that requires holistic solutions. Innovations in the retail packaging supply chain rely on legislation, the waste management infrastructure and consumers acting in the right way to ensure positive environmental outcomes. Research has an important role in identifying and testing possible solutions. While many large businesses will conduct their own research that tackles the specific issues they are facing, independent and academic research have the freedom to explore new ideas or issues that are relevant to a range of stakeholders.
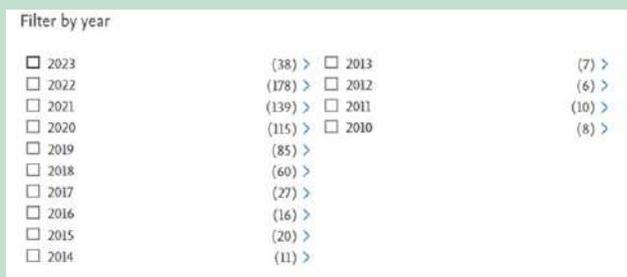
The interest in packaging sustainability within universities has grown in recent years. Figure 1 shows how published research articles in business journals on plastic and recycling or pollution topics has increased from a handful in the early 2010s to almost 180 published during 2022. This chapter summarises some recent papers. It starts with a reminder of the plastic pollution problem before providing examples of research relating to packaging design, including its role in facilitating a circular economy. The chapter then covers research on approaches to recording and reforming waste management systems in different countries. Finally, it reviews some examples of consumer research, including perceptions of sustainable packaging and household attitudes and behaviours.

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Figure 1: results of a Scopus database search on: "plastic and (recycling or waste or pollution)" in business and economics journals, 2010-2023

Plastic Pollution Update

It is worth having the occasional reminder of the environmental problems that the world needs to solve. Plastic pollution is not only something that endangers wildlife, it harms ecosystems to the extent that they do not function in a way that the planet needs for it to generate new life and sequester carbon from the atmosphere. In addition, while packaging becomes ever more recyclable, compostable or circular, and governments work on improving their collection and waste management systems, plastic pollution continues to increase.

A significant amount of the World's plastic waste is still being mismanaged – 22% according to the OECD.

A significant amount of the World's plastic waste is still being mismanaged – 22% according to the OECD (Organisation for Economic Cooperation and Development) [1]– while a further two-thirds was sent to landfill or incinerated (2019 figures, the most recently available data) [2].

WWF forecasts that ocean plastic pollution will quadruple by 2050 [3]. The impact of this will be 'significant ecological risks' with some seas 'already exceeding [an] ecologically dangerous threshold of microplastic concentrations'. WWF states that "unchecked plastic pollution will become a contributing factor to the ongoing sixth mass extinction leading to widespread ecosystem collapse". While ocean clean-up programmes are important for removing bigger pieces of plastic before they become impossible to clean up, one estimate suggests that it would have to run nonstop until 2150 to clean up a fraction of one percent of the total plastic in the ocean [4]. Research also continues to investigate the possible dangers to human health of exposure to toxic chemicals that come from plastic [5]. This especially affects lower income global communities at the end-of-life stage of plastic waste, either through pollution from burning or leaking into the environment.

Campaign groups acknowledge the work going on to address these problems but contend there is not enough urgency. Surfers Against Sewage state that current and planned interventions overemphasise 'product-specific policies', such as individual product bans and market restrictions[6]. Such approaches cannot tackle the development of new products and materials or 'the fundamental causes of plastic pollution'. Among its calls for action, Surfers Against Sewage advocates improved official data collection and reporting on plastic production, consumption, and mismanagement to aid better policy design. The pressure group suggest that such figures should include pollution by brand/producer, polymer, product category, and by hotspot location. This will help in the development of pollution reduction targets, using data from EPR (extended producer responsibility) and the Plastic Packaging Tax to establish targets for individual producers. The need for international treaties to standardise such approaches globally is also acknowledged.

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Academic research on 'the plastics crisis' has observed efforts by the World's largest companies to address the issue [7]. Analysis of voluntary commitments to reduce plastic pollution by 973 companies (made between 2015 and 2020) found that 72% of them had made some commitment to reduce plastic pollution. Around two-thirds of those companies made measurable and timebound commitments. They frequently emphasized recycling-related efforts and, while commitments on plastic pollution made by important companies are increasing, the research suggested that significantly more efforts are required to effectively address plastic pollution challenges.

The following chapter provides more analysis of how companies report on their environmental plans and achievements. However, the remainder of this chapter reviews some of the latest academic research that seeks to inform design strategies and understanding of waste systems and consumer behaviour.

Circular Design Strategies

The design of packaging has a large influence on its sustainability. The European Commission has estimated that more than 80% of all product-related environmental impacts are determined during a product's design phase.[8]

To maximise positive (or minimise negative) outcomes, every stage of the life cycle must be considered when designing a product. The Ellen Macarthur Foundation states that "To achieve their circular economy ambitions, organisations need to leverage design systemically." [9] This challenge has been the focus of several recent research papers that aimed to create guidance on circular design strategies.

A team of UK-based researchers used a systematic literature review of studies on circular packaging design to inform the development of a circular packaging design framework[10]. They note how waste management, materials, and the supply chain are all considerations in following circular economy principles. While zero waste is a purely circular outcome, the packaging industry's model is usually one where the product is designed, produced, consumed and then disposed of. While designers are encouraged to use waste free options, such as biodegrable or reusable materials, choosing the best strategy involves assessing the trade-offs relating to CO2 emissions from transport and the processes of disposal, reuse or recycling.

The circular design framework (figure 2) focuses on four design iterations, progressing through material selection, conception design, design development and design validation.
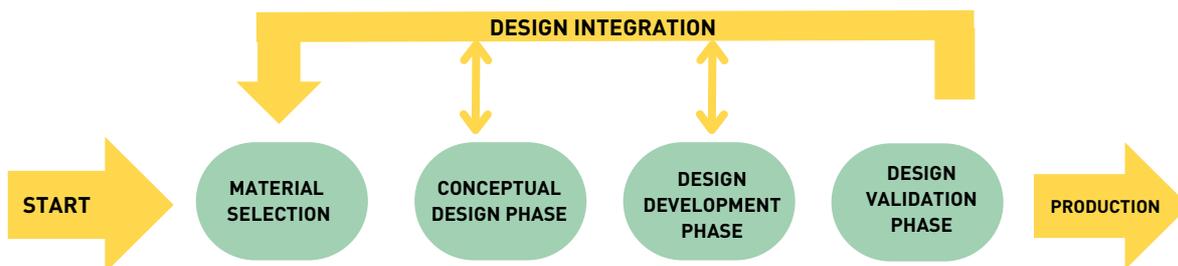
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Material selection reflects the circular strategy being followed, whether it is reusability, recyclability or the use of biodegradable materials. The conceptual design phase includes assessment of the practicalities of the chosen strategy. For reuse, it could involve estimating how many times a product is reused and the cumulative environmental impact. Other considerations include local context of supply, consumption or recycling facilities. The design development phase is more product specific with size, ease of use, maintenance and consumer considerations such as promotion and end-use. Finally, the design validation phase involves the use of assessment tools such as lifecycle analysis (LCA), circular economy indicators, cradle-to-cradle certification and material circularity indicators.

Figure 2: Circular packaging design framework (adapted from Ziu et al, 2022).

Assessing the impact of each design phase is complex and can require a daunting amount of data. Existing studies on specific problems within each phase could help manufacturers to prioritise the data they need to collect themselves. For example, a paper published last year in the journal Sustainability reported on life cycle assessments for various hygiene (e.g., shower gel) packaging designs, focusing on recyclability[11]. Using GaBi software and the Environmental Footprint method, researchers could focus on separate packaging components that impede recyclability, such as dark colour, specific material compounds, insoluble adhesives and large labels. Figure 3 shows the attributes that are deemed to be favourable for recycling for each aspect of package design.
The researchers were also able to measure the range of potential climate change impact of various configurations – from 0.13 kg CO_2-equivalent emissions (100% recyclability) to 0.21 kg CO_2-equivalent emissions (0% recyclability) per packaging.

Studies like this feed into design frameworks that assist organisations in circular product development. They help to create a shared understanding of the value of design within an organisation, enhancing cooperation between departments and across the value chain[12].

In addition, design frameworks help to provide an overview of a product's lifetime and aid testing and comparison between design strategies [13]. Franconi et al's 'Multi-Hierarchical Theoretical Framework' incorporates circular design strategies, phases within a product life cycle, and distinct, subsequent life cycles for a complete view of a product's existence.

Circular design strategies begin with the definition of precise objectives, which each have different connotations. Designing for longevity, for example, is a distinct type of objective from designing for reuse or recycling. Longevity incorporates ease of maintenance or repair while reuse requires the design of collaborative logistics, product standardisation and return incentives.

Recycling, as noted above, requires understanding of which materials are most appropriate. Franconi et al suggest that when objectives and strategies are more cohesive, with cooperation among stakeholders, the product is more likely to circulate for multiple cycles.

Figure 3: Packaging attributes influencing recyclability (Keller et al., 2022)

| Design process	Favorable attributes
Material choice	Monomaterial with existing recycling path
Color	Uncolored, clear, transparent
Adhesives	Water soluble
Labeling	Small surface, material identical to the main material

Within their framework, there is also a distinction between technical and non-technical strategies. While technical strategies, such as material selection and systems design, are clearly crucial aspects, it is important to recognise that design that enhances user satisfaction also has an impact on the achievement of circular objectives. This includes design for 'product attachment' and design for 'timeless aesthetics', that generate a sense of valuing the product so that it is reused or refurbished according to design intentions.

Figure 4 is a representation of the Multi-Hierarchical Design Framework. The top left image represents the stages of a single product life cycle, starting with the business and its network, through resources and production, logistics, sales, use and operations, maintenance and finishing with recovery. The second image shows that a product may go through multiple of these life cycles or loops, which may be like the first (e.g., reuse) or evolve into a new status such as second-hand product or materials to be recycled. The larger image brings the framework together. At the centre are the circular objectives (X1s), with design strategies (X2s and X3s) arranged according to each product/supply chain phase, noted according to the different life cycles in the outer loops.

Some examples provided in the paper include the following:

- Patagonia – apparel designed for longevity, repairability and reuse, including marketing to encourage second-hand use (design for repair, reuse and recycling).
- Bugaboo – closed-loop model to refurbish strollers at the end of first and second life cycles, then sold in an open-loop system as a second-hand product. (design for refurbish and reuse).
- Loop - partners with existing retailers to design packaging-free products that mostly use materials such as alloys (e.g., stainless steel), glass, and engineered plastics. The packaging is owned by the retailers and given as a service in a closed-loop system, enabling companies to invest in long lasting packs. All Loop's products are designed to be resistant to high temperature, chemicals and sanctification processes used during the reconditioning process that makes products commercially safe for users. At the end of the product lifetime, materials are recycled and can be reused again for the same purpose. (design for reuse and recycling).

Figure 4: The Multi-Hierarchical Design Framework (Franconi et al., 2022)
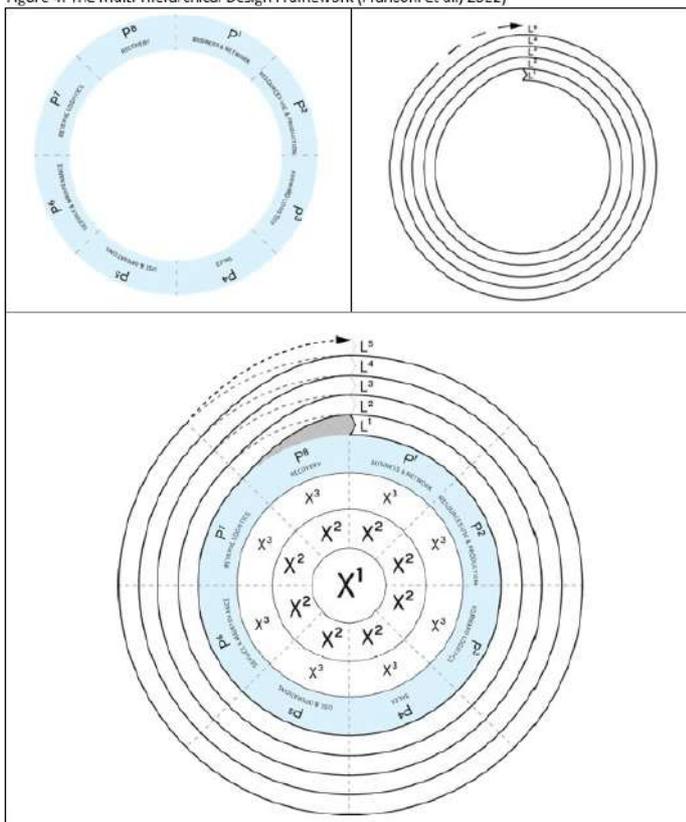
The framework offers a way for understanding how a business and its products interact along the supply chain, which can allow designers and managers to establish more effective product lifetime plans.
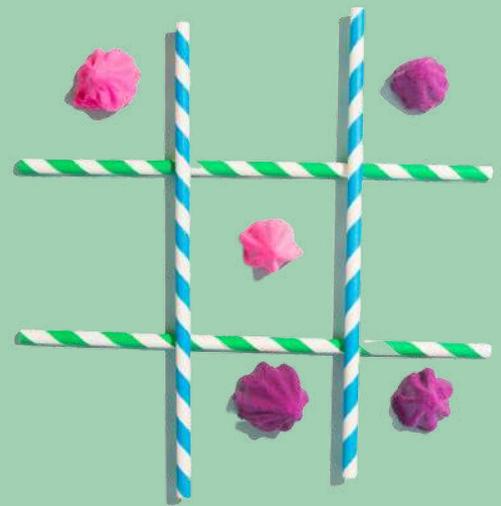
Interventions and Systems
System problems

The systematic design of circular packaging depends on effective systems for managing waste and reverse vending of packaging. Many research studies are motivated to identify problems and barriers within these systems, which operate at regional, national and international scales. Some recent examples, which are focused mostly on European recycling systems, highlight issues that are familiar in the UK. These include the need to boost plastic recycling rates so that there is more recycled plastic available to packaging manufacturers, and differences between countries' waste management systems, legislative arrangements and measurement methods. Papers also focus on issues at various points in the system and the need for standards such as emissions targets and food protection.

This found that intervention was needed to maximise demand for recycled plastics, maximise collection and sorting rates, and increase recycling capacity. The paper identified how interventions at different points in the value chain synergistically affect improvements in linear and circular material flows across the system. This highlights the need for coordinated changes to the entire recycling chain. For example, simulations found that the best circularity results came from combining either collection and sorting interventions or demand and capacity interventions, depending on the development of import/export flows.

For retailers and brand owners to achieve their ambitious targets on plastic reduction and packaging recyclability (see next chapter), they depend on policy makers to incentivise sustainable actions. A paper published last year in Resources, Conservation and Recycling shows that current pledges to use recycled PET (rPET) by 2025 amount to 2.066 million tons [14]. That would require the annual recycling growth rate for 2022-2025 to be double that of the growth achieved 2014-2018. These calculations also suggest that planned interventions like the widespread adoption of deposit return schemes will not be enough, especially considering increased demand from other industries.

Improving the efficiency and output of recycling systems cannot be done with a single act such as improving collections. It requires intervention at multiple stages in the system and, probably, a 'whole-systems' approach that encourages behaviour change by all involved. This is demonstrated in a stock-flow modelling analysis of the Finnish plastic recycling system[15].

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The global nature of the waste trade can cause unnecessary emissions and displace negative environmental externalities to other, lower income countries [16]. An article in Science of the Total Environment last year discussed the concept of 'small circles', which advocates managing waste within smaller geographical areas to reduce environmental burdens. Again, implementing such a strategy 'demands commitment from all stakeholders across the product value chain to extract value from the waste without jeopardizing sustainability goals'.

In addition, 'the use of recyclates must not result in less severe preventive consumer protection of food packaging materials'. A paper evaluating post-consumer recyclates [17] discusses the potential legislative quandry between strict standards that generate insurmountable barriers to using post-consumer recyclates and insufficient consumer protection of food packaging. With the EU's circular economy action plan requiring all plastic packaging to be reusable or recyclable by 2030, there is increasing urgency to develop systems that generate sufficient safe materials. The authors suggest that the European Food Safety Authority's criteria for post-consumer plastics (PET for bottles and trays) contacting food are extremely conservative and unrealistic. Worst-case assumptions for every evaluation step include: (i) concentrations of contaminants in the post-consumer input materials, (ii) cleaning efficiency of the superclean recycling process, and (iii) exposure to customers. It is argued that it is possible to maintain a conservative approach with more realistic criteria. A large increase in single-use bottles over the last 20 years has, according the study, reduced the risk of contamination significantly (for further information on this paper, see references).

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Academic research into industrial issues has the freedom to investigate from a broad perspective that allows learning across a variety of settings. This includes comparative studies that note differences in outcome, such as recycling rates, and then analyses potential explanations for those differences. For example, a comparative study, published in 2021 found higher capture rates for PET bottles in the Dutch (95%) and German (92%) systems, compared with Austria (64%), in terms of being successfully channelled into mechanical recycling routes[18]. The most notable difference in the national systems was the lack of deposit return scheme in Austria, which suggests a high potential for improvement in material circularity.

Comparative studies demand that the researchers identify criteria and measures that are reasonably equivalent, which can be difficult considering the complexities of any national system or value chain. Figure 5 shows the many elements of such a system, which serves as a useful guide when making comparisons.

The comparative analysis of the three countries led to the conclusion that none of these recycling economies represents a circular economy. This is because they lack "policy interventions that enforce design-for-recycling while simultaneously keeping stakeholders aligned". The paper also discusses the need to improve the scientific understanding of the recycling system for plastic packaging waste, focusing on the trade-off between quantity and quality of post-consumer recycled materials.

Lack of "policy interventions that enforce design-for-recycling while simultaneously keeping stakeholders aligned" prohibit creation of circular-economies.

Figure 5: System boundaries and overview of plastic packaging waste flow. DRS = deposit refund system; MBT = mechanical biological treatment plant. (Source: Picuno et al., 2021)
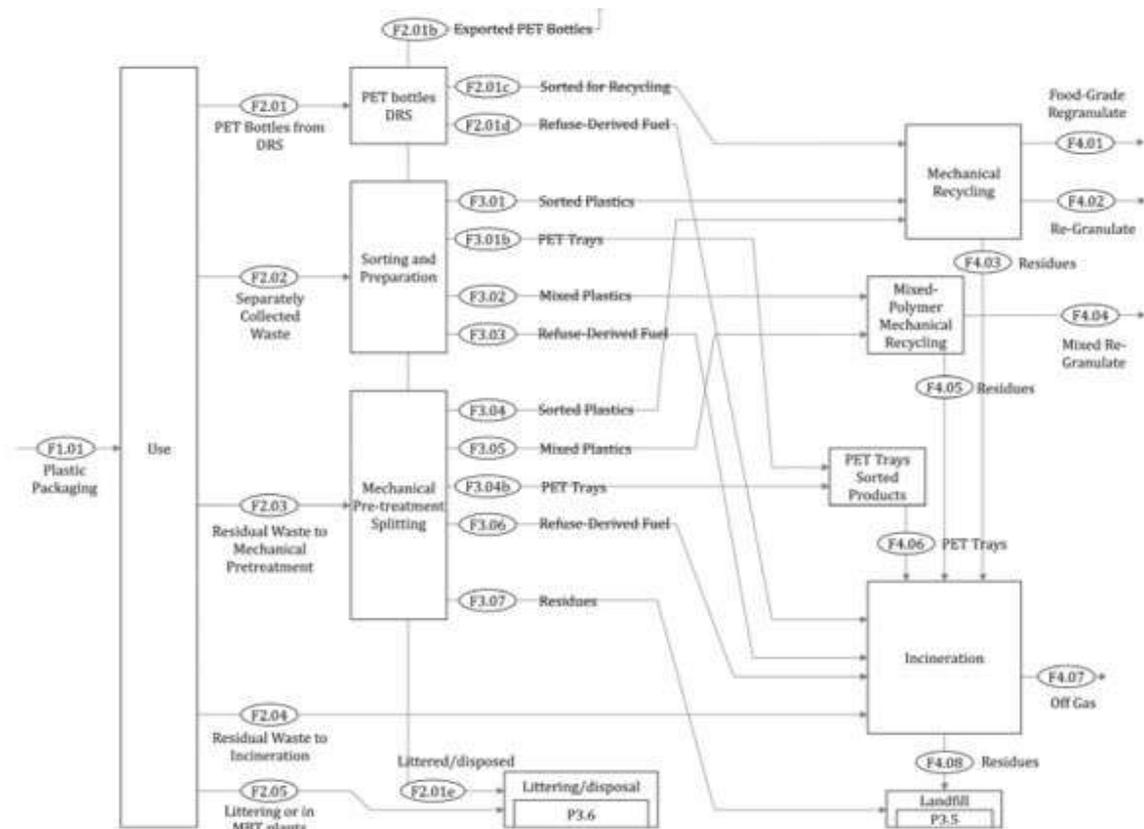
Another study that covered sustainable food packaging issues across multiple European countries noted the need for improvements and harmonisation of policies and practices[19]. Interviews with policy makers and practitioners in different countries found key differences in infrastructure for collecting, sorting and use of packaging waste.

While stakeholders tend to share goals in moving towards a more circular economy, the researchers concluded that "the integration of sustainable food packaging solutions within Europe depends more on policies and stakeholders' mindsets than on technical aspects". Such a mindset consists of a determination to stop climate change and protect biodiversity.

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Evaluation & Consumer Behaviour

The idea that mindsets determine the effectiveness of complex systems emphasises the importance of allowing for human behaviour in intervention design. Evaluators of interventions that tackle the problems outlined above must understand the capabilities and motivations of various actors within the system. Evaluation research in this context has two purposes. Firstly, it can tell us whether an intervention, or part of that intervention, has worked, to what extent, and why. Secondly, it provides lessons for those developing or implementing similar programmes in different circumstances.

With extended producer responsibility (EPR) legislation coming into force in various European countries, there are opportunities to learn about what works in the design and delivery of such policies. EPR uses a variety of mechanisms to generate change, including incentives and target setting. A recent paper evaluated EPR schemes in five EU countries (where the schemes will be mandatory in all members states by the end of 2024)[20] . It found that EPR has improved the financial and operational viability of plastic waste management, with higher collection and recycling rates. Elements of the schemes incentivised producers to put less plastic packaging on the market and encouraged eco-design. The evaluation also provided further evidence of the inadequacy of local recycling infrastructures.

Recycling policy interventions can complement extended producer responsibility schemes. Research found positive effects for recycled content standards and recycling targets, which limits the recycling industry's dependence on external markets such as oil [21]. While they help to increase recycling rates, they do not ensure that recycling levels continue to increase beyond initial targets. However, economic interventions such as a green dot fee bonus or a packaging tax can create further incentives for recycling.

These evaluations provide a sense of what is working, where the problems are and how to help/encourage businesses to work in synergy with the value chain. However, as noted above, human behaviour is a crucial aspect of understanding how a complex system works. A meta-analysis of 60 studies has identified behaviours associated with interventions for reducing plastic waste. It used the influential COM-B (Capability-Opportunity-Motivation-Behaviour) model to categorise those behaviours. This follows the premise that successfully changing behaviour depends on the intervention changing multiple factors – the capabilities of participants, their opportunity to change or their motivation to change. The review found that 'persuasion', 'enablement' and 'environmental restructuring' were the types of intervention associated with the strongest changes in behaviour.

> **Successfully changing behaviour depends on the intervention changing multiple factors – the capabilities of participants, their opportunity to change or their motivation to change.**

In addition, interventions targeting 'psychological capability' (i.e., awareness of the outcomes of behaviour) were found to have a negative effect on plastic waste reducing behaviours while targeting 'physical opportunity' and 'reflective motivation' (attitudes and moral norms) had the strongest positive effects. These findings indicate it is not enough to simply raise awareness as consumers also need to be enabled and persuaded to act.

These lessons are evident in three further studies published within the last couple of years that provide insight into consumer perceptions of sustainable packaging. A consumer survey in the UK found a lack of knowledge on some recycling procedures [22]. Around half did not know that black plastic trays cannot be recycled, and most were unaware of what to do with compostable trays. However, consumers are generally willing to recycle. While they do not always check for recycling information on packaging, labelling was found to be successful in changing consumer behaviour. The conclusion from the study was that more targeted education is needed, combined with support from government and businesses to enable consumers to make sustainable choices. The potential for consumer behaviour change has been investigated in two separate pilot studies run in Spain that combined incentives with other intervention types to improve household recycling behaviours[23].

The first study, based in Catalonia, was a six-week project that offered virtual reward token to over 1000 families to encourage better recycling behaviour . The project's app also offered gamification incentives such as raffles and lotteries and was used to give citizens feedback after collecting and registering recycling material. The evaluation of the pilot found that, due to the high need for communication and interaction, the use of mobile technologies was well suited to this type of intervention. Overall, the programme produced positive changes in recycling habits. The second study was based in Valencia and was part of a wider EU-funded research and innovation project[24]. A survey of citizens found positive attitudes to sorting recyclables at home. However, they were impeded by lack of awareness and facilities for recycling. The pilot intervention tackled the lack of awareness with targeted campaigns and training sessions. It also developed and tested smart technologies (filling level sensor, label dispenser and smart ID card) to improve domestic waste management practices.

The findings of these studies follow a pattern that supports the COM-B model in that motivation (i.e., awareness and attitudes) is not enough to ensure improved recycling rates. It is also important to understand whether consumers have the opportunity and capability to do what is needed through tools and facilities for recycling. Put another way, putting good systems in place is insufficient without the right kind of communication to motivate and educate all those who interact with those systems.

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Chapter 2: Corporate Reporting

"Now we need to move towards a challenging measure of corporate responsibility, where we judge results not just by the input but by its outcomes, the difference we make to the world in which we live"
UK Chancellor of the Exchequer, Gordon Brown, 2004 [25]

Introduction

Society expects businesses to do more than simply make a profit. Although private enterprises have a long history of philanthropy and progressively supporting the workforce and their families, such activities have been far from obligatory. Likewise, while the central purpose of some businesses is to sustain themselves and have a positive impact on the environment, many others have not had the same compunction. Corporate Social Responsibility (CSR) has become a familiar concept to businesses in the last 20 years or so. For a variety of reasons, including scrutiny and criticism from journalists and pressure groups, businesses experience more demands for information about the social and environmental impacts of their activities.

Crucially, CSR is no longer simply about reporting that information but demonstrating that they are acting where necessary. As more businesses feel the need to prove their sustainability, they use corporate reporting to cover all aspects of their impact on society and eco-systems. This is an area of great interest to business schools and there is plenty of research and theory that offers insight and guidance on how report effectively.

Last year's Future of Packaging report stated that most consumers expect businesses to do more to reduce their environmental impact, including making packaging more sustainable. We noted some of the targets set by supermarkets for reducing the use of plastic and making all packaging recyclable, reusable or compostable. These commitments are set out on corporate web pages as a response to demands of consumers, media and pressure groups. For this year's report, we have looked at those pledges in more detail and compared the reporting of large retailers and brand owners on their climate impact, responses and progress to date.

This chapter provides further context by looking at approaches to corporate reporting. It considers the main drivers and motivations for businesses engaging in CSR. It then highlights some of the problems and inconsistencies on current CSR practices and summarising some of the available guidance on what corporate reporting should include. The considerations are the prelude to analysis of the targets and actions reported by leading UK retailers (plus two global brand owners for comparison).

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CSR Drivers

The business benefits of sustainable actions are well-documented. Energy saving efficiencies and enhanced reputation are among the more obvious reasons for ensuring that products are made and distributed in a way that works for the environment and society in general. Business models will determine the nature of those actions as customer profiles and company values have a significant influence on both actions and how they are communicated. Nonetheless, there are likely to be three broad types of motivation for corporate environmental sustainability - profitability, environmental policy and stakeholder pressure.

A review of research in the retail sector summarises these three drivers [26]. Increased profitability comes naturally with efforts to control costs, make business processes more efficient and utilise resources more effectively. This usually means using less energy and resources, which reduces environmental impact. In addition, the research noted that companies that decrease and eliminate their waste are likely to reduce their costs and there are also opportunities to turn waste into new resources to increase revenues. Finally, green actions add competitive advantage and put companies in a position to take advantage of green markets.

Efficiencies and cost savings are very common, as interviews the Retail Institute conducted with business leaders last year confirmed. Everyone had a case to make about doing something for the environment by changing energy provider, lightbulbs or more effective use of resources. For some, that might be the limit of their endeavours, unless government policy changes to compel them into other actions. Even if it doesn't involve mandating change through taxes and fines, governments can shape new norms and expectations that oblige corporations to acknowledge sustainability.

Increasing engagement in voluntary codes of practice, such as the United National Global Compact, can have a similar effect. In addition, Government policies can support research and development in green product design and technology development. This drives corporate action by helping them to overcome barriers to innovation.

The third main driver of corporate environmental sustainability is stakeholder pressure. This includes those with a direct involvement in the company's performance, such as shareholders, employees and suppliers and those who might be influenced by its actions, including customers, local residents and public institutions. Pressure may come from these groups for reasons including concern about profits or through actions that could damage the reputation of the business, such as increasing public awareness of a negative environmental impact. Larger businesses have a potentially large number of different groups (see figure 6) to which they must engage, obey, respond, negotiate, compete, explain or provide compensation. Management of stakeholders is a major reason why companies choose to report their environmental performance. Such disclosure practices also help to legitimise corporate activities, gain social acceptance or counter any negative media coverage by highlighting strengths and strategic targets [27].

Increased profitability comes naturally with efforts to control costs, make business processes more efficient and utilise resources more effectively.

These drivers have led many businesses to create or reform processes with social and environmental impacts in mind. Stakeholder pressures increase the importance of effective communication.

The challenge is to prove that sustainable actions are authentic and to minimise scepticism and negative criticism that could lead to a reputational crisis.

Figure 6: The Stakeholder Model (Ditlev-Simonsen, 2021[28])

GOVERNMENTS

LOCAL COMMUNITY ORGANIZATIONS

SUPPLIERS

OWNERS

ENVIRON-MENTALISTS

CONSUMER ADVOCATES

FIRM

SIG

CUSTOMERS

EMPLOYEES

COMPETITORS

MEDIA
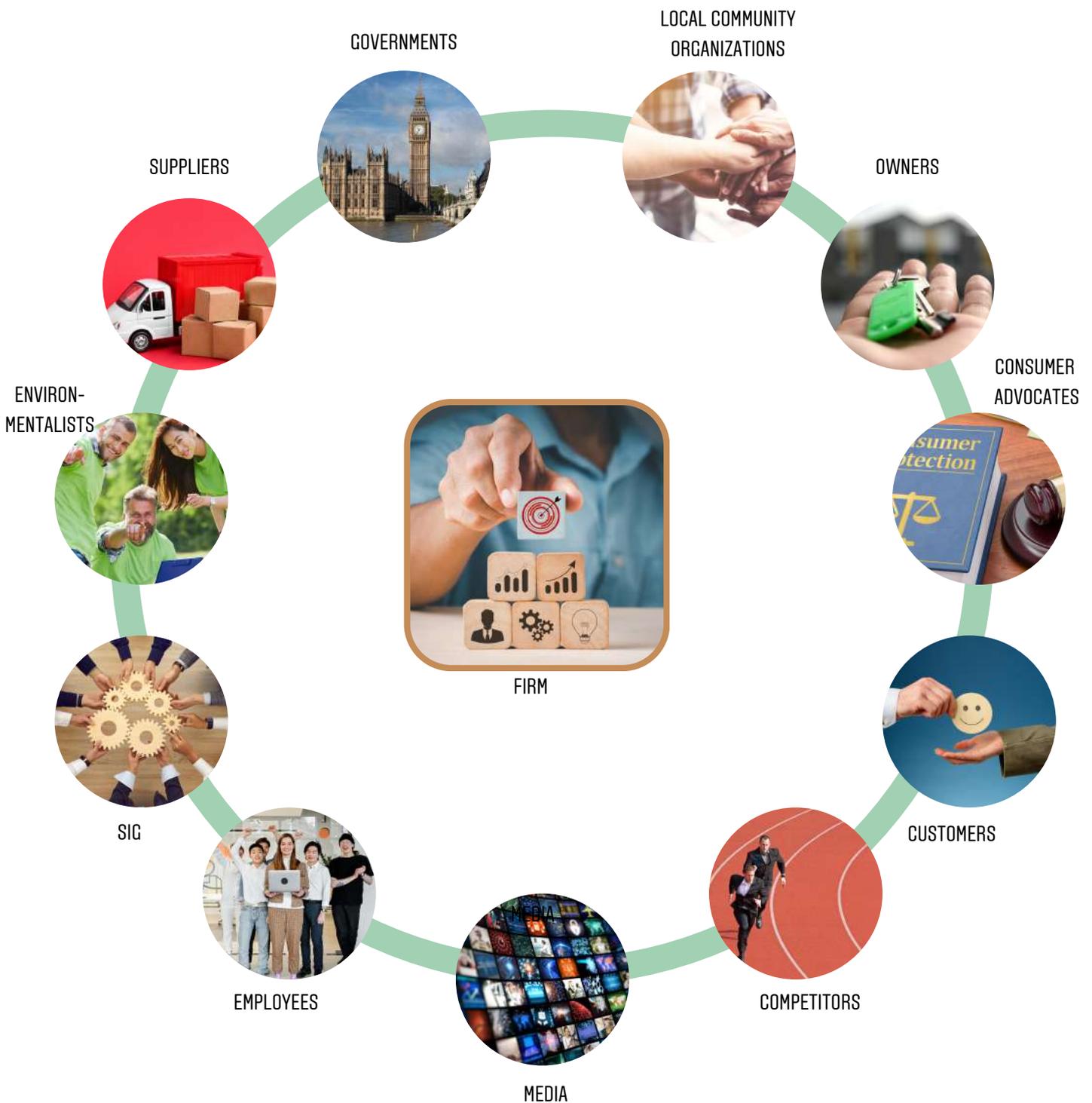
Inconsistencies

While CSR can simply mean businesses taking responsibility for the economic, social, ethical and environmental impacts of its activities, a more demanding definition could call for all the activities of a business to have a 'beneficial impact' on society, however that might be measured [29]. For sure, it is no longer just about giving back some of the profits to a good cause.

The variety of CSR definitions is a key problem, both for those who research it and for businesses trying to maintain their reputation under increased scrutiny. As Leeds Businesses School Reader in Communications, Dr Martina Topic, has told us, it means that CSR is still a contested concept. While some focus on responding to society's economic, ethical and moral expectations, others see CSR as being more contained within a company's immediate stakeholders by ensuring that shareholders' profit, employees are treated fairly, and suppliers are paid promptly.

Even if it is more accepted that businesses should do the right thing by their workers and the environment, there is a still a question of who is responsible for ensuring that happens. It could depend on political views. While some believe that the government should not get involved and the market will compel companies to act ethically due to fear of losing profits, others are less willing to rely on such mechanisms, especially considering the many documented cases of unfair treatment and environmental damage. Environmental problems are complex, making it difficult to unpick the exact causes and consequences. It is challenging for governments to anticipate the consequences of innovation and it takes time for a consensus to form on what should be done. Furthermore, slow legislative processes mean that some businesses could get away with years of harmful behaviour before being legally obliged to stop [30].

These issues mean that there is, according CSR scholars, a "discretionary area of decision-making between legal sanction and societal expectation that business leaders face every day"[31]. The role of profit-making firms in contemporary society includes meeting broader social responsibilities, which are changing continually and vary between cultures. To some extent, criticism is expected as even companies with strong CSR face protests.

Dr Topic suggests that this is partly because CSR communication is often met with scepticism. As a result, companies experience a 'catch 22', that means that if they communicate too much, they face the risk of being accused of only doing CSR for marketing purposes, whereas if they do not communicate consumers are not aware that something is being done at all. This has led many companies to limit their CSR communication to corporate websites and refrain from using it in any advertising.
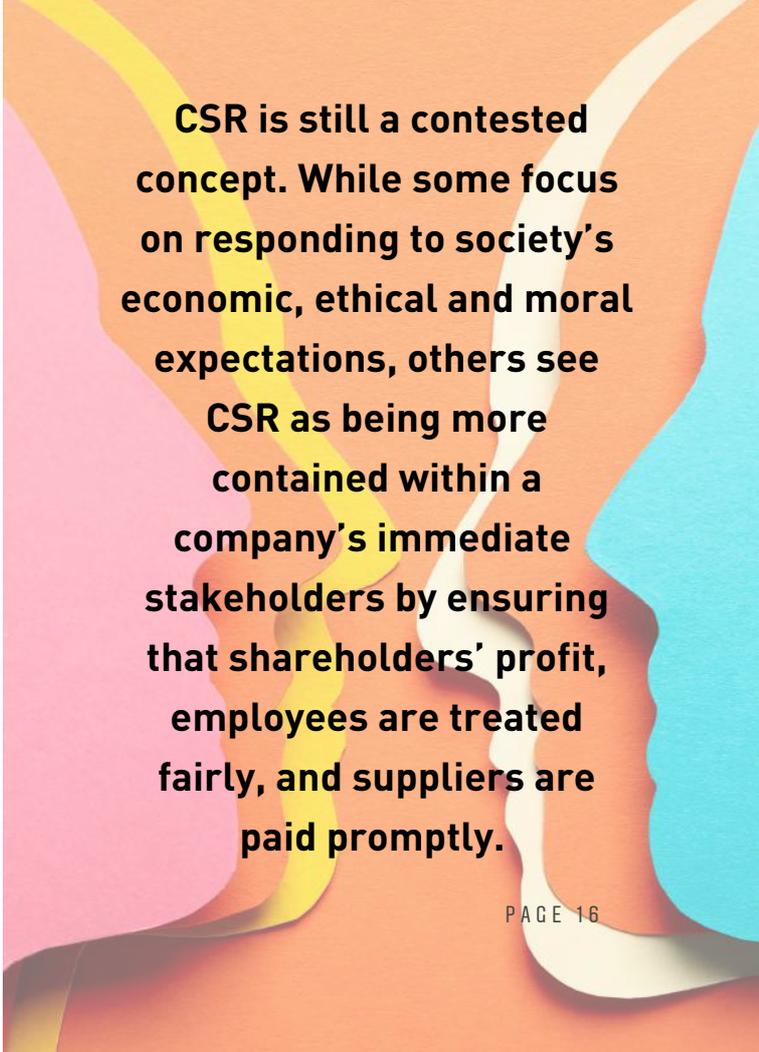
> **CSR is still a contested concept. While some focus on responding to society's economic, ethical and moral expectations, others see CSR as being more contained within a company's immediate stakeholders by ensuring that shareholders' profit, employees are treated fairly, and suppliers are paid promptly.**

Scepticism could be due to a lack of clear evidence on genuine impacts of CSR strategies, at least as far as the environment is concerned. Kenneth P Pucker, writing in Harvard Business Review, contends that while there has been a massive increase in companies publishing corporate social responsibility (CSR) reports that use the Global Reporting Initiative (seen as the highest available standards), "carbon emissions have continued to rise, and environmental damage has accelerated". He suggests that there is too much reporting and measurement and not enough action to improve environmental or social outcomes.

Inconsistencies in CSR reporting also create doubts about its integrity. The OECD has observed that the lack of standardised reporting practices limit comparability and the chances of sustainability factors being integrated into the investment decision process[32]. Pucker states that measurement is often nonstandard, incomplete and imprecise. In addition, what companies choose to report is usually voluntary[33]. A 2017 survey of the top 500 US firms found that just 184 reported their total greenhouse gas emissions[34]. In addition, a recent global survey (by The Harris Poll for Google Cloud [35]) of c-suite executives has reported that 59% admitted to overstating or inaccurately representing their sustainability activities[36]. The same survey found that most of these business leaders wanted to advance their sustainability initiatives but were limited by budget, lack of knowledge or the need to improve internal structure and management practices.

Research has also found a tendency to use 'soft', as opposed to 'hard' environmental targets in disclosures of company performance[37]. A study of UK firms used the distinction between symbolic, generic soft targets, which tend to be less accurate and reliable than measurable hard targets with clear timeframes. The research paper provides examples like 'halt the loss of biodiversity' and 'reduce the overall waste created', which have definition in terms of stopping or reducing something but are very difficult to measure or lack timeframes for delivery. It suggests that "U.K. firms, particularly those in highly polluting industries, tend to disclose symbolic soft or semi-hard ETs to manage their public image and legitimize their existence". There is also a tendency to disclose positive environmental achievements rather than unachieved targets. The research did find increasing use of hard environmental targets over the decade of study, although softer targets were still more prevalent, particularly in the more 'environmentally sensitive' firms. In addition, the sensitivity of environmental disclosure by businesses and potential for being accused of greenwashing can make many of them reluctant to report at all – a practice described as 'greenhushing' [38].

These problems suggest a need for improved and more widely adopted corporate reporting standards combined with CSR becoming more integral to businesses' overall strategies. Recent UK Government legislation requires businesses to disclose their environmental impact (Sustainability Disclosure Requirements), with the objective of helping investors and customers to make informed decisions [39]. However, there is still a considerable degree of discretion for corporations in what they choose to report, albeit with a strong likelihood of scrutiny depending on company profile. This is partly because there is a large amount of information that each company could report. Potential variation includes the definitions and language used, types of environmental impact or measures, how much detail is provided and how often it is updated.

While there has been a massive increase in companies publishing corporate social responsibility (CSR) reports that use the Global Reporting Initiative, "carbon emissions have continued to rise, and environmental damage has accelerated".

Reporting Terms, Measures and Standards

There are many terms, standards, measures and frameworks relating to strategies and reporting under the broad banner of corporate social responsibility. The three figures below provide some brief explanation for some of that terminology. As noted above, people and organisations use different CSR definitions according to preference or business model. Related terms, such as ESG (environmental, social and governance) and Integrated Reporting aim to create a more measurable set of targets and are used by external stakeholders to assess a company's sustainability (see figure 7).

Integrated reporting initiatives include the use of balanced scorecards and GRI (Global Reporting Initiative, see below) to redesign annual reports so that they can fulfil the needs of a wider range of stakeholders. Financial and non-financial measures are integrated to provide longer term strategic direction [39]. Integrated reporting can be used by SMEs as well as larger organisations, as it helps them to consider value created for a range of stakeholders, including employees, customers and local communities. It has been linked to improved alignment of reporting practices, which can help to reduce costs of equity capital and hence improve company financial performance [40].

In addition to these broad approaches, it is increasingly common to see corporations using specific environmental terminology in their reporting, especially relating to emissions and net zero targets (figure 8). The Science-Based Targets initiative (SMTi) is a partnership of global environmental organisations promoting best practice in emissions reductions and net-zero targets[46]. Its Net Zero standard, launched in October 2021, provides guidance on net zero targets with the aim of improving consistency of corporate claims and enhancing confidence that strategies are consistent with limiting global warming to 1.5°C. SBTi also distinguishes between near-term science-based targets, for five to ten year reduction in emissions in line with 1.5°C or well-below 2°C, and long-term science-based targets, to be achieved by 2050, for driving economy-wide alignment and long-term business planning[47]. These standards also emphasise comprehensive decarbonisation across Scopes 1, 2 and 3 (see figure 8), with indirect emissions (Scope 3) to be part of science-based targets if they contribute more than 40% of a company's total emissions.

Corporate Social Responsibility (CSR): Companies integrate social and environmental concerns in their business operations and in their interaction with stakeholders on a voluntary basis.

CSR is difficult to define as it overlaps concepts of corporate citizenship, sustainable business, environmental responsibility, the triple bottom line, social and environmental accountability, business ethics and corporate accountability [41].

CSR practices are usually self-regulated and can have a lot of variation [42].

Environmental, social and governance [ESG].

Provides more measurable goals than CSR.

Used by investors as a measure of a company's sustainability.

ESG considers the ethics of the business in terms of people and the planet, and while in the past, the focus might have been on profits, this has now been swapped out with governance [43].

Integrated reporting [IR]

A concise communication about how an organisation's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term [44].

Integrated reporting can significantly improve the health of corporations and the external environment they impact by considering the three integrated dimensions of sustainable development: economy, society and environment [45].
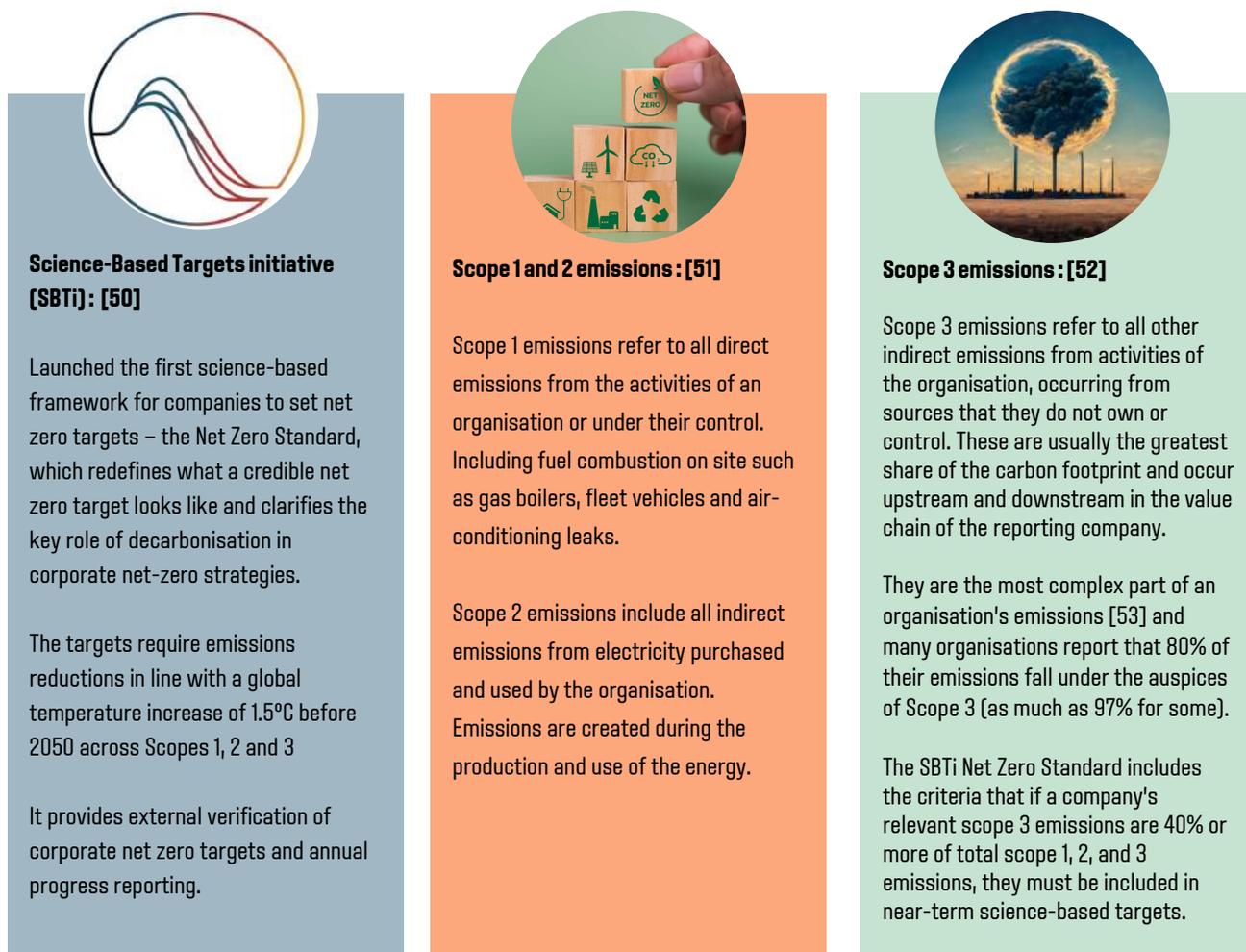
Figure 7: CSR, ESG and IR

According to Carbon Intelligence (Accenture's zero carbon arm), Scope 3 emissions account for 80-90% of the total footprint of many food and drink businesses[48].

WRAP (Wate & Resources Action Programme) has co-developed common guidance on Scope 3 emissions in the sector[49], which summarises and signposts relevant information and datasets.

Figure 8: SBTi and Scope, 1, 2 and 3 emissions

Science-Based Targets initiative (SBTi) : [50]

Launched the first science-based framework for companies to set net zero targets – the Net Zero Standard, which redefines what a credible net zero target looks like and clarifies the key role of decarbonisation in corporate net-zero strategies.

The targets require emissions reductions in line with a global temperature increase of 1.5ºC before 2050 across Scopes 1, 2 and 3

It provides external verification of corporate net zero targets and annual progress reporting.

Scope 1 and 2 emissions : [51]

Scope 1 emissions refer to all direct emissions from the activities of an organisation or under their control. Including fuel combustion on site such as gas boilers, fleet vehicles and air-conditioning leaks.

Scope 2 emissions include all indirect emissions from electricity purchased and used by the organisation. Emissions are created during the production and use of the energy.

Scope 3 emissions : [52]

Scope 3 emissions refer to all other indirect emissions from activities of the organisation, occurring from sources that they do not own or control. These are usually the greatest share of the carbon footprint and occur upstream and downstream in the value chain of the reporting company.

They are the most complex part of an organisation's emissions [53] and many organisations report that 80% of their emissions fall under the auspices of Scope 3 (as much as 97% for some).

The SBTi Net Zero Standard includes the criteria that if a company's relevant scope 3 emissions are 40% or more of total scope 1, 2, and 3 emissions, they must be included in near-term science-based targets.

Examples of other international reporting standards are GRI, ISO and UNGC (see figure 9). GRI is seen as an instrument that provides a worldwide standard for CSR reporting. It includes more than 400 instruments under four axes (environment, sustainability, governance, social), and around two thirds of these are mandatory [54]. GRI's reporting principles fall into two categories, relating to the content and quality of the sustainability report. These include the reasonable identification of a company's stakeholders and the role of sustainability in the organisation's overall strategy[55].

In addition, the principles of completeness and accuracy state that there should be sufficient accurate information provided for those who are interested to be able to evaluate the company's performance. Similarly, the principles of balance and clarity suggest that reporting should include both negative and positive aspects and be presented in a way that is accessible for stakeholders. Finally, GRI principles require the information to allow comparison with other organisations, refer to specified time periods and should be supported by reliable evidence.

Figure 9: International reporting standards

Global Reporting Initiative (GSI):

The GRI Standards represent global best practice for reporting publicly on a range of economic, environmental and social impacts. Sustainability reporting based on the Standards provides information about an organization's positive or negative contributions to sustainable development[56].

A unitary instrument that turned CSR reporting into an agreed and recognized practice in companies worldwide[57].

Offers sustainability reporting guidelines and sector specific guidance[58].

International Standardization Organization (ISO):

The world's largest developer and publisher of management systems and guidance standards.

ISO 14000 is an environmental standard for enabling organizations to identify and manage their impacts from a life-cycle perspective.

ISO 14001 sets out criteria for creating and implementing an environmental management system. It includes of certification for measurement and assurance of environmental impacts[59].

The United Nations Global Compact (UNGC):

A voluntary corporate citizenship initiative designed to push companies to move beyond traditional compliance and narrow risk assessments.

Seen as a step towards adopting corporate environmental sustainability strategies.

Principle-based framework for businesses.

Based on CEO commitment to implement 10 sustainability principles [60].

Net Zero Targets and Progress

To assess the current state of corporate reporting by UK supermarkets, we gathered information from nine retailer websites, plus Unilever and Proctor & Gamble (P&G) for comparison. The information relates to greenhouse gas emissions (this section) and packaging and plastics (next section). Therefore, this analysis does not cover other environmental topics such as water usage, food waste, sustainable farming and protecting forests, on which most retailers also report their targets and progress to date. The extent of activities on which supermarkets now report reflects not only their huge operational scale and impact but also the expectation of transparency and accountability on all these areas.

Figure 10: Mission Statements

"Working hard to reduce waste, cut greenhouse gas emissions and use resources with care"

"We aim to protect and conserve the world around us through sustainable practices and initiatives"

"To be carbon neutral across our Group operations by 2035 and net zero across our full value chain, aligned to 1.5°C, by 2050."

"Better for the planet"

"At Aldi we are doing our best to be Fairer, Greener and Healthier - to be Better Everyday"

"As part of our overarching sustainability strategy to 'make good food accessible to everyone', our vision is to ensure that our food and all our products are produced, sold and consumed in ways that benefits producers, people and the planet."

"We believe in better lives for animals, and better futures for farmers, communities and the environment."

"We recognise the importance of championing a better way of doing business and doing the right thing by both people and the planet."

"Our goal is to become a net zero business across our value chain by 2040. This includes our own Scope 1 and 2 emissions from stores, offices and warehouses, and our dedicated logistics network; and indirect, or Scope 3, which includes emissions associated with sourcing and manufacturing our products."

"Improving lives for generations to come with irresistible superiority that is sustainable."

"To deliver the ambitious sustainability agenda in the Unilever Compass, we're harnessing our brands, our people and our partners to tackle the issues our consumers and stakeholders care deeply about, such as climate change, plastic pollution and inequality."

However, the actual targets and activities of these businesses that relate to the environment are still quite varied. Starting with net zero (table 1), there are differences in the dates when they expect to achieve this goal and some slight variations in how it is expressed. Waitrose, Morrisons and Sainsbury's, for example, focus on achieving Net Zero emissions in their operations by 2035. Tesco's main goal, however, is to achieve Net Zero across its total emissions footprint by 2050. In other variations, Co-op aims for net zero in operations and products by 2040 and Asda refers to 'end-to-end' net zero carbon emissions by the same year. M&S has set interim targets towards net zero across all operations (including scope 3) by 2040 with scope 1 and 2 net zero by 2035. Notably, Aldi and Lidl do not specify a net zero target. Aldi states that it has been carbon neutral since 2019 (table 2), which is distinct from net zero in that carbon offsets are included in the calculation (and doesn't account for other types of emissions)[61] .

For many companies, goals for reducing Scope 1 and Scope 2 greenhouse gas emissions represent a pathway towards net zero. Comparisons between retailers are difficult as not only do target dates vary but also the baseline years they use. Asda, for example aims for 50% lower scope 1 and 2 emissions than 2015 levels by 2025 while Lidl aims for an 80% reduction by 2030. Unilever specifies an interim goal of a 70% reduction in scope 1 and 2 emissions by 2025 on its way to 100% by 2030 and net zero across the value chain by 2039. Some targets specify emissions from logistics or the supply chain or the use of an offsetting programme.

Not all retailers refer to their Scope 3 emissions and goals tend to vary. Sainsbury's' pledge to 'reduce Scope 3 emissions' is quite general and others only mention it as part of the broader aim of reaching net zero or state that they plan to develop a scope 3 measurement. Morrisons aim to cut scope 3 emissions by 30% by 2030 (2019 baseline) and P&G refers to it indirectly by including the lifecycle emissions of products and packaging in its Climate Transition Action Plan.

Overall, the various net zero and emissions goals suggest that all businesses are heading in a similar direction. However, the variety of measures, baseline and target dates make it difficult to compare them. There are some mentions of the Science-Based Targets initiative (SBTi), which could help to create greater uniformity between the retailers. Tesco, Waitrose and P&G are signed up to the SBTi stated ambitions and Sainsbury's, M&S and the Co-op (at the time of writing) are working towards SBTi approval. It seems likely that other companies will align themselves with this in the coming years. In addition, there have already been moves made earlier this year to unify supermarkets' approaches to measuring the carbon footprint of food and drinks[62].

WRAP and WWF have facilitated a new 'Retailer Net-Zero Collaborative Action Plan', which will tackle the differentiation in approaches to emissions accounting. Eight supermarkets have signed up to the plan, which involves working with key suppliers to trial protocols developed by WRAP for measuring Scope 3 emissions.

WRAP and WWF have facilitated a new 'Retailer Net-Zero Collaborative Action Plan', which will tackle the differentiation in approaches to emissions accounting.

Table 1: Supermarket and brand owner emissions targets

	NET ZERO TARGETS AND ACTIONS	GHG EMISSIONS (SCOPE 1&2)	SCOPE 3
Morrisons	Net Zero GHG emissions from operations by 2035	Making an absolute reduction of 46% by 2030 (2019 baseline)	Reduce Scope 3 emissions by 30% by 2030 (2019 baseline)
ASDA	By 2040: An end-to-end net zero carbon emissions business	By 2025, 50% lower emissions (scope 1 and 2, 2015 baseline)	Develop measurement of Scope 3 non-direct emissions
TESCO	• Net zero across total emissions footprint by 2050, including supply chain and products • First FTSE 100 company to commit to science-based targets in line with 1.5C target.	Aim to be carbon neutral by 2035	
Sainsbury's	• Net Zero in operations by 2035 • Aligned to 1.5ºC trajectory across all scopes and timeframes and working towards SBTi approval		Reduce Scope 3 GHG emissions
ALDI		• Continuous reduction of GHG emissions. • Aldi South Group aim to reduce operational GHG emissions by 26% by end 2025 (2016 baseline).	
LIDL		• By 2030, reduce absolute Scope 1 and 2 GHG emissions by 80% (1.5-degree trajectory) • Cut carbon emissions from logistics – 25% per pallet by 2028 • By 2030, reduce absolute store delivery GHG emissions by 42% (2018 baseline)	By 2025, 100% of Lidl GB suppliers that contribute to top 75% of Lidl Stiftung & Co. KG product-related emissions will have validated science-based targets
WAITROSE & PARTNERS	• Brought forward net zero carbon target across operations to 2035 • GHG emissions from UK farms supply base net zero by 2035 • Signed up to Science Based Targets and Business Ambition for 1.5°C. • Joined the UNFCCC Race to Zero.	In 2022, measuring the carbon footprint across entire value chain, and will set science-based targets for scopes 1, 2 & 3.	In 2022, measuring the carbon footprint across entire value chain, and will set science-based targets for scopes 1, 2 & 3.
CO-OP	• Net Zero business by 2040, for operations and products • In the process of setting new SBTi-approved targets, remaining aligned to a 1.5ºc pathway.	• Carbon neutral through robust offsetting programme, in operations by 2021 and own-brand products by 2025. • By 2025, will reduce the impact of operations by 50% and products by 11%	
M&S	• Net zero business across Scopes 1, 2 and 3 (all operations) by 2040 • Net zero across own business by 2035 • Targets align with 1.5°C limit and joined the UN's Race to Zero	• Near-term science-based target to reduce carbon emissions by 55% against our new baseline (financial year 2016/17) of 5.7 million tonnes of CO2 equivalent (CO2 e) by 2030 • Currently awaiting approval from SBTi for near-term target	
P&G	• Net zero ambition by 2040 • Validated by the Science Based Target Initiative	• Reduce Global Upstream Finished Product Freight emissions intensity by 50% (2020 baseline) • Reduce supply chain emissions by 40% per production unit by 2030 (2020 baseline).	Climate Transition Action Plan covers the entire lifecycle emissions of products and packaging, across supply chain, operations, consumer use and product end of life.
Unilever	• Net zero emissions across value chain by 2039.	• Zero emissions in operations by 2030 • Reduce Scope 1 and 2 emissions by 100% by 2030 (2015 baseline); with an interim goal to reduce by 70% by 2025.	• Halve value chain emissions of products by 2030 (2010 baseline.) • Net zero emissions covering Scope 1, 2 and 3 emissions by 2039.

A look at what these businesses claim to have achieved on emissions also produced mixed findings (table 2). While some provide considerable detail, others appear content to provide a headline figure. However, all of them provide some examples of the actions they are taking to reduce emissions. Morrisons is probably typical of this pattern. The main achievement reported is a reduction in GHG emissions of 10% between 2019 and 2021. The actions to achieve this and more in the future include installation of solar energy, larger HGV trailers (to reduce the number on the road), and pilot stores that use 'next-generation' electrically (not gas) powered fridges.

Similar programmes are mentioned by Tesco, Lidl and Waitrose. Asda provides more detail in its emissions achievements, stating its annual carbon footprint in tonnes of CO2, a figure that P&G and Unilever also provide, broken down further into Scope 1, 2 and 3 and separate business units.

Other actions include Asda requesting that its supplier partners make climate commitments for their products, Aldi highlighting its latest carbon offsetting projects and Waitrose's centre for excellence in regenerative farming to help achieve net zero in its farm network by 2035. Meanwhile, Co-op emphasises its international projects, such as pioneering smallholder farmer adaptation to climate change in Peru and wind farms providing renewable energy and employment in India.

Table 2: Retailers' Claims on Emissions

Morrisons	Reduced greenhouse gas emissions from operations by 10% between 2019 and 2021
ASDA	• 2021 carbon footprint: 30,372,830 tCO2e (-2% on 2020) • 35% reduction in Scope 1 and 2 carbon emissions since 2015
TESCO	2021/22 - achieved an absolute (emissions) reduction in operations of 52% against a 2015 baseline.
Sainsbury's	• 44.5% reduction in absolute greenhouse gas emissions within operations year-on-year • 100% renewable electricity across entire estate since January 2022 • 'A' rating for CDP climate change disclosure. The only UK food retailer to achieve an 'A' rating for eight consecutive years
ALDI	Carbon neutral since 2019

- Net zero carbon across our entire operations (Scope 1 & 2) Performance: -22.18% (2021/22)
- 2021/2022: electricity procured by the Partnership renewable certified = 100%

Achieved Scope 1 and 2 carbon reduction targets several years early and have made positive progress on our Scope 3 targets

- From 2010 to 2022, reduced absolute Scope 1 & 2 emissions across global operations 57% through energy efficiency and renewal energy sourcing.
- 99% renewable electricity globally
- "Advancing natural climate solutions which will balance any residual emissions from our operations that cannot be eliminated by 2030."

- -68% Reduction in operational Scope 1 and 2 emissions since 2015. (on track to achieve interim milestone of a 70% reduction by 2025.)
- Taking into account the updated definition and widened scope of renewable electricity reporting, in 2022, 93% of total electricity was from renewable sources.

Figure 11: Image from the Unilever website, showing access to detailed climate and waste data
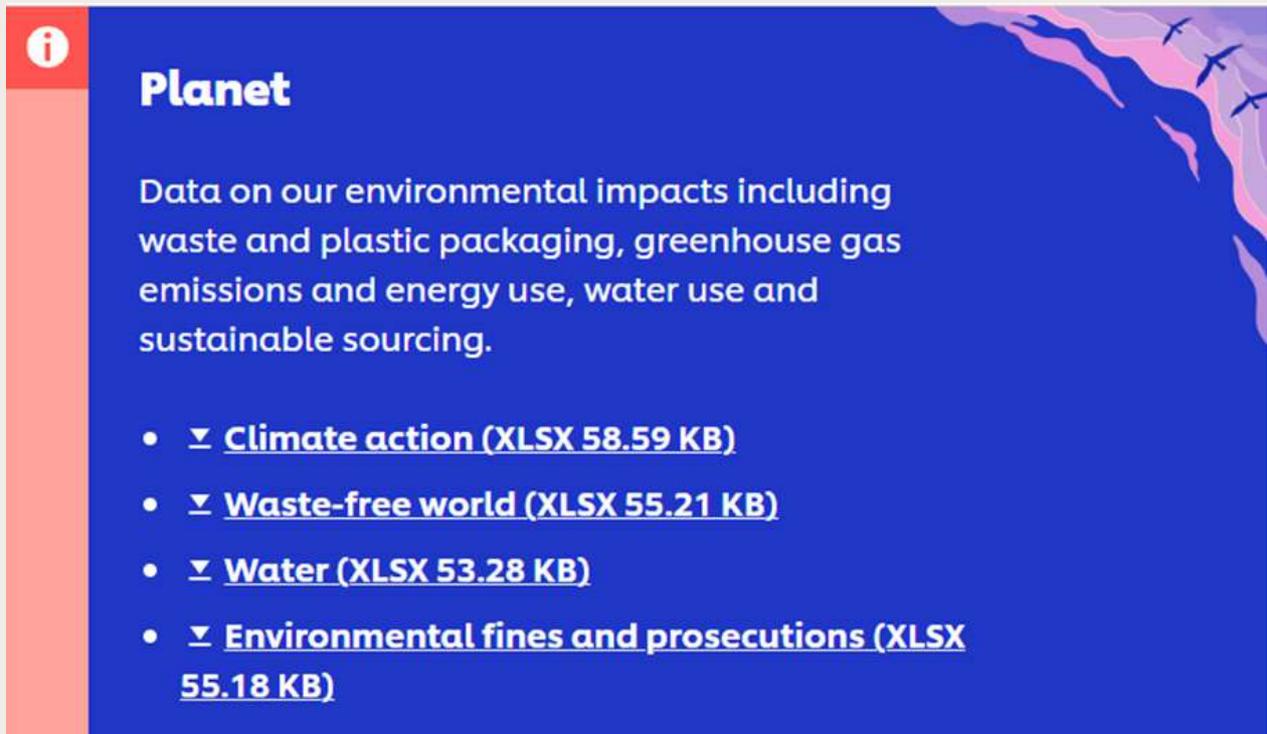
Plastic and Packaging Targets and Progress

While there is some uniformity in pledges made by the selected companies on plastics and packaging, there also appears to be some variation in approach (table 3). Most of the companies have targets relating to the central three columns of the table: plastic reduction, packaging recyclability and use of recycled content. For example, both Morrisons (2017 baseline) and Sainsbury's (2018 baseline) have pledged to reduce plastic in their packaging by 50% by 2025. Aldi has a similar aim, to halve its plastic footprint by 2025 (2019 baseline), which will remove more than 2 billion pieces of plastic. Lidl specifies that own brand plastic packaging will be reduced by the same year (2017 baseline). Among the other supermarkets, Asda has no specific plastic reduction target but does have a more general pledge to 'reduce packaging' while Tesco says it 'remove plastic packaging where we can by 2025'. Co-op states that 'By 2023, no Co-op own brand products will include single-use plastics' and Waitrose, like Asda, has no plastic reduction target.

These differences could be explained by a variety of factors. It is likely that there are strategic decisions behind each goal relating to practicality and differing assessments of the most eco-friendly priorities. For example, Tesco's commitment to 'remove plastic packaging where we can' could be interpreted as vague and constructed so that they can't be accused of failing to meet a measurable target. However, it might be more realistic to have this aim given the complexity and large scale of its operation, with each product's packaging materials selected according to specific functional needs. There is also the common contention by retailers that reducing plastic is a false environmental target due to potential unintended consequences. Hence the priority for many is to improve recyclability in the hope that it leads to a fall in plastic pollution. This appears to be the approach of Waitrose, which arguably is leading the way having brought forward by two years its target for 100% recyclability, reusability and compostability to 2023 and received the best plastic intensity score among UK supermarkets in a recent Which? survey[63].

> There is also the common contention by retailers that reducing plastic is a false environmental target due to potential unintended consequences. Hence the priority for many is to improve recyclability in the hope that it leads to a fall in plastic pollution.

The other supermarkets are also working towards making all packaging recyclable by 2025, with some slight variations. Morrisons refer specifically to plastic packaging, while others clarify that the target is for own-brand packaging. Co-op's phrasing of the target as own-brand packaging 'easy to recycle' by 2023 could be interpreted as acknowledgement that technical recyclability does not mean it will be recycled in reality.

The prioritisation of recyclability suggests that packaging made from recycled material is also a priority for these businesses. Most of them state a recycled content target on their websites. Morrisons has the general aim of an average of 30% recycled content in its plastic packaging while Asda is slightly more specific in aiming for the same proportion in primary plastic packaging by 2025. Tesco and Sainsbury's both state an intention for including or increasing recycled content. Their apparent reticence to be more specific may come from uncertainty around the availability of recycled materials to ensure they can meet such targets. Aldi and Lidl are bolder in aiming for 50% of plastic packaging to have recycled content by 2025. Waitrose, Co-op and P&G do not have a target for recycled content, although they do report actions and achievements in this area (see below).

The last column in the table lists other goals expressed by the businesses. These relate mostly to waste reduction and reusable packaging. Asda aims for 'zero operational waste' by 2025, defined as 90% diversion for landfill and incineration (including energy recovery) or 90% of operational waste reused, redistributed, recycled. Waitrose intends for 85% of all the Partnership's operational waste to be recyclable by 2028 and Unilever's goal is to 'maintain zero waste to landfill in our factories'. While these targets are clear and ambitious, reuse plans appear to be at an earlier stage of development. Most of the retailers are known to be trialling refillable packaging aisles, although not many highlight them on their corporate web pages. Where they do, the language is about 'exploring new opportunities' (Tesco) or providing 'reuse/refill options for our customers' (Sainsbury's).

The plastic, packaging and waste targets reveal differing priorities among the selected businesses. These are likely to be reflective of business models. For example, the size of the business or proportion of own-brand products could influence packaging strategies. Achievement of certain goals will also mean that some businesses can focus on new targets. Therefore, it is important to note the claims and achievements of the businesses along with the current targets.

Most of the retailers are known to be trialling refillable packaging aisles, although not many highlight them on their corporate web pages. Where they do, the language is about 'exploring new opportunities' (Tesco) or providing 'reuse/refill options for our customers' (Sainsbury's).

Table 3: Plastic, Packaging and Waste Targets

	PLASTIC REDUCTION TARGET	RECYCLABILITY TARGET	RECYCLABILITY TARGET	OTHER GOALS
Morrisons	50% less plastic packaging in products by 2025	Making all plastic packaging recyclable by 2025	Using 30% average recycled content in our plastic packaging	
ASDA		Reduce packaging and drive 100% recyclability of what remains	30% recycled content in primary plastic packaging by 2025	• By 2040: A Zero Waste world, where nothing goes in the bin • Zero operational waste by 2025
TESCO	Remove plastic packaging where we can by 2025	Packaging fully recyclable by 2025	Contains recycled content where possible	• Reduce all unnecessary packaging by 2025 • All paper and board 100% sustainable by 2025 • Exploring new opportunities to reuse packaging
Sainsbury's	Reduce plastic packaging by 50% by 2025	Increase recyclability	Increase recycled content	• Making it easier for customers and colleagues to recycle • Reduce weight of packaging • Replace where feasible • Reuse/refill options for our customers
ALDI	Halving plastic footprint by 2025, removing more than 2 billion pieces of plastic.	100% of own brand packaging recyclable (or reusable or compostable) by 2022.	50% of plastic packaging to be made of recycled content by 2025	• Reduce all packaging by 50% by 2025 (2015 baseline) • Increase the volume of loose, refillable or reusable transactions year on year.
LIDL	By 2025, own brand plastic packaging reduced by 40% (2017 baseline)	By 2025, 100% of own brand & branded packaging will be recyclable, reusable, refillable or renewable	By 2025, 50% of own label packaging to be made of recycled content	• By 2025, own brand packaging will be reduced by 25% (2019 baseline)
Waitrose & Partners		100% of own-brand packaging reusable, widely recyclable or home compostable by 2023 (brought forward by two years).		85% of all operational waste across the Partnership will be recyclable by 2028
Co-op	By 2023, no Co-op own brand products will include single-use plastics.	All our own-brand packaging will be easy to recycle by 2023.		
M&S	In Foods, to remove 1bn units of plastic by 2027 = 30% reduction in plastic food packaging volume	100% of our packaging to be recyclable by 2025.		
P&G	50% reduction in virgin petroleum plastic resin in our consumer packaging	Working towards 100% recyclable or reusable packaging no later than 2030.		
Unilever	Framework of 'less plastic, better plastic, no plastic' 50% virgin plastic reduction by 2025, including an absolute reduction of 100,000 tonnes	100% reusable, recyclable or compostable plastic packaging by 2025	25% recycled plastic by 2025	• Collect and process more plastic than we sell by 2025 • Maintain zero waste to landfill in our factories

Looking down list of claims relating to plastic (table 4) , it seems that all the retailers feel the need to demonstrate significant progress in reducing usage. Achievements are presented in both percentages and absolute tonnages of plastic removed from packaging.

Tesco and M&S report the individual pieces of plastic they have removed (in the billions and millions respectively). As each business makes more progress in this area, it will be hard to maintain high numbers – and meet rising consumer expectations - in claims about the reduction of plastic.

Table 4: Plastic and Packaging claims

	PLASTIC REDUCTION TARGET	RECYCLABILITY TARGET
Morrisons	14% reduction in use of plastic packaging, an average of 7,520 tonnes a year since 2017.	First supermarket to use paper 'bags for life' and acquired a stake in a new recycling site in Fife.
ASDA	Relative to 2017 baseline, removed 9,821 tonnes of Asda Brand primary plastic packaging by the end of 2020 - above target of 9,750 tonnes by 2021	• 85% Asda brand packaging is recyclable at home - a further 4.5% accepted in stores for recycling • Increased the recycled content of packaging, up to 28.5% in 2020 from 24.8% in 2019.
TESCO	1.6 billion pieces of plastic permanently removed in UK	• Introduced own brand product ranges in fully recyclable packaging and eliminated all hard to recycle materials from Tesco brand packaging. • Installed soft plastic recycling points in all UK large stores.
Sainsbury's	• 300 tonnes reduction by light-weighting own brand water bottles and caps • 30% reduction in plastic packaging with the launch of double length toilet rolls, saving 84 tonnes	• 1st retailer to remove black plastic trays and offer a recyclable alternative • 1st retailer to remove single use plastic bags from loose produce
ALDI	7400 tonnes of plastic already removed	92% of packaging is recyclable (100% by 2022)
LIDL	For own-label packaging in 2020, reduced plastic footprint relatively by 18.5% (2017 baseline); on track to achieve 20% relative reduction by 2022.	• 2021: 30.4% of own label packaging made from recycled content • 2021: 81% of own label packaging recyclable, reusable, refillable or renewable
WAITROSE & PARTNERS	In 2019, reduced plastic packaging by 4%, and the volume of all packaging by 2.6% despite an increase in sales. This builds on past achievements: reduced packaging by almost 45% 2009 to 2016.	• 88.45% of all own-brand packaging is reusable or made from widely recyclable or home-compostable material (2021/22 figure) • Operational waste – 73.35% recycled in 2021/22
co-op	Over the past two years, removed 331 tonnes of plastic from fresh produce and horticulture lines.	• 37% recycled content across own-brand packaging • "Co-op has been busy tackling plastic packaging for a long time. We're focused on making Co-op packaging more recyclable, getting rid of the plastic that can't be recycled and changing customer behaviour."
M&S	• During 2021/22, removed 75 million pieces of plastic from the Food business. • Since 2018, removed over 3,000 tonnes of packaging in Foods	• No operational waste sent to landfill and working hard to reduce waste created. • In 2021, 91% of packaging was recyclable, up from 87% the previous year. • Year-on-year improvement for plastic packaging - increased by 11% in 2021.

PLASTIC REDUCTION TARGET	RECYCLABILITY TARGET
P&G — ~8% reduction of virgin petroleum plastic in packaging	• ~79% of consumer packaging designed to be recyclable or reusable • 2010-2020, reduced packaging per consumer use by over 12% • Nearly doubled use of recycled resin in packaging in the past two years (52,800 [FY 19/20] to 96,469 [FY 21/22] metric tons) • Improving recyclability of films by moving to recyclable formats when feasible and partnering to increase curbside collection of flexible films
Unilever — Since 2018, increased use of recycled plastic to 21% of total plastic footprint. On track to meet commitment of 25% recycled plastic by 2025.	Currently, 55% of packaging is recyclable, reusable or compostable (71% is technically recyclable with existing technology)

As retailers get closer to eliminating all the plastic they can, other targets and achievements will become more important. For many, the focus will be on getting closer to 100% of packaging being recyclable, reusable or compostable. Therefore, much of the progress reported on corporate web pages relates to this type of target. It is likely that the overall percentage of packaging that is recyclable is changing continually as retailers gradually work through each of the formats used for their many products. At the time of writing, Asda was reporting that 85% of its packaging is recyclable at home, Aldi said that 92% of its packaging was recyclable (this figure has not been updated for some time) and Waitrose's latest update stated that 88.45% of all its own-brand packaging was reusable or made from widely recyclable or home-compostable material.

It is important to note the slight differences in the way these figures are reported. Asda's emphasis on recyclable at home is supplemented by stating that 4.5% of its packaging can be accepted in stores for recycling. This reflects the recent roll-out of flexible plastic collections that most retailers have implemented. As well as being a positive step to boost collection rates, it also helps the supermarkets to report a higher rate of technical recyclability.

Not all the supermarkets report a current recyclability (plus reusable and compostable) figure. Tesco does not provide such a figure but does report on actions it has taken to improve recyclability. These include introducing 'own brand product ranges in fully recyclable packaging' and eliminating 'all hard to recycle materials from Tesco brand packaging'. It also mentions the installation of soft plastic recycling points. Co-op also promotes itself as active in this area, stating that it "has been busy tackling plastic packaging for a long time". The retailer says that all its packaging is recyclable "thanks to soft plastic recycling units in-store".

The recyclable/reusable/compostable figures reported by P&G and Unilever are slightly lower than those of the supermarkets. P&G states that around 79% of its consumer packaging is designed to be recyclable or reusable. Its website also states that the company is "Working to improve the recyclability of films by moving to recyclable formats when feasible and partnering with several groups to increase curbside collection of flexible films". Unilever's website states that 55% of its packaging is recyclable, reusable or compostable, adding that 71% is 'technically recyclable with existing technology'.

Both companies highlight the use of recycled materials, which P&G doubled between 2020 and 2022 and Unilever uses 100% recycled packaging for several of its leading brands. They also mention their role in international treaties and investments in solutions to prevent plastic leaking into the environment.

All the selected companies provide detail on the activities that are helping them to achieve their aims. Morrisons has extended its range of plastic-free loose fruit & veg, with paper bands for bananas and making other plastic packaging lighter. Asda has also removed single use plastic from fruit & veg while Tesco focuses on removing plastic from multipacks. Sainsbury's provides a long list of achievements for various product lines including beef mince, batteries, cream, ice cream and broccoli. Aldi, Coop, M&S and Waitrose describe similar achievements in various product categories.

For both greenhouse gas emissions and packaging waste, there is considerable variation in what the selected companies report and the way that they report it. As discussed in this chapter, there are several established frameworks and standards that guide companies on how they report emissions and progress towards. The voluntary nature of them explains some of the variation. However, the overall impression is that businesses are increasingly using these protocols to enhance their transparency and ensure that their data stands up to external scrutiny. It is easy to imagine that in just couple of years there will be greater uniformity in reporting by FMCG businesses.

A similar development towards reporting standardisation for packaging and plastics is also likely, although it might take longer to materialise. CDP, the charity that runs the global disclosure system 'for investors, companies, cities, states and regions to manage their environmental impacts' [64] has opened up a new function to enable organisations to report their plastics production and use[65]. It contends that comparable data is essential for decision making.

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Conclusion

Corporate Social Responsibility is still the broad heading most used to capture businesses' economic, social and environmental activities and impacts. The variety of definitions for CSR make it a difficult concept to use for measurement or evaluation of such activities. It also contributes to inconsistencies in reporting between companies. However, such ambiguity is not an excuse for inaction or an opportunity to avoid scrutiny. While there is still a tendency to use 'soft' environmental targets, this practice is increasingly likely to be criticised and research evidence suggests that such targets are becoming 'harder'. With plenty of guidance, standards and frameworks now available to businesses, reporting is becoming more transparent.

Some very recent developments underline the importance of establishing good practice in corporate reporting. On May 11th, the European parliament voted to ban claims of carbon neutrality (or similar terms) that are based on offsetting schemes, including planting trees to compensate for CO2 emissions. Although the vote is not yet binding (as it requires agreement from member states), it could mean that claims such as 'environmentally friendly', 'natural', 'biodegradable' and 'climate neutral' could be prohibited unless they are substantiated by detailed evidence [66].

In the UK, the Advertising Standards Authority (ASA) is reportedly about to ban adverts that claim products are carbon neutral using offsets. This is part of stricter enforcement by the authority of terms like carbon neutral, net zero and 'nature positive' in what has been described as a 'greenwashing crackdown' [67]. This has prompted advertising agencies to proclaim that 'The era of unspecific claims is over' [68]. The need for accurate data based on appropriate research methods and presented in a standard format is growing. This cannot happen without the real sustainable actions by organisations.

These observations are reflected in our analysis of UK-based FMCG companies. Each corporate website provides a large amount of information on the company's goals, achievements and projects driving progress towards climate and packaging objectives. However, what each company chooses to report is still too varied for any easy comparisons. Given the nature of each business, differences are to be expected. Nonetheless, greater standardisation is vital to ensuring continuing progress towards better environmental practices.

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