

# **Wholesale & Retail**

## **LEADERSHIP CHAIR**



Cape Peninsula  
University of Technology



*"Collaboration opens the window  
to a world of opportunities."*

**Project: 2019/26**

**Wastage:  
Its effect on green retail  
and its role in  
socio-economic improvement  
and food security**

APPLIED RESEARCH  
LEADERSHIP DEVELOPMENT  
SERVICE TO RETAIL COMMUNITY

Project: 2019/26

Wastage:

Its effect on green retail and its role in socio-economic improvement and food security

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## TABLE OF CONTENTS

GLOSSARY	viii
EXECUTIVE SUMMARY	x
CHAPTER 1: INTRODUCTION	1
1.1 BACKGROUND	1
1.2 RESEARCH PROBLEM	1
1.3 RESEARCH OBJECTIVES	2
1.4 DEFINING RETAIL AND WASTE	2
CHAPTER 2: LITERATURE REVIEW	4
2.1 FRAMING THE CONTEXT	4
2.2 POLICY FRAMEWORK	9
2.2.1 Global Policy Framework	9
2.2.2 Global Good Practice (Food Waste)	11
2.2.3 Global Good Practice (Packaging Waste)	13
2.2.4 South African National Policy	15
2.3 GLOBAL RETAIL BEST PRACTICE	17
2.3.1 Reducing Food Waste	18
2.3.2 Reducing Packaging Waste	20
2.4 GREEN RETAIL PRACTICES IN SOUTH AFRICA	21
2.5 CHAPTER CONCLUSION	26
CHAPTER 3: METHODOLOGY	28
3.1 RESEARCH DESIGN	28
3.2 RESEARCH INSTRUMENTS	28
3.3 DATA ANALYSIS	34
CHAPTER 4: FINDINGS	35
4.1. FINDINGS FROM SURVEYS	35

4.1.1 Government Support Required	46
4.1.2 Recommendations for Retailers	47
4.2 FINDINGS FROM INTERVIEWS	49
4.2.1 Challenges in Retail Waste Reduction	49
4.2.1.1 Food Waste: Challenges and Drivers	49
4.2.1.2 Plastic and Paper Packaging Waste: Challenges and Drivers	51
4.2.2 Institutional and Retail Initiatives	52
4.2.2.1 Institutional Initiatives	52
a) Food Waste Voluntary Agreement	53
b) South African Alliance to End Plastic Pollution in the Environment	54
c) South African Plastics Pact	54
4.2.2.2 Retailer Initiatives	55
a) Global Retailer Initiatives	56
b) South African Retailer Initiatives	57
4.2.3 Socioeconomic Impact of Waste on Livelihoods	57
4.2.4 Recommendations	58
CHAPTER 5. DISCUSSION	60
5.1 THE PROBLEM	60
5.2 POLICY FRAMEWORK AND WASTE REDUCTION INSTRUMENTS	61
5.3 RETAILER INITIATIVES	63
5.3.1 Waste Reduction Initiatives: Food	63
5.3.2 Waste Reduction Initiatives: Paper and Plastic Packaging Waste	64
5.3.3 Education Initiatives	64
CHAPTER 6. RECOMMENDATIONS	66
6.1 Recommendations for Retailers	66
6.2 Recommendations for Government	72
CHAPTER 7. CONCLUSION	73

BIBLIOGRAPHY	74
APPENDICES	83
APPENDIX 1. GREEN RETAIL CHECKLIST	83
APPENDIX 2. GLOBAL POLICY BEST PRACTICE	85
APPENDIX 3. SOUTH AFRICAN POLICY FRAMEWORK	88
APPENDIX 4. REDUCING FOOD WASTE	90
APPENDIX 5. REDUCING PACKAGING WASTE	93
Fast-Moving Consumable Goods	93
Clothing, footwear & accessories	97
APPENDIX 6. GREEN RETAIL PRACTICES IN SOUTH AFRICA	101
APPENDIX 7: ELECTRONIC QUESTIONNAIRE	108
APPENDIX 8: INTERVIEW GUIDING QUESTIONS	113
Industry Association Questions	113
Waste Management Company Questions	114
APPENDIX 9: ETHICAL CLEARANCE	115
APPENDIX 10: TURNITIN ORIGINALITY REPORT	116

## LIST OF FIGURES

Figure 1 Percentage of food waste generated at each stage of the food value chain .....	6
Figure 2 Global Good Practice (Food Waste) .....	12
Figure 3 Global Good Practice (Packaging Waste) .....	14
Figure 4 South African National Policy .....	15
Figure 5 Location of survey respondents .....	29
Figure 6 Size of respondent company .....	30
Figure 7 Retail category of respondent .....	31
Figure 8 Respondent position within the company .....	32
Figure 9 Is the respondent directly responsible for waste management? .....	33
Figure 10 Who manages your company's paper and plastic waste? .....	35
Figure 11 Who manages your company's food waste? .....	36
Figure 12 Appointed waste management companies .....	37
Figure 13 Are you implementing waste reduction initiatives? .....	38
Figure 14 Are you implementing education programmes and/or awareness campaigns? .....	40
Figure 15 Are you implementing green building initiatives? .....	41
Figure 16 Top 2 reasons for implementing green initiatives .....	42
Figure 17 Do you have waste reduction targets? .....	43
Figure 18 What do you have targets for? .....	44
Figure 19 Who sets your targets? .....	45
Figure 20 Challenges in implementing green initiatives .....	46
Figure 21 Institutional Initiative Map .....	53
Figure 22 Targets for the Plastics Pact .....	55

## LIST OF TABLES

Table 1 Major Drivers of Food Waste .....	7
Table 2 Sustainable Development Goals .....	10
Table 3 Chemical and Waste Phakisa Initiatives .....	17
Table 4 Packaging waste reduction initiatives .....	20
Table 5 South African food and packaging waste reduction initiatives .....	23
Table 6 Retailer Guidelines .....	67
Table 7 Government Guidelines .....	72

## GLOSSARY

APCO	Australian Packaging Covenant Organisation
CCME	Canadian Council of Ministers of the Environment
CDP	Carbon Disclosure Project
CGCSA	Consumer Goods Council of South Africa
CPUT	Cape Peninsula University of Technology
CSIR	Council for Scientific and Industrial Research
DC	Distribution Centre
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
dti	Department of Trade and Industry
EEA	European Environment Agency
EPR	Extended Producer Responsibility
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FMCG	Fast Moving Consumable Goods
FWVA	Food Waste Voluntary Agreement
GHG	Greenhouse Gas
IKEA	Ingvar Kamprad Elmtaryd Agunnaryd
IndWMPs	Industry Waste Management Plans
KPI	Key Performance Indicator
M&S	Marks and Spencer
MEF	Ministry of Environment and Food of Denmark
NEMA	National Environmental Management Act
NEMWA	National Environment Management Waste Act No. 59 of 2008
NGO	Non-Governmental Organisation



NPO	Non-Profit Organisation
NWMS	National Waste Management Strategy
PBO	Public Benefit Organisation
PET	Polyethylene Terephthalate
SA	South Africa
SAPRO	South African Plastic Recycling Organisation
SDGs	Sustainable Development Goals
UK	United Kingdom
UN	United Nations
UNEP	United Nations Environment Programme
USA	United States of America
USD	United States Dollar
VA	Voluntary Agreement
W&RSETA	Wholesale and Retail Sector Education and Training Authority
WHL	Woolworths Holding Limited
WRAP	Waste and Resource Action Plan
WRLC	Wholesale and Retail Leadership Chair
WWF	World Wide Fund for Nature
YMCA	Young Men's Christian Association

## EXECUTIVE SUMMARY

The retail sector produces significant wastage in the form of both packaging (particularly plastic, paper and cardboard) and food waste, and as such, has a particularly important role in addressing packaging and food waste in South Africa (SA). Pressure is mounting on both manufacturers and retailers to reduce waste, increase recycling rates, and educate customers to be more environmentally conscious. Reducing food and packaging waste not only has a positive environmental impact but has the potential to create new value chains and employment opportunities to improve the socio-economic condition of many South Africans, and significantly address food security issues.

It is within this context that the Wholesale and Retail Leadership Chair conducted this study in order to identify what is currently being done by the retail sector to reduce wastage and develop guidelines to assist South African retailers to adopt a more sustainable, green approach to wastage. The research design was predominantly qualitative and consisted of both primary and secondary research. Secondary (desktop) research included a review and analysis of research reports, online articles and academic journal articles. Primary research consisted of a combination of interviews with a selection of key stakeholders, and an electronic survey with a broader stakeholder grouping comprising retailers.

The literature review partly consisted of an international best practice policy review. The policy review found that the main global policies directed at reducing food waste and food insecurity and protecting the natural environment are the Sustainable Development Goals. Some of the key implications for retailers of the global policy framework in relation to food waste are:

- Education and awareness around date labelling,
- Tax incentives and subsidies to encourage the donation of food waste to charities and food banks, and
- Importance of industry to drive their own food waste initiatives.

Some of the key implications for retailers of the global policy framework in relation to packaging waste are:

- Partnerships between industry and government to drive sustainable packaging initiatives,
- Working with packaging manufacturers to design more sustainable packaging,
- Facilitate take-back of packaging with producers,

- Investigate deposit-return schemes and other incentives, and
- Invest in R&D around sustainable packaging solutions in light of the potential ban of single-use plastics in South Africa.

South Africa is governed by numerous pieces of legislation that shape the waste management and recycling landscape. Of particular relevance to the retail sector, the National Waste Management Strategy (NWMS) calls for the private sector to minimise the generation of waste and take responsibility for their products throughout the product's life cycle. Furthermore, the Chemical and Waste Phakisa has developed '3 Feet Plans' which have relevance to waste in the retail sector. South African policy in this space is currently evolving in significant ways, as such, it is recommended that retailers keep a close eye on developments. One way to keep abreast is through taking part in three significant waste reduction initiatives, namely, the Food Waste Voluntary Agreement (FWVA), the SA Alliance to End Plastic Waste ('Alliance'), and the SA Plastics Pact ('Pact').

The second part of the literature review considered initiatives being led by retailers. Some of the key initiatives include:

- Implementation of technology that assists with waste reduction, reuse and recycling,
- R&D for packaging redesign,
- Partnerships with NPOs,
- Standardisation across the industry (e.g. food labels),
- Converting waste into renewable energy,
- Packaging reduction throughout the supply chain,
- Take-back and deposit return schemes,
- Introducing reusable and recyclable options for consumers,
- Improving ease of recycling, and
- Education/awareness programmes directed at consumers.

Interview survey findings added to the above literature review findings through providing updated reports and initiatives. Findings showed that most retailers want to increase green retailing, but many aren't implementing any initiatives and don't have green retailing plans or targets in place. Some of the challenges being faced by retailers include a lack of waste reduction and recycling options, insufficient government support, consumer and supplier preferences and lack of funds.

The guidelines developed through this study aim to guide retailers towards increasing green practices. Guidelines provide strategies for green retailing such as:

- Increasing sustainability along the supply chain,
- Putting pressure on producers to design for end-of-life,
- Reducing single-use and unnecessary packaging in-store,
- Greening buildings and offices,
- Shifting organisational culture to make green retailing easier and more effective,
- Preventing consumer waste through:
  - Consumer education and standardising consumer information,
  - Practices that prevent over-purchasing, and
  - Increasing recycling and re-use options for consumers, as well as
- Collaborating and forming partnerships with industry stakeholders.

It is acknowledged that there are fundamental challenges raised that need to be addressed for retailers to be able to follow the guidelines. For this reason, recommendations for government have also been developed, which include

- Implementation of awareness campaigns,
- Better monitoring, evaluation and enforcement,
- Providing incentives and financial support,
- Developing sound policy and strategies,
- Developing the waste value chain,
- Investing in infrastructure, and
- Creating partnerships.

Both government and retailer guidelines suggest a waste reduction approach that considers the entire product lifecycle, promotes collaboration and encourages further research and development and monitoring and evaluation in the waste reduction space. Adoption of the guidelines/recommendations should lead to more effective and expansive green retailing, ultimately impacting on improved food security and job creation within the high-potential waste economy.

# **CHAPTER 1: INTRODUCTION**

## **1.1 BACKGROUND**

The Cape Peninsula University of Technology (CPUT), through the Wholesale and Retail Leadership Chair (WRLC), appointed Lumec to undertake a research study titled “Wastage: Its effect on green retail and its role in socio-economic improvement and food security”. As the title suggests, the research study calls for an assessment of wastage within the South African retail sector in order to determine the impact on green retail practices, food security and socio-economic improvement.

## **1.2 RESEARCH PROBLEM**

The retail sector produces significant wastage in the form of both packaging (particularly plastic, paper and cardboard) and food waste, while consuming resources such as water and electricity. Globally, national governments are placing pressure on industry to reduce all forms of wastage via policy instruments and encouraging partnerships towards creating a more circular economy. Industry is also experiencing direct pressure from consumers to reduce waste and create more sustainable solutions.

In relation to food waste, many leading nations are working towards the Sustainable Development Goal (SDG) of halving food waste by 2030 through direct bans on disposing of food waste, as well as subsidies and tax reforms to encourage greater donations of food waste to charities and food banks, and through the implementation of food waste strategies to address challenges such as date labelling, supply chain inefficiencies, and adoption of new technologies. With regards to packaging waste, the retail sector has a significant role in reducing wastage. Globally, policy directives are driving the need for industry to reduce packaging waste, particularly plastic waste, and implement more sustainable packaging solutions. Partnerships between government and industry are key to driving such initiatives, however, more direct policy direction from government, and more direct action from retailers, has been significant in starting to reduce waste. Leading global nations have implemented legislation such as plastic bans (including Kenya and Rwanda), have encouraged the use of deposit-return schemes and other similar incentives, and through extended producer responsibility (EPR), driven partnerships between retailers and manufacturers to design more sustainable packaging and take-back of packaging by manufacturers.

In South Africa, pressure is mounting on both manufacturers and retailers to reduce waste, increase recycling rates, and educate customers to be more environmentally conscious. The national legislative framework (i.e. The National Environmental Management Act, the National Environmental Management Waste Act, and National Waste Management Strategy) has culminated in the development of extended producer responsibility and industry waste management plans, and activities such as the recent announcement by the Western Cape Government to ban all organic waste to landfill by 2027, will have a direct impact on the activities of retailers in relation to reducing both packaging and food waste.

Although a number of large retailers in South Africa are driving sustainability initiatives (such as donation of food waste to non-governmental organisations [NGOs] and investigating more sustainable packaging solutions), a lot more can be done by the sector to contribute towards Sustainable Development Goals and other local policy directives and targets. Reducing food and packaging waste not only has a positive environmental impact (i.e. reduction of greenhouse gases) but has the potential to create new value chains and employment opportunities towards improving the socio-economic condition of many South Africans. In addition, reducing food waste also has the potential to significantly address food security issues.

### **1.3 RESEARCH OBJECTIVES**

In line with the background and the research problem identified above, the main research objectives of this study are to:

- Identify what is currently being done by the retail sector to reduce wastage in the broad sense, e.g. food, packaging, electricity use, recycling and education.
- Identify how a sustainable, green approach by retailers can contribute to South Africa's food security and socio-economic improvement.
- Develop a model, template or 'guidelines' to assist South African retailers to adopt a more sustainable, green approach to wastage.

### **1.4 DEFINING RETAIL AND WASTE**

The following definitions will be used to guide the research as per the objectives above and assist to define the research scope.

'Retail' is considered to include retailers that can generally be found within retail centres selling the following products:

- Fast-moving consumer goods (FMCG) such as food and beverages, toiletries, and other consumables,
- Clothing, footwear and accessories,
- Household goods such as furniture and homeware,
- Hardware stores/outlets, and
- Electronic goods.

Products that will be excluded include:

- E-commerce,
- Fast-food outlets and restaurants,
- Petroleum, and
- Jewellery.

As such, 'waste' is considered to include:

- Packaging waste (paper, cardboard and plastic), and
- Food waste (prepared and unprepared food waste).

## CHAPTER 2: LITERATURE REVIEW

### 2.1 FRAMING THE CONTEXT

The trend towards 'green retailing' is increasing globally, predominantly, in response to climate change. Green retailing is defined as a management approach that aims for environmental protection, cost reduction and increased revenue simultaneously (Sinha, Chaudhuri and Dhume, 2019). Green retailing takes into account:

- The entire supply chain,
- Logistics,
- Facilities and infrastructure,
- Customer facing components and products, and
- Post-consumer behaviours.

According to Naidoo and Gasparatos (2018), the main drivers of corporate environmental sustainability in retail are environmental policy from global institutions and national governments; internal and external pressure from stakeholders such as consumers, top management and the media; and the potential impact on profitability. In most cases, green retailing reduces costs and increases revenue for the retailer through:

- Increasing efficiencies along the product supply chain,
- Reducing unnecessary packaging and product waste,
- Reducing the use of electricity and other utilities, as well as
- Providing a new marketing avenue to attract consumers who are conscious about sustainability.

Furthermore, as a growing trend, green retailing offers opportunities for new businesses who can assist reduce, recover and benefit waste for retailers.



“According to the Department of Environmental Affairs (DEA) (2017), the waste economy contributed ~R24.3 billion to the South African GDP in 2016. It provided 36 000 formal jobs and supported ~80 000 informal jobs/livelihoods. A further R11.5 billion per year could be unlocked by 2023 by diverting up to 20 million tonnes of waste. The anticipated spin-offs could include 45 000 additional formal jobs and 82 000 indirect jobs, as well as the creation of 4 300 SMMEs” (GreenCape, 2017:1).

Retailers have a large role to play with regard to the generation of packaging waste, which means that retailers have the opportunity to significantly contribute to reducing environmental impact and growing the waste economy. Results from the 2018 Brand Audit Report which involved 239 clean-ups in 42 countries across 6 continents, found that the top three polluters (in volume) were Coca-Cola, PepsiCo and Nestle (Break Free From Plastic, 2018). Greenpeace USA (2019) argues that the intermediary role of retailers and their influence on both consumers and brands is critical in either worsening the plastic waste problem or aiding to reduce plastic waste.

According to global statistics for 2011-2018 from Euromonitor International, food and beverages packaging accounts for 92% of all retail packaging in terms of volume (Legl, 2019). In South Africa, approximately 3.8 million tonnes of packaging waste<sup>1</sup> is consumed annually, of which 2.2 million tonnes is recycled (58%) (Packaging SA, 2018: 3). Paper is the highest volume of packaging consumed (approx. 2 million tons), of which 67% is recycled. Plastic is the second highest (approx. 870 tons), of which 45.5% is recycled (Packaging SA, 2018: 34)<sup>2</sup>.

*“Around 13% of people worldwide are malnourished. How much food would it take to meet their caloric needs? Just 3% of the global food supply. To put that in context, 30%-50% of the world’s food gets lost post-harvest, wasted in global supply chains, or scraped off dinner plates and into kitchen bins. Hunger could, in effect, be ended with just 10% of the food that never gets eaten” (Raworth, 2018: 17).*

Waste directly results in the following negative impacts:

- Reduced air quality due to greenhouse gas emissions and odours from landfills,
- Reduced water quality due to leachate from landfills,

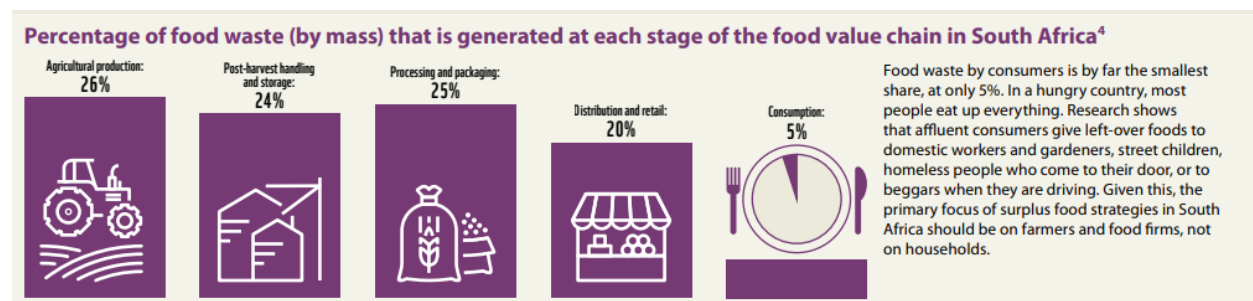
<sup>1</sup> In this instance, packaging refers to “all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer” (Packaging SA, 2018: 11).

<sup>2</sup> Figures are for the 2017 year (latest report on the Packaging SA website).

- Reduced land available for residential, recreation and commercial uses due to landfills and dumps,
- Litter and illegal dumping which is unsightly and has a negative impact on natural ecosystems, and
- Costly clean-ups and waste infrastructure which diverts municipal finances away from other necessary functions.

According to the Food and Agriculture Organisation of the United Nations (2018), the percentage of severely food insecure<sup>3</sup> people in South Africa has increased from 22% in 2015 to 29% in 2017. Despite this, in 2013, food waste amounted to about 10 million tonnes from an estimated 31 million tonnes of food available (Nahman & de Lange, 2013: 8). According to the WWF, 20% of this food waste is generated in the distribution and retail leg of the food value chain.

**Figure 1 Percentage of food waste generated at each stage of the food value chain**



**Source: Rivett-Carnac & von Bormann (2018:5)**

The Council for Scientific and Industrial Research (CSIR) recently published Food Waste Prevention and Management guidelines for the Department of Environmental Affairs, Forestry and Fisheries (DEFF), which highlights that food waste creates a triple negative effect:

1. "It negatively impacts on the economy as all water, electricity, seeds, fertiliser and other inputs used to produce the food is wasted if the food goes to waste. Food wastage therefore also impacts on water security.
2. It contributes to food insecurity by increasing the cost of food as the cost of the wastage gets factored into the prices of food, making food unaffordable for poor people.

<sup>3</sup> Severe food insecurity is defined as people who have run out of food and, at worst, gone a day (or days) without eating (FAO, 2018).

3. It contributes to climate change by increasing greenhouse gas emissions into the atmosphere. The decomposition of wasted food disposed of at landfill generates methane, a greenhouse gas that is more effective at trapping heat in the atmosphere than carbon dioxide” (CSIR, 2019).

According to the same guidelines, the CSIR has highlighted the major drivers of food waste at the distribution stage of the supply chain, which includes wholesale markets, supermarkets, retailers, and fish markets. These drivers are identified below, along with the cause and result, and provide an initial indication of the areas where retailers can start to address food waste. As identified in Section 2.3 when focussing on global and national best practice, many retailer interventions are aimed at addressing these drivers, particularly in relation to date labelling, ordering systems, and cold chain improvements.

**Table 1 Major Drivers of Food Waste**

Driver	Cause	Result
Distribution system	<ul style="list-style-type: none"> <li>• Long travel distances</li> <li>• Sub-optimal logistics</li> <li>• Uneven road surfaces</li> <li>• Road accidents</li> </ul>	Reduced shelf life Discarded
Date labels	<ul style="list-style-type: none"> <li>• Food not sold in time</li> <li>• Food items not used in time</li> <li>• Poor stock rotation in-store/depot</li> </ul>	Donations Discarded
Ordering systems	<ul style="list-style-type: none"> <li>• Over delivery</li> <li>• Ordered too much</li> </ul>	Donations Discarded
Packaging	<ul style="list-style-type: none"> <li>• Packaging failures</li> </ul>	Discarded
Product recalls	<ul style="list-style-type: none"> <li>• Food safety concerns</li> <li>• Compromised quality</li> </ul>	Condemnation
Quality specifications	<ul style="list-style-type: none"> <li>• Product rejected for being below quality</li> </ul>	Donations/Discarded
Cold chain failures	<ul style="list-style-type: none"> <li>• Fridges and freezers not operated at optimum temperatures</li> <li>• Power outages</li> <li>• Consumers moving stock out of cold chain areas</li> </ul>	Condemnation
Retail over-stocking	<ul style="list-style-type: none"> <li>• Company policies requiring full shelves at all times</li> </ul>	Donations/Discarded
Failure to distribute edible surplus	<ul style="list-style-type: none"> <li>• Reputational concerns</li> <li>• Strict liability</li> <li>• Logistical challenges for redistribution</li> </ul>	Condemnation Discarded

Source: CSIR, 2019

According to the World Wide Fund for Nature (WWF), in terms of developmental impact, in the short-term the retail stage presents the greatest potential for extracting large and diverse volumes of surplus food due to the fact that:

- “Retailers account for a significant volume of food and already have demonstrated an appetite to donate surpluses,
- Retailers’ food is already prepared and packaged for consumption and represents a diversity of food items which can better support nutrition, than single commodity producers,
- Retailers have a broad geographic reach,
- A small number of retailers dominate the market which allows for fewer surplus food partnerships and less coordination than with the many, smaller food firms, and
- Retailers already have some data on surplus foods and are improving the level of detail and identification of surpluses in their operations” (Rivett-Carnac & von Bormann, 2018:16).

Although it should be noted that reducing food surpluses is the first goal, where surplus does exist there is potential to significantly reduce food insecurity. Based on Food Forward<sup>4</sup> estimates, approximately 3300 meals can be served per tonne of food surplus (Rivett-Carnac & von Bormann, 2018:17). This equates to a potential of 132 million meals a year or 360 000 meals a day if all current surplus was donated by major grocery retailers in South Africa.

Some recommendations highlighted in the CSIR food waste guidelines are highlighted below, as these are particularly relevant to retailers and the eventual outcomes of this research:

- “Support local producers to keep transport distances for distribution to a minimum
- Avoid uneven road surfaces where possible to reduce bruising of fresh fruit and vegetables
- Optimise ordering systems, cold chain management, and stock rotation
- Do away with overstocking, it is okay if the shelf is not always filled to the brim

---

<sup>4</sup> Food Forward is an NPO that gathers surplus food from retailers in South Africa and produces meals for food insecure people.

- Reduced price offering on stock nearing its sell-by date to entice consumers to buy the food
- In-store processing of produce that is past 'sell-by' but within 'use-by' date into readymade salads, bakery items, prepared meals etc.
- Donate surplus food to organisations such as Food Forward South Africa” (CSIR, 2019).

Within the South African context of a growing population, growing middle class and growing retail trade sales, green retailing has the potential to significantly reduce waste and the associated negative impact on the environment, and improve the socio-economic conditions of South African citizens. Several South African retailers are making great strides in green retailing and are meeting global green retailing standards. The purpose of this research is to use this and other global best practice to develop guidelines for all retailers to implement and improve green retailing practices. The following subsections unpack the policy framework within which green retailing operates and provide global and local examples of how green retailing is being successfully implemented.

## **2.2 POLICY FRAMEWORK**

### **2.2.1 Global Policy Framework<sup>5</sup>**

There is no overarching global legislation or policy framework that dictates national waste reduction and food security policy, particularly in relation to the impact of the retail sector. The United Nations (UN) SDGs are however a shared call to action that was adopted by UN member states in 2015 towards ending poverty, protecting the planet, and ensuring peace and prosperity for all by 2030 (United Nations, 2015). When considering the retail industry, and its role in reducing waste towards greater food security and socio-economic improvement, there are numerous SDGs that provide an overarching global framework to achieve this. The following SDGs are important to consider within this context. The specific targets for each SDG that have relevance within this research are also indicated.

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<sup>5</sup> Full global policy write-up in Appendix 3

**Table 2 Sustainable Development Goals**

<b>SDG</b>	<b>Targets</b>
<b>SDG 2:</b> End hunger, achieve food security and improved nutrition and promote sustainable agriculture	2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
<b>SDG 12:</b> Ensure sustainable consumption and production practices	<p>12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses</p> <p>12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse</p> <p>12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</p>
<b>SDG 13:</b> Take urgent action to combat climate change and its impacts	13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
<b>SDG 14:</b> Conserve and sustainably use the oceans, seas and marine resources for sustainable development	14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

**Source: United Nations, 2015**

Essentially, these SDGs call for improved food security, a reduction in global waste and particularly food waste, an adoption of sustainable practices and reporting by large companies, reducing the impact of climate change, and reduced marine pollution. Waste generated within the retail sector, both packaging and food waste, contribute significantly towards the challenges that the above SDGs address, and such global targets will assist guide global initiatives to reduce waste and improve food security.

The European Union (EU) recently amended its Directive 2008/98/EC on waste management in order to enhance circular economy principles of waste management in Europe (Davies et al., 2018). Of particular relevance to retailers is the call for member states to implement measures to “encourage the development, production, marketing and use of products and components of products that are suitable for multiple use, that contain recycled materials, that are technically durable and easily repairable and that are, after having become waste, suitable for preparing for re-use and recycling”, and must address the entire life-cycle of a product, at all stages of the waste hierarchy, with potential for multiple recycling (European Union, 2018a:4).

### **2.2.2 Global Good Practice (Food Waste)**

In relation to food waste, the EU Directive 2008/98/EC on waste management calls for member states to promote the prevention and reduction of food waste across the supply chain, but also specifically at the retail and consumer level, “to achieve a Union-wide food waste reduction target of 30% by 2025 and 50% by 2030” (European Union, 2018a:6). Some suggested measures to reduce food waste include awareness campaigns (including the meaning of ‘use-by’ and ‘best-before’ dates), measuring progress in reducing food waste through a common methodology, exchange of good practices across the Union, and incentives for collection and distribution of unsold food across the supply chain (European Union, 2018a:6).

Some of the European nations that have been leading in relation to food waste legislation include Denmark, Norway, Italy and France. The key findings are identified in the image below:

**Figure 2 Global Good Practice (Food Waste)**

Denmark	<ul style="list-style-type: none"><li>• Launched numerous campaigns such as education around food waste, date labelling awareness, and encouraging collaboration between industrial kitchens and food producers (MEF, 2016)</li><li>• In 2016, launched a subsidy scheme with the aim of reducing food waste which was to be distributed to various initiatives that aim to address food waste throughout the supply chain (Lemos, 2017)</li></ul>
Norway	<ul style="list-style-type: none"><li>• In 2017, the Norwegian government and food industry entered in agreement towards the reduction of food waste in line with the SDGs. It calls on industry to measure, monitor and report on food waste; to cooperate and drive their own food waste reduction initiatives; implement consumer reduction initiatives; contribute towards food donations; and prepare dynamic actions plans (Norway, 2017)</li></ul>
France	<ul style="list-style-type: none"><li>• In 2016, France was the first nation to pass a law that stops retailers from throwing away and intentionally spoiling unsold food, but instead, requires them to donate food waste to charities and food banks - if violated, supermarkets can receive a fine or even jail time (McCarthy, 2016a)</li></ul>
Italy	<ul style="list-style-type: none"><li>• In 2016, Italy passed a law to reduce food waste which introduced tax reforms that make it easier to donate food, rather than penalties (McCarthy, 2016b)</li></ul>
Australia	<ul style="list-style-type: none"><li>• National Food Waste Strategy (2017) was introduced with implications for retail including creating enabling legislation to support food waste initiatives, adoption of new technologies, normalising food waste considerations into business practices, and connecting food waste sources to users (Australia, 2017:17)</li></ul>

Some of the key implications for retailers of the global policy framework in relation to food waste are:

- Education and awareness around date labelling,
- Tax incentives and subsidies to encourage the donation of food waste to charities and food banks, and
- Importance of industry to drive their own food waste initiatives.



### Case Study: A Food Loss and Waste Strategy for Canada

The Canadian strategy attempts to address food waste throughout the supply chain to “close the loop on food waste occurring during the production, processing, distribution and consumption of food, and supports the shift to a circular value chain” (ZeroWaste, 2018:6). The strategy essentially approaches the challenge of food waste by firstly preventing, then rescuing/recovering, and finally, recycling/ composting. Within the retail sector, learnings can be drawn from the first two approaches.

Within ‘prevention’, the strategy proposes the creation of a harmonised policy framework off which business can operate, reducing confusion of date labelling, exploring new evidence-based approaches to packaging to reduce food spoilage, developing new products and markets for food waste, and encouraging a culture shift and new behaviours (ZeroWaste, 2018:12-18). In relation to ‘recovery’, emphasis is placed on infrastructure and innovation (such as digital technologies to improve matching food donors to community organisations), improving tracking and distribution of food services, the removal of financial and legal barriers (specifically in relation to food donations by organisations), and finally, to expand the recovery of food waste into the conversion to animal feed (ZeroWaste, 2018:19-22).

### 2.2.3 Global Good Practice (Packaging Waste)

In 1994, prior to the above EU Directive 2008/98/EC on waste management, the European Union adopted the ‘Packaging and Packaging Waste Directive’. The Directive covers all packaging within the EU market as well as all packaging waste, from residential to industrial packaging and waste, and calls for national governments to ensure that systems are in place for the return and collection of used packaging (such as deposit-return schemes and other incentives) to encourage more effective reuse and recycling (European Union, 2018b:1). The Directive also suggests that bio-based recyclable packaging and compostable packaging are shown to be beneficial from a lifecycle perspective and present a new opportunity for member states (European Union, 2018b:2).

Some nations that have implemented specific packaging waste legislation include Denmark, Australia, Canada, Rwanda and Kenya. The key findings are identified in the image below:

**Figure 3 Global Good Practice (Packaging Waste)**

Denmark	<ul style="list-style-type: none"><li>• Launched numerous campaigns such as education around food waste, date labelling awareness, and encouraging collaboration between industrial kitchens and food producers (MEF, 2016)</li><li>• In 2016, launched a subsidy scheme with the aim of reducing food waste which was to be distributed to various initiatives that aim to address food waste throughout the supply chain (Lemos, 2017)</li></ul>
Norway	<ul style="list-style-type: none"><li>• In 2017, the Norwegian government and food industry entered in agreement towards the reduction of food waste in line with the SDGs. It calls on industry to measure, monitor and report on food waste; to cooperate and drive their own food waste reduction initiatives; implement consumer reduction initiatives; contribute towards food donations; and prepare dynamic actions plans (Norway, 2017)</li></ul>
France	<ul style="list-style-type: none"><li>• In 2016, France was the first nation to pass a law that stops retailers from throwing away and intentionally spoiling unsold food, but instead, requires them to donate food waste to charities and food banks - if violated, supermarkets can receive a fine or even jail time (McCarthy, 2016a)</li></ul>
Italy	<ul style="list-style-type: none"><li>• In 2016, Italy passed a law to reduce food waste which introduced tax reforms that make it easier to donate food, rather than penalties (McCarthy, 2016b)</li></ul>
Australia	<ul style="list-style-type: none"><li>• National Food Waste Strategy (2017) was introduced with implications for retail including creating enabling legislation to support food waste initiatives, adoption of new technologies, normalising food waste considerations into business practices, and connecting food waste sources to users (Australia, 2017:17)</li></ul>

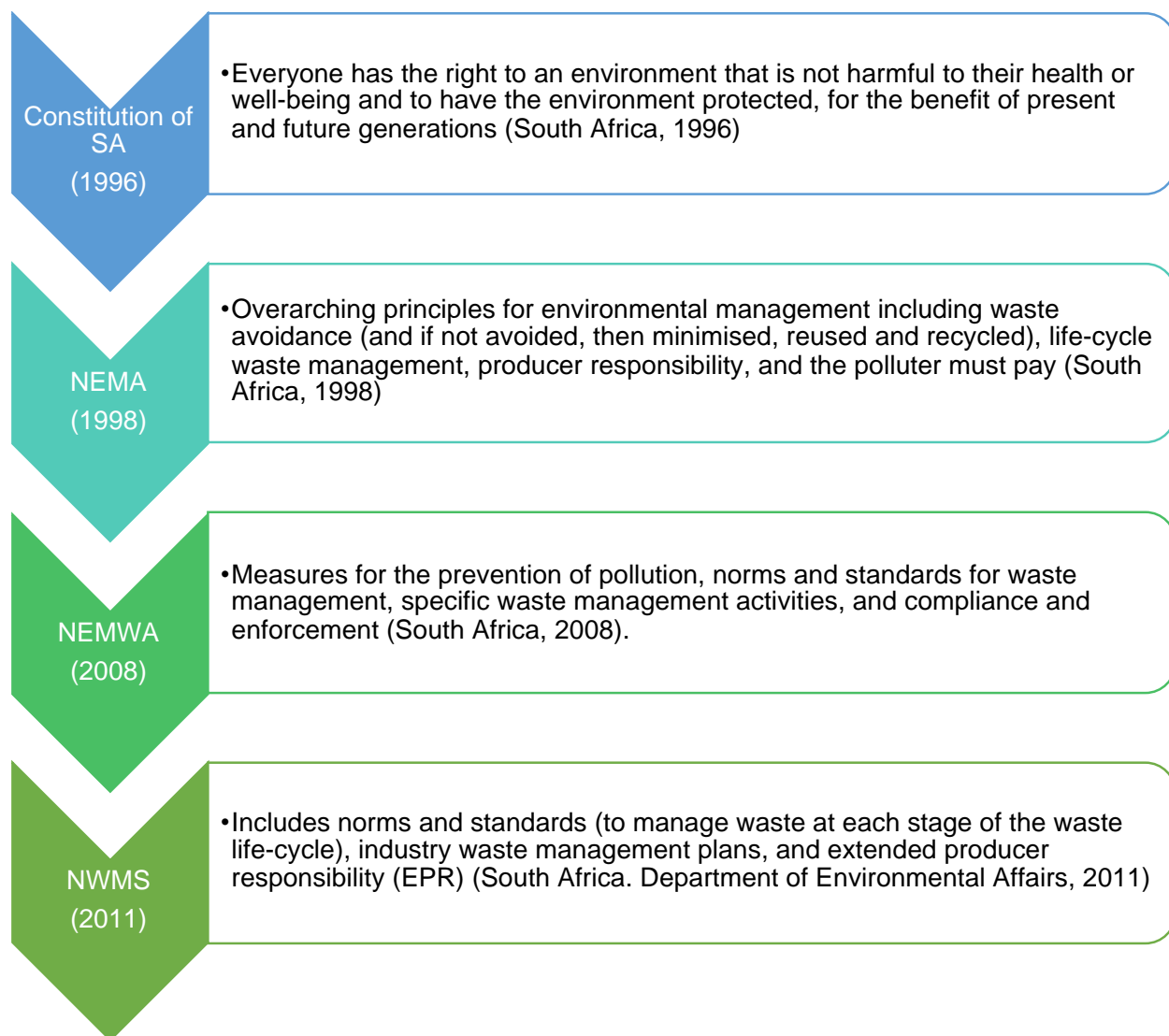
Some of the key considerations for retailers emanating from the global policy framework in relation to packaging waste are:

- Partnerships between industry and government to drive sustainable packaging initiatives,
- Working with packaging manufacturers to design more sustainable packaging,
- Facilitate take-back of packaging with producers,
- Investigate deposit-return schemes and other incentives, and
- Invest in R&D around sustainable packaging solutions in light of the potential ban of single-use plastics in South Africa.

## 2.2.4 South African National Policy<sup>6</sup>

South Africa is governed by numerous pieces of legislation that shape the waste management and recycling landscape. This section presents the key legislation, policy and strategy documents that have an influence on the retail sector and specifically, packaging and food waste. The image below displays the key outcomes of each piece of legislation.

**Figure 4 South African National Policy**



Of particular relevance to the retail sector, the National Waste Management Strategy (NWMS) calls for the private sector to minimise the generation of waste and take responsibility for their

<sup>6</sup> Full national policy write-up in Appendix 2

products throughout the product's life-cycle, including developing systems and facilities to take back and recycle waste at the end of a product's lifecycle, develop industry waste management plans (see below), and comply with the conditions and regulations (South Africa. Department of Environmental Affairs, 2011:8-9). Both NEMWA (National Environment Management Waste Act No. 59 of 2008) and NWMS made calls for the implementation of Extended Producer Responsibility (EPR) and development of Industry Waste Management Plans (IndWMPs). These are briefly discussed below, within the context of the retail sector.

NEMWA provides for mandatory EPR schemes which prescribe how waste streams (at the post-consumer stage) should be managed and the funding mechanisms which will enable this, and may be declared where voluntary IndWMPs "have failed to effectively manage a waste stream" (South Africa. Department of Environmental Affairs, 2011). Packaging waste was identified within the NWMS given that packaging comprises multiple waste streams, while the following are suggested as potential economic instruments (South Africa. Department of Environmental Affairs, 2011):

- Deposit refund scheme,
- Waste disposal tax,
- Product taxes, and
- Tax rebates and benefits.

IndWMPs are required in the case where an activity that generates waste affects more than one province or is conducted within more than one province, and can be voluntary or mandatory (South Africa, 2008:42). Seven industry waste management plans were received by The Department of Environmental Affairs for the paper and packaging industry by the due date of 5 September 2018 (South Africa. Department of Environmental Affairs, 2018). PackagingSA recently released an IndWMP for the packaging industry based on the EPR Model, within which it notes that retailers (including online retailers) are obligated parties to the plan – retailers must provide quarterly reports to PackagingSA on the amount of packaging imported (PackagingSA, 2018).

From January 2020 however, the DEFF announced that Section 28 of the Waste Act will be scrapped, and that IndWMPs will no longer be required. Rather, a new process will be established under Section 18 which will allow for industry-managed plans rather than government-managed plans. During the stakeholder focus group it was noted that DEFF has requested that retailers put

together extended producer responsibility plans, however, no additional information on this process is currently available.

In relation to the national government's Operation Phakisa<sup>7</sup>, the Chemical and Waste Phakisa has developed '3 Feet Plans' which provides specific initiatives to tackle industrial and municipal waste, waste minimisation, chemical and cross-cutting challenges. Of relevance to this research are the initiatives around meat waste, ugly-fruit awareness, packaging guidelines, and packaging EPR. These are summarised in the table below:

**Table 3 Chemical and Waste Phakisa Initiatives**

Initiative	Description
Ugly fruit Awareness	Consumer awareness campaign to use and consume ugly fruit
Packaging guidelines	Compilation/update of packaging design guidelines
Packaging EPR	Formalising the packaging industry producer responsibility plans

Also of importance to note, although not related to retail waste, are two initiatives that deal with agri-platforms to minimise food loss and zero meat production waste to landfill.

## 2.3 GLOBAL RETAIL BEST PRACTICE

Literature suggests that European markets have shown to be leaders in waste management (MEF, 2016; Norway, 2017; Denmark, 2015), therefore the majority of best practice examples are from European retailers. According to an European Environment Agency (EEA) Report (2019), waste prevention measures in EU member states are comprised mainly of informative measures (69%) such as awareness and education campaigns directed at various stakeholders, followed by market-based measures (36%) such as policies that encourage a change in consumer behaviour and business practices, 30% are voluntary agreements, 25% are regulatory measures, and lastly, 3% of the measure are related to financing.

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<sup>7</sup> <https://www.operationphakisa.gov.za/Pages/Home.aspx>

### 2.3.1 Reducing Food Waste

Globally, retailers are adopting numerous initiatives and approaches to work towards the goal 2 and goal 12 of the UN's SDGs. Several global best practice initiatives are summarised below. Appendix 3 provides greater detail on the initiatives being driven by leading nations globally.

- Global trends in food waste reduction show that non-profit organisations (NPOs) are crucial role players in ensuring that edible food is not discarded but is instead distributed to those who need it the most and diverted away from landfills through food donations from retailers. This is often a mechanism through which to absolve the donator from legal liability. To support food donations, governments may choose to introduce tax incentives for the donation of food that cannot be sold but is still safe to eat (Wunderlich and Martinez, 2018:337).
- In the processing and packaging phase, solutions for retailers may be to adopt packaging that enables customisation and reduction of food portions, minimise consumer confusion of labelling conventions by standardising labels across all food items, and invest in R&D or support innovations that aim to find new uses for trimmings and peels (Wunderlich and Martinez, 2018:337).
- Reduction of food prices as they approach their sell-by date, for example, as done by Tesco in the United Kingdom (UK).
- Partnerships between retailers, suppliers and NPOs to reduce food waste. An example is Denmark Against Food Waste which is a national partnership involving numerous retailers, NPOs and manufacturers such as Unilever and Nestle, where partners are encouraged to measure the amount of food waste they generate, publish the statistics and take corrective action to reduce the amount of food wasted.
- Technology is also helping retailers to reduce food waste. Food waste apps are gaining popularity because they aggregate information for consumers and make it easier for them to find discounted surplus food. Examples of these apps are Netto's own food waste app, which was initiated in the UK and is now in 9 countries; *Last Minute Sotto Casa* in Italy; *Too Good To Go*; and *Goodr*. Netto's food waste app gathers information from all of its stores, making it easier for its customers to know which of its stores have surplus food. In Italy's *Last Minute Sotto Casa*, retailers and individuals sign up to the app. When a grocery



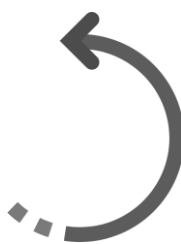
store or butcher has product items that they need to sell off at the end of the day, they advertise the discounted food on the app and individuals receive a notification. *Too Good To Go* hosts supermarkets, restaurants and bakeries. Individuals place an order with any of the retailers on the app and the retailer prepares a meal box made of surplus food, which has been discounted, and the individual can pick it up at a time that is determined by the retailer. *Goodr* securely tracks organisations' surplus food from pick-up to donation and provides a solution to organisations by improving charitable tax donations, reducing greenhouse gas emissions and getting surplus food to local communities in need.

- Technology to limit waste along the value chain – The Salling Group uses the SAP IT system to monitor waste throughout the food value chain, find the largest contributors to waste and create solutions that directly target the waste sources.
- Removal of 'best before' labels in favour of 'use-by' labels from fruits and vegetables was announced by the retailer Tesco in 2018. The 'best before' label indicates that the food quality may lower but it does not make the food inedible. Whereas, the 'use-by' label is usually on products such as meat and dairy and indicates a safety risk if consumed after its 'use-by' date (Hitchings-Hales, 2018).
- The Salling Group, in partnership with Danish Food Bank and DanChurchAid, established the first social supermarket in the Nordic region, called WeFood, which retails its products for between 50 and 70% less than normal retail prices and includes items such as fruits, vegetables, bread and tinned food (Salling Group, n.d.). The food sold in-store is surplus food that has been donated by The Salling Group and all the proceeds from this store are distributed globally to those in need.
- In the consumption phase, many of the potential solutions focus on customer education, including interpreting food labels and debunking the misconception that the physical appearance of food impacts the taste. Other alternatives for retailers that sell prepared food include giving customers the choice between full portions and half portions in order to minimise waste, while for other retailers it is crucial to improve forecasts and stock replenishment systems (Wunderlich and Martinez, 2018:337).
- Converting the surplus food that cannot be donated or sold into fertiliser or biogas.


### 2.3.2 Reducing Packaging Waste

In relation to reducing packaging waste, many retailers have adopted strategies based on circular principles, namely, redesign; reduce; reuse; recycle. Appendix 4 provides greater detail on the initiatives being driven by leading nations globally.

**Table 4 Packaging waste reduction initiatives**

Strategy	Initiatives
 <p><b>Redesign</b></p>	<ul style="list-style-type: none"> <li>• Redesign products so that they require less or no packaging. A good example of a retailer who achieved this many years ago is Lush Cosmetics (Borunda, 2019).</li> <li>• Redesign packaging, such as in the case of M&amp;S, who achieved a reduction of 37% for each bag of chips and popcorn by decreasing the amount of air in each bag without decreasing the amount of food in the bag (M&amp;S, 2019). Another example is IKEA, which increased the amount of waste materials used in the production of its product packaging. IKEA's TOMAT spray bottles are now only made of 50% virgin plastics and the other 50% is from IKEA's own shrink wrap waste.</li> <li>• Redesign packaging labels to simplify and standardise across retailers.</li> </ul>
 <p><b>Reduce</b></p>	<ul style="list-style-type: none"> <li>• Plastic-free aisles. Some supermarkets are still trialling plastic free aisles for a limited product range. Ekoplaza, a Dutch retailer, became the first retailer to roll out a plastic-free aisle in 2018 which included over 700 products.</li> <li>• Elimination of plastic straws in favour of paper straws and replacing plastic cutlery with wooden alternatives.</li> <li>• Introduction of refill containers for certain product lines.</li> <li>• Zero-waste stores are becoming more prevalent. Nada Grocery was the first zero-waste grocery store in Canada. The Clean Kilo is the UK's largest zero-waste grocery store.</li> <li>• Elimination of plastic sleeves and using recycled paper packaging alternatives in clothing retail. Tonle is a retailer that has adopted a zero-waste model and avoids all textile and packaging waste.</li> </ul>
 <p><b>Reuse</b></p>	<ul style="list-style-type: none"> <li>• Elimination of single-use plastic shopping bags and introducing plastic bags made from recycled plastic, reusable paper bags or other bags from recycled materials.</li> <li>• In prepared food supermarket cafes, retailers such as M&amp;S charge a lower price if shoppers bring their own containers. The same is applied to hot beverages.</li> <li>• Store return policies for containers in order to encourage reuse (both reimbursed and not) which is a policy that has been adopted by US retailer Meow Meow Tweet.</li> </ul>



Strategy	Initiatives
 <p><b>Recycle</b></p>	<ul style="list-style-type: none"> <li>• Awareness campaigns to educate shoppers and consumers about recycling. For instance, M&amp;S has partnered with Wastebuster UK to teach the next generation of shoppers about recycling and has also placed recycling vending machines in primary schools.</li> <li>• Promote recycling by increasing the convenience for shoppers. For example, placing recycle stations at supermarkets.</li> <li>• Increase the recovery rate in order to raise the recycling rate by introducing cash-on-return plans. Countries like Germany, which are seen as leaders in recycling, have had such systems since 2003 (Oltermann, 2018). The system uses either reverse vending machines which scan the barcode of plastic and glass bottles and cans to ensure that they are on the supermarkets' product list. The machine gives you a voucher which adds up the money earned from returning the empty bottles which can be shown at the till for cash (Oltermann, 2018).</li> <li>• Textiles and garment take-back schemes (for reuse and recycling). These have been initiated by both IKEA and H&amp;M.</li> </ul>

In order to increase transparency, accountability and encourage efficiency, some retailers have set targets that are in line with achieving the UN's SDGs. For example:

- M&S has set a target to recycle 100% of recyclable plastic packaging by 2022. They also aim to remove all black plastic packaging by 2020 because it is notoriously difficult to recycle.
- IKEA is working towards a target of being a completely circular business by 2030 and halving food waste by 2020.
- H&M says that by 2025 it will only use packaging that is either recyclable, reusable or compostable and will reuse or recycle all their own packaging waste. Furthermore, the retail group has set a target that by 2030 they will only use materials that have been sourced sustainably or are 100% recycled.

## 2.4 GREEN RETAIL PRACTICES IN SOUTH AFRICA

Broll (2019) provides a brief overview of sustainability in the retail sector, including activities being undertaken by retailers to reduce plastic and paper packaging. The introduction of a charge on plastic bags in 2003 that aimed to increase recycling, has not changed the behaviours of most South African (SAn) consumers. 2017/18 data suggests that the plastic bag has formed part of customers' shopping baskets, with over 2 billion units being sold, generating revenue of R232

million in levies for the SA government, and making retailers around R1.2 billion (Broll, 2019:5). Most SA retailers still offer plastic bags because retailers such as Pick n Pay and Woolworths received a backlash from shoppers when they felt like they were forced to buy reusable shopping bags which resulted in the retailers reintroducing plastic bags (Broll, 2019:5). Other retailers such as Cotton On have been more successful in removing plastic bags from their stores (Broll, 2019:5).

Three SAn retailers (out of 650 companies globally and across sectors) have joined the science-based targets initiative which was established by the Carbon Disclosure Project (CDP), UN Global Impact, the World Resources Institute and WWF (Science Based Targets, n.d.). These retailers are Pick n Pay, Spar and Woolworths. The aim of this initiative is to help companies to reduce their greenhouse gas emissions by adopting scientific methodologies to target setting (Science Based Targets, n.d.). More recently, another initiative, the SA Plastics Pact, was launched 30 January 2020 in SA to address plastic waste. This initiative was developed by WWF SA, the South African Plastic Recycling Organisation (SAPRO) and WRAP, and founded by Clicks Group, Coca-Cola Africa, Danone, Distell, HomeChoice, Massmart, Myplas, Nampak Rigid, Pick n Pay, Polyoak, Polyplank, Shoprite Group, SPAR, Spur Corporation, The Foschini Group, Tigerbrands, Tuffy, Unilever, ADDIS, Waste Plan and Woolworths (Supermarket & Retailer, 2020b). Several associations as well as the National DEFF are stakeholders in the SA Plastics Pact.

Numerous retailers, namely Food Lover's Market, Pick n Pay, Shoprite, Spar, Woolworths and Clicks have partnered with WWF to establish uniformity in recyclable paper and plastic packaging labels (on-package recycling labels – OPRLs) in order to decrease confusion amongst their customers about what is and is not recycled (Caboz, 2019). The labels will be simplified to only say whether a packaging item is recycled or not recycled, and a product's packaging is defined as recycled if it is widely recycled in SA (Caboz, 2019).

Food surplus organisations such as Foodeez also play a major role in providing a solution to the problem of surplus food that is faced by retailers, manufacturers and wholesalers. Foodeez purchases non-perishable food items from retailers, manufacturers and wholesalers and resells them through various retailers in the Cape Town area (Rivett-Carnac & von Bormann, 2018:12). This business model has grown considerably in Cape Town as evidenced by the fact that Foodeez now employs over 60 people, has a warehouse, 5 retail stores and conducts 30 000 transactions per month (Rivett-Carnac & von Bormann, 2018:12).

The table below shows the various initiatives being undertaken by South African retailers to reduce food waste, improve food security and reduce paper and plastic packaging waste. Appendix 5 provides more detail about each of the retailers and their specific initiatives and targets.

**Table 5 South African food and packaging waste reduction initiatives**

<b>Retailers</b>	<b>Food Waste Initiatives</b>	<b>Packaging Waste Initiatives</b>
<b>Food Lovers Market</b>	<ul style="list-style-type: none"> <li>Minimises food waste by purchasing directly from the farmer</li> <li>Makes food donations and surplus food donations to NPO partner (Food Forward SA)</li> </ul>	<ul style="list-style-type: none"> <li>Paper bags and recycled boxes as an alternative to single-use plastic shopping bags.</li> <li>Eliminated plastic straws and only hands out paper straws upon request.</li> <li>Encourages customers to bring their own containers for certain product items to reduce their own packaging use</li> </ul>
<b>Massmart</b>	<ul style="list-style-type: none"> <li>Makes surplus food donations to NPO partner (Food Forward SA &amp; Gift of the Givers)</li> </ul> <p><b>TARGETS</b></p> <ul style="list-style-type: none"> <li>Based on SDGs</li> </ul>	<ul style="list-style-type: none"> <li>Increasing recycling facilities for paper, plastic and cardboard.</li> <li>Promoting programmes that convert waste to energy and waste to compost.</li> <li>Improving the recyclability of their store brand packaging for products such as mBrand household cleaning products.</li> <li>Encouraging their suppliers to adopt more environmental manufacturing and packaging practices</li> </ul> <p><b>TARGETS</b></p> <ul style="list-style-type: none"> <li>Based on SDGs</li> </ul>
<b>Mr. Price Group</b>	Not applicable	<ul style="list-style-type: none"> <li>Introduced a paperless administration system which saved 2 687km of paper in 2018/19.</li> <li>Reducing plastic packaging from product lines such as duvets and cushion inners.</li> </ul> <p><b>TARGETS</b></p> <ul style="list-style-type: none"> <li>Based on SDGs</li> </ul>
<b>Pepkor</b>	Not applicable	<ul style="list-style-type: none"> <li>Plastic shopping bags are made from recycled materials.</li> </ul>

Retailers	Food Waste Initiatives	Packaging Waste Initiatives
		<ul style="list-style-type: none"> <li>• Reuse of in-store hangers.</li> <li>• Recycling paper, cartons (reuse and recycle) and packaging materials in distribution centres (DCs) and in store.</li> </ul>
<b>Pick n Pay</b>	<ul style="list-style-type: none"> <li>• Makes surplus food donations to NPO partners (such as Food Forward SA).</li> <li>• Improve the accuracy of demand forecasting.</li> <li>• Reduce the price of goods in order to clear them from the shelves before their sell-by date.</li> <li>• Improve in-store product layout.</li> <li>• Increased focus on maintenance of the cold chain.</li> <li>• Piloted converting their organic waste into value added products and has now started to produce and sell compost made from its own food waste.</li> </ul> <p><b>TARGETS</b></p> <ul style="list-style-type: none"> <li>• 20% reduction of food waste by 2020</li> </ul>	<ul style="list-style-type: none"> <li>• Use recyclable materials in store-brand packaging. By 2025, all store-brand packaging will be 100% reusable or recyclable</li> <li>• Introduce package-free zones for fruits and vegetables in a number of selected stores.</li> </ul>
<b>Shoprite</b>	<ul style="list-style-type: none"> <li>• Makes surplus food donations to NPO partners from DCs and stores.</li> <li>• Has committed to adopting a hierarchical approach to deal with food loss and waste with redesign of the entire supply chain and packaging in order to reduce food loss and waste at the source (Shoprite Holdings, 2019:23,57).</li> <li>• Will set targets to accelerate food loss reduction and waste reduction and report on the group's performance</li> </ul>	<ul style="list-style-type: none"> <li>• The first retail group to introduce compostable packaging in SA.</li> <li>• Use post-consumer waste (25%) to make their store-brand carbonated soft drinks bottle.</li> <li>• Offer plastic shopping bags that are made entirely from recycled plastics.</li> <li>• Shoprite and Checkers stores will be introducing 100% recyclable 'planet' bags. The bags will retail at R3, but customers will be rewarded for using these planet bags by being given a 50 cent reduction on their groceries purchase.</li> <li>• In their DCs, the group reuses</li> </ul>

Retailers	Food Waste Initiatives	Packaging Waste Initiatives
	<p>against targets to increase transparency (Shoprite Holdings, 2019:23).</p>	<p>cardboard where possible.</p> <ul style="list-style-type: none"> <li>Encourages behaviour changes from its suppliers by trading wooden pallets and other disposable packaging for plastic pallets which are reusable and returnable.</li> </ul> <p><b>TARGETS</b></p> <ul style="list-style-type: none"> <li>100% of plastic packaging to be reusable, recyclable or compostable by 2025.</li> <li>30% average recycled content in all plastic packaging by 2025.</li> </ul>
<b>Spar</b>	<ul style="list-style-type: none"> <li>Developed the rural hub business model. Amongst one of the many aims of the model such as improved livelihoods and nutrition, is to ensure shorter travel distances between farmers and stores to minimise food waste along the supply chain.</li> </ul>	<ul style="list-style-type: none"> <li>Rolled out an in-store campaign educating shoppers about the damage that single-use plastics cause to the environment.</li> <li>Testing reverse vending machines in 10 Johannesburg stores.</li> <li>All Spar DCs have recycling programmes.</li> <li>Cardboard packaging waste generated at the DCs and by some retailers is also used by Spar's packaging suppliers to produce new packaging.</li> </ul>
<b>The Refillery</b>	No information available	<ul style="list-style-type: none"> <li>Zero-waste store which offers food items such as grains and cereals and cleaning products in dispensers.</li> <li>The stores also sell other household products such as reusable coffee mugs, bamboo toothbrushes and biodegradable kitchen cloths.</li> </ul>
<b>Woolworths</b>	<ul style="list-style-type: none"> <li>Makes surplus food donations to NPO partners.</li> <li>Reduces the price of meat products by 30% after 2pm on the sell-by date</li> </ul>	<ul style="list-style-type: none"> <li>After a successful pilot in Cape Town, selected stores in Durban, Johannesburg and Pretoria will no longer offer plastic shopping bags.</li> <li>Will be rolling out reusable and recycled shopping bags in more stores. The bags are made</li> </ul>

Retailers	Food Waste Initiatives	Packaging Waste Initiatives
		<p>locally from recycled plastic bottles.</p> <ul style="list-style-type: none"> <li>• Develop and produce a plant-based plastic bottle for milk.</li> <li>• Recycle clothes hangers.</li> <li>• Eliminated plastic microbeads from their store brand products.</li> <li>• Launched recycled PET in food packaging.</li> <li>• Eliminated single-use packaging for distribution from their DCs.</li> </ul> <p><b>TARGETS</b></p> <ul style="list-style-type: none"> <li>• By 2022 all packaging will be reusable or recyclable.</li> <li>• By 2020, eliminate all single-use plastics from stores country-wide.</li> <li>• By 2020, ensure that all paper board packaging is certified by the Forest Stewardship Council.</li> </ul>

## 2.5 CHAPTER CONCLUSION

Green retailing is a management approach that takes into consideration the entire supply chain, logistics, facilities and infrastructure, products and post-consumer behaviours, and aims to make decisions and adopt practices that protect the environment. Green retailing is driven by global and national policy, various stakeholders such as the media, top management and consumers, and lastly, by revenue or cost-cutting potential. According to the DEA, the waste economy was worth about R24.3 billion rand of SA GDP in 2016 and created 36 000 formal jobs and about 80 000 informal jobs.

According to global statistics, 13% of the world's population is malnourished, whilst according to 2017 statistics from FAO, 29% of the SAn population is severely food insecure. Food waste magnifies the issue of food insecurity through increases to costs of production, adds to water insecurity (wastes other resources that were used to make the food), and impacts negatively on the environment when wasted food is sent to landfills. Euromonitor International reported that food and beverages account for 92% of all retail packaging (in volume). In SA, 3.8 million tonnes of packaging waste is generated and only 58% of this is recycled, according to Packaging SA.

The main global policies directed at reducing food waste and food insecurity and protecting the natural environment are the SDGs, namely:

- SDG2: End hunger, achieve food security and improve nutrition and promote sustainable agriculture,
- SDG12: Ensure sustainable consumption and production practices,
- SDG13: Take urgent action to combat climate change and its impacts, and
- SDG14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Several EU countries as well as Kenya and Rwanda have implemented waste reduction policies that are leading the global fight against food and packaging waste. On the other hand, initiatives being led by retailers are driven by technology, R&D for packaging redesign, and include partnerships with NPOs, standardisation across the industry, i.e. food labels and converting waste into renewable energy, packaging reduction throughout the supply chain, take-back and deposit return schemes, as well as introducing reusable and recyclable options for consumers, improving ease of recycling and education/awareness programmes directed at consumers.

## CHAPTER 3: METHODOLOGY

The section below outlines the methodology that was adopted in order to collect primary data, which includes the sample population that was studied, the types of research instruments that were utilised, the sampling technique and the framework under which data analysis was undertaken.

### 3.1 RESEARCH DESIGN

The research design was predominantly qualitative and consisted of both primary and secondary research. Secondary (desktop) research included a review and analysis of research reports, online articles and academic journal articles (as detailed in the Literature Review section). Primary research consisted of a combination of interviews with a selection of key stakeholders, and an electronic survey with a broader stakeholder grouping comprising retailers. The sampled population was made up of four main groups, namely, retailers, waste management companies, industry associations and other specific industry specialists.

### 3.2 RESEARCH INSTRUMENTS

Two research instruments were used for the study, that is, surveys (see Appendix 7) and interviews (Appendix 8). The interviews and surveys were developed in consultation with the WRLC in order to ensure alignment with WRLC objectives. A standard format was used for surveys and interviews with slight variations depending on the respondent's group (i.e. waste management company, industry association or retailer). Interviews with industry specialists did not follow a strict format, however, they had a clear objective to gain an understanding of global best practice in retail waste reduction, research and development currently taking place in the waste industry, the state of retail waste from the perspective of their organisation and to obtain recommendations and learnings for the SA retail sector.

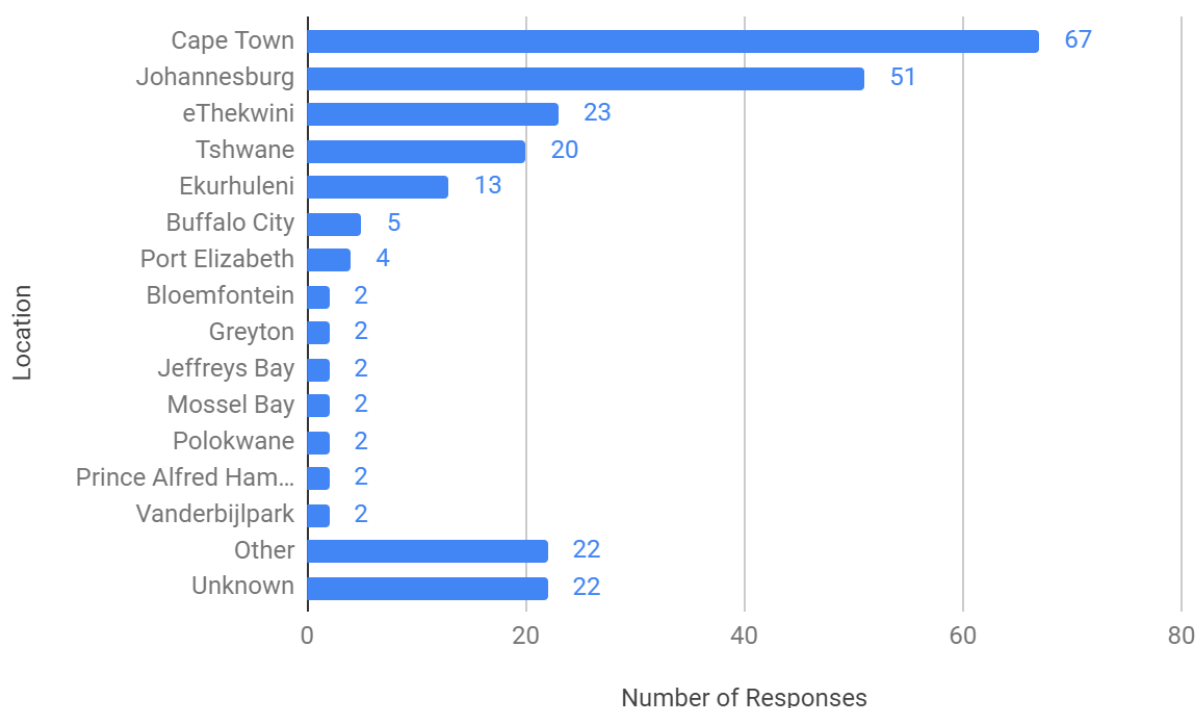
**Interviews:** Interviews were conducted with a selection of industry specialists, major waste management companies and industry associations. The purpose of the interviews was to identify general trends within waste reduction, management and recycling, challenges being faced in achieving sustainability targets, to identify global and local good practices within the retail waste reduction space, and to provide inputs towards the development of sector guidelines. Interview questionnaires were developed for each population group and approved by WRLC. Interviews were conducted telephonically, over Skype or face-to-face. Overall, fourteen interviews were



conducted with various stakeholders including two waste management companies, five industry associations, and seven specialist organisations.

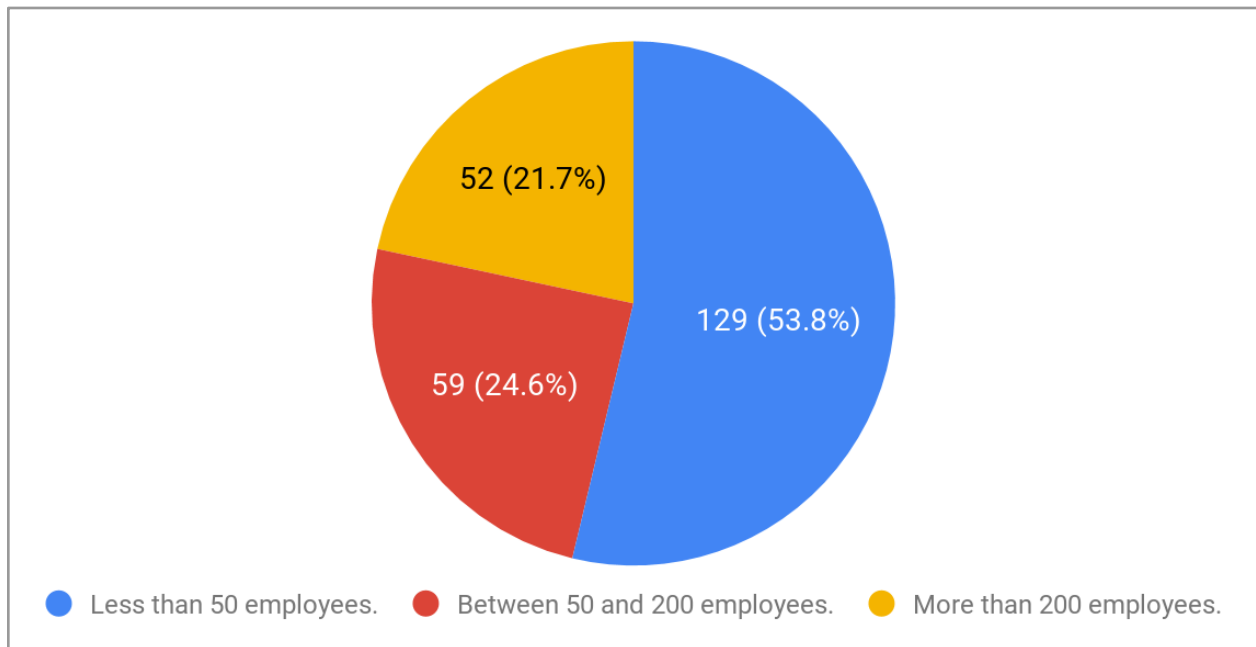
**Surveys:** A succinct electronic survey was conducted with a sample of small, medium and large retailers in order to represent the various types of retailers. Surveys were conducted through a third-party research firm who also made use of the database that was shared by the Wholesale and Retail Sector Education and Training Authority (W&RSETA). The purpose of retailer surveys was to gain more detail into the specific waste reduction strategies of retailers within SA, and other issues related to waste reduction within the retail space. A complete database of 15 854 retailers received the survey. A total of 241 retailers responded to the survey – a response rate of 1.5%. A complete list of retailers in South Africa, including size and other characteristics is not available, therefore it is impossible to know whether the sample of retailers are representative of the population. However, the objective of obtaining a variety of retailers by size, location and retail category was achieved, as described by the respondent profiles below.

**Figure 5 Location of survey respondents**



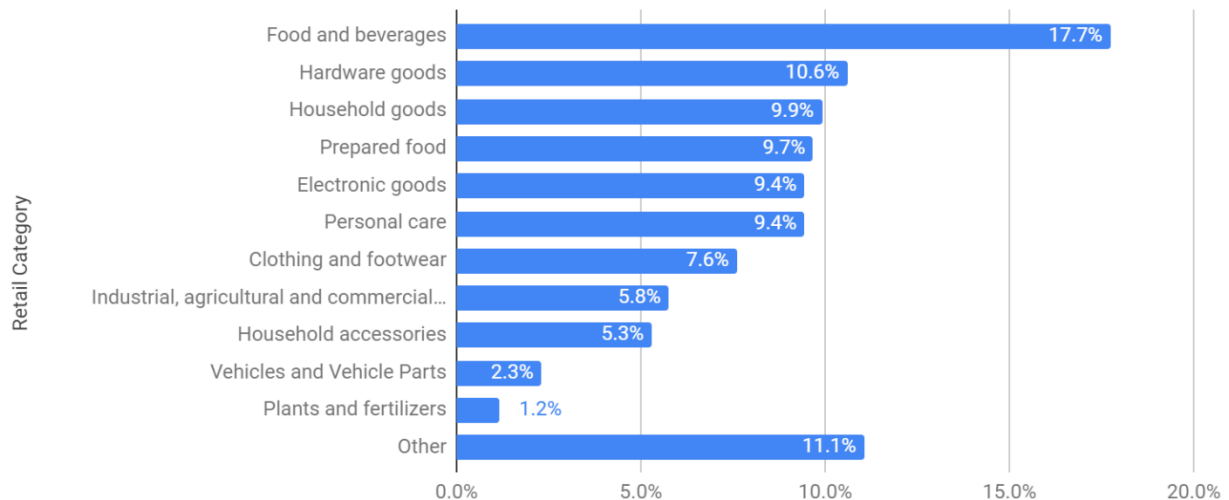
The location of the retailer was obtained via the IP address of the respondent (i.e. not via a question response). The graph shows that all major metros are well represented in the sample, with several further responses from a variety of towns throughout South Africa.

**Figure 6 Size of respondent company**



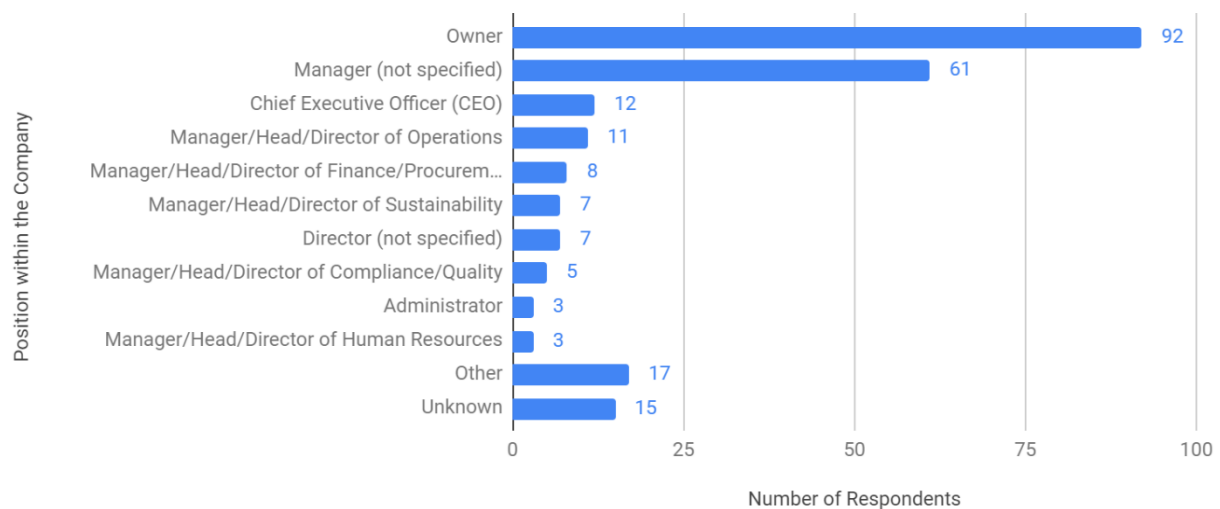
The sample reflects a good mix of retailers by size. The fact that the majority of retailers in the sample have less than 50 employees is likely true of the retail sector at large, although there is insufficient data on the population to be sure of this.

**Figure 7 Retail category of respondent**



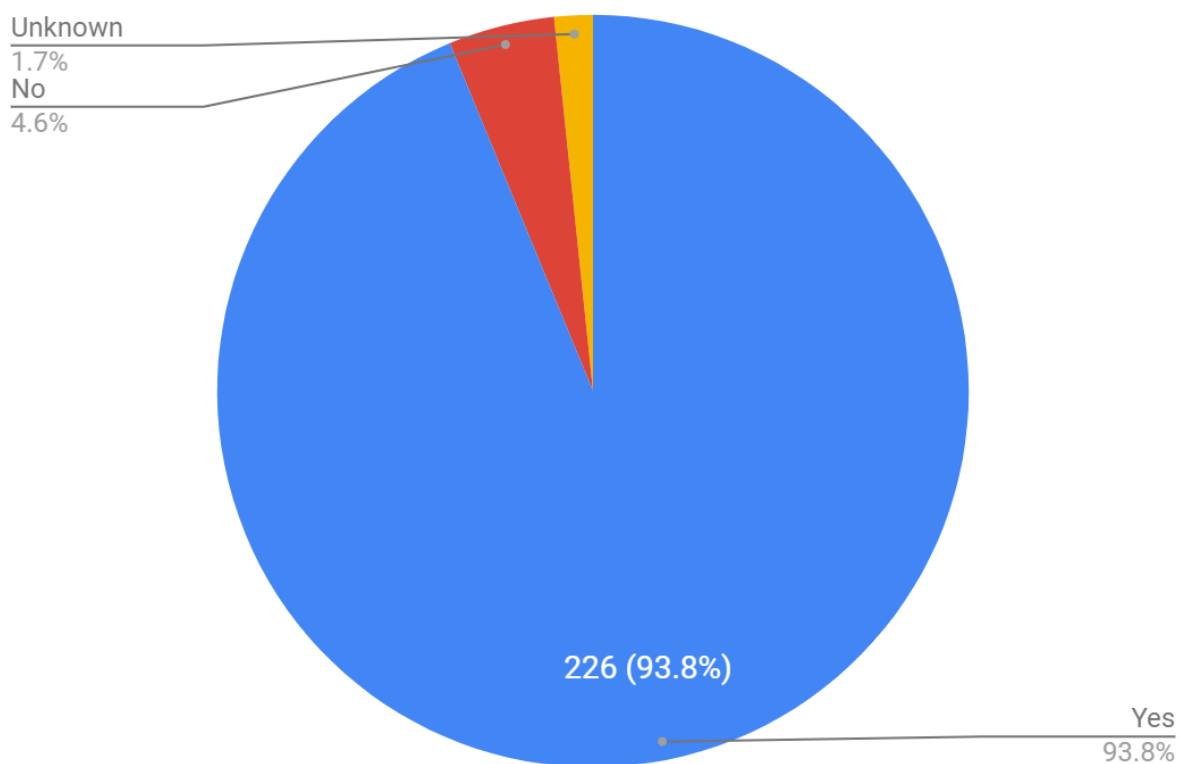
The respondents to the survey covered a variety of retail categories, with at least 23 responses in each of our major targeted categories. The high percentage of food and beverage retailers is likely in line with the population of retailers. 'Other' retailers included pharmaceuticals, paper and packaging, promotional gifts and clothing, sport & outdoor goods, medical devices, scientific products, textiles, tobacco, books, toys and musical instruments, amongst others not specified by the respondent.

**Figure 8 Respondent position within the company**



The graph shows that the vast majority of responses were completed by persons at a manager level or higher which adds to the legitimacy of the survey results.

**Figure 9 Is the respondent directly responsible for waste management?**



Similar to the position of the respondent, the fact that 93.8% of respondents are directly responsible for waste management in the company adds legitimacy to the survey results.

While the study focus is on physical, store-based, direct to consumer retailers, it should be noted that several respondents do fall outside of this category. The W&RSETA takes a broad definition of retail that includes certain manufacturers and distributors as wholesale retailers and since their database was used, several of these wholesalers who are predominantly manufacturers or distributors are included in the survey findings. Furthermore, it is possible that some respondents are e-commerce retailers but since respondents weren't required to leave their details, it is not possible to confirm this.

Respondents were informed (via email and within the introduction of the questionnaire) that by completing the questionnaire they consent to taking part in the survey. Respondents were also given the option to withdraw from participating. Respondents were also informed that all

information would remain confidential and only be reported at an aggregated level within the research report and paper.

### **3.3 DATA ANALYSIS**

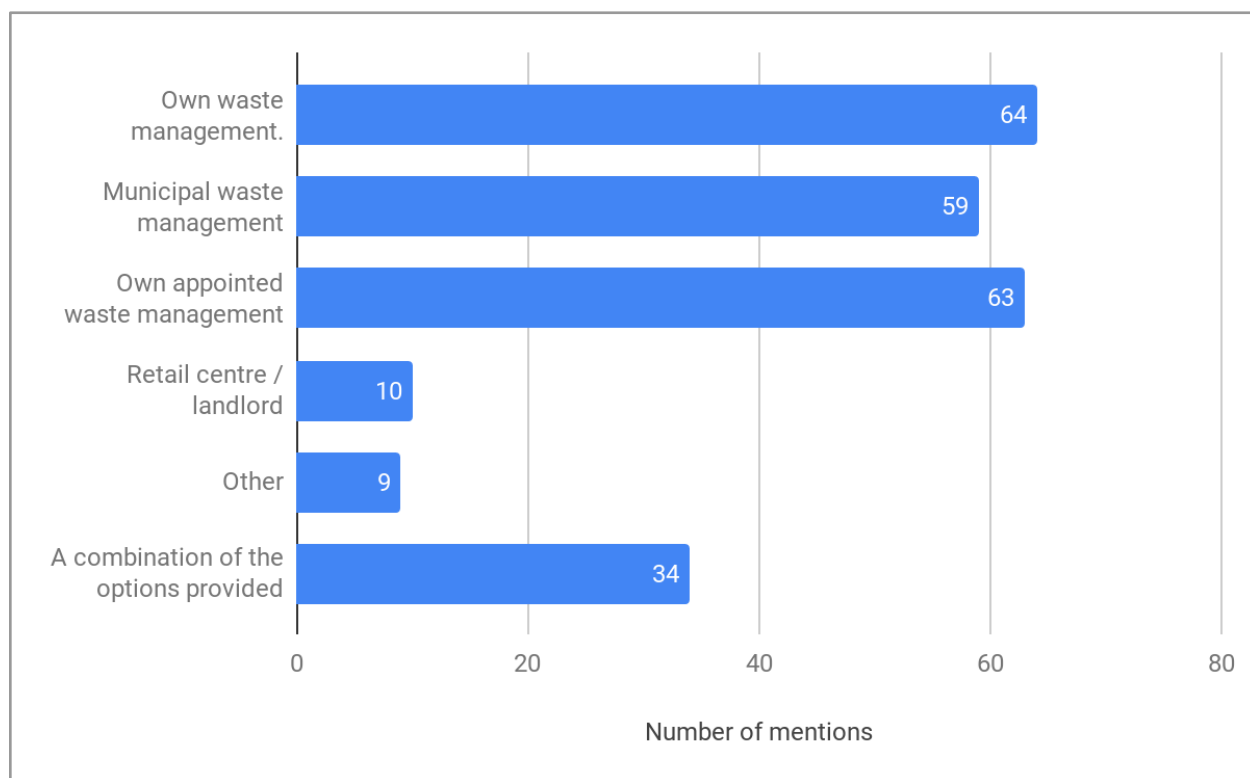
Given that the study is qualitative, thematic analysis was used to identify patterns across the responses and group responses based on developed themes to enable focused analysis. The interview and survey responses were first viewed, processed and understood in their entirety. Following which, themes were developed and reviewed to ensure that they answer the research questions and that they can be used to create guidelines for retailers.

## CHAPTER 4: FINDINGS

### 4.1. FINDINGS FROM SURVEYS

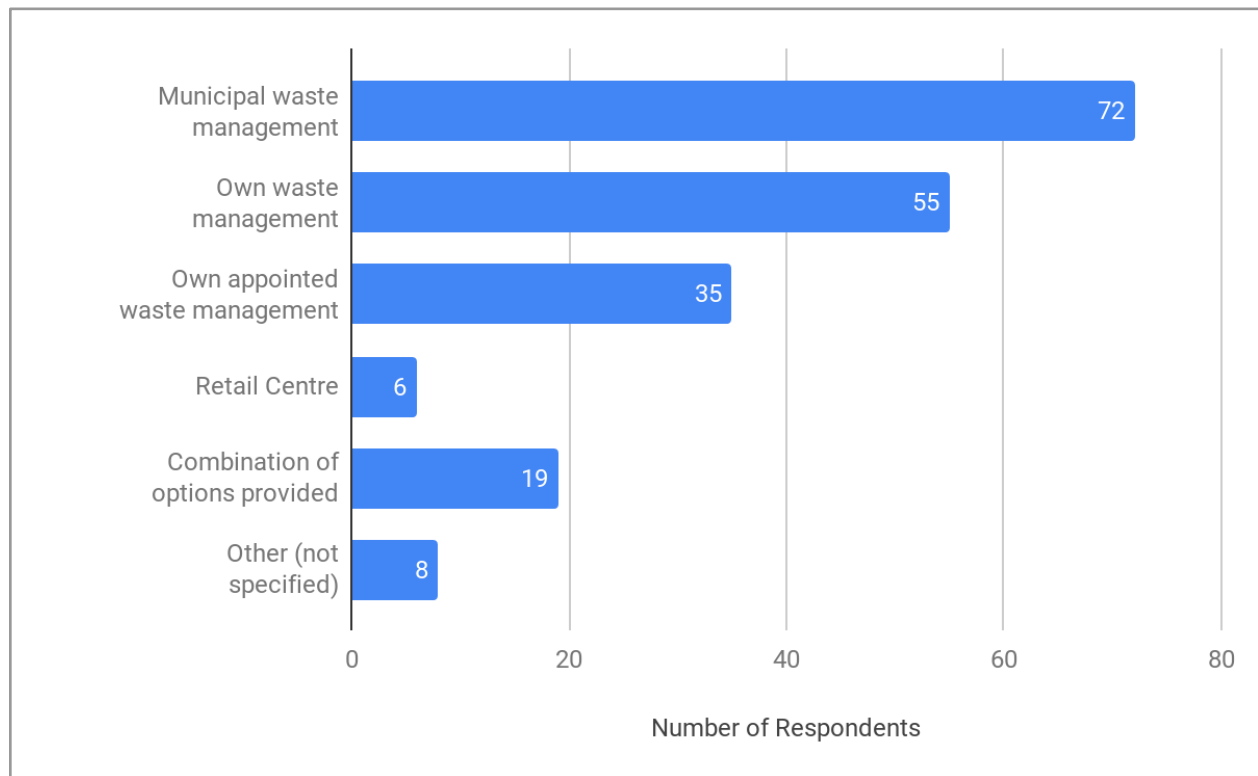
The following findings are derived from a survey of retailers whose profile is described in the methodology chapter preceding this chapter. Not all questions were answered by all respondents, for this reason, not all figures add up to the total response rate of 241.

**Figure 10 Who manages your company's paper and plastic waste?**



There was a fairly even split between retailers that do their own waste management (64), that appoint their own waste management company (63) and those that use a municipal waste management service (59). A significant number of retailers (34) noted a combination of the above options. There were only 10 mentions of retail centres or landlords managing waste and another nine mentions of 'other'. This included informal collectors, 'bakkie' collectors, dropping off their own waste at drop-off centres, and one retailer that donated waste to a local school, most of which can also be categorised as 'own waste management'.

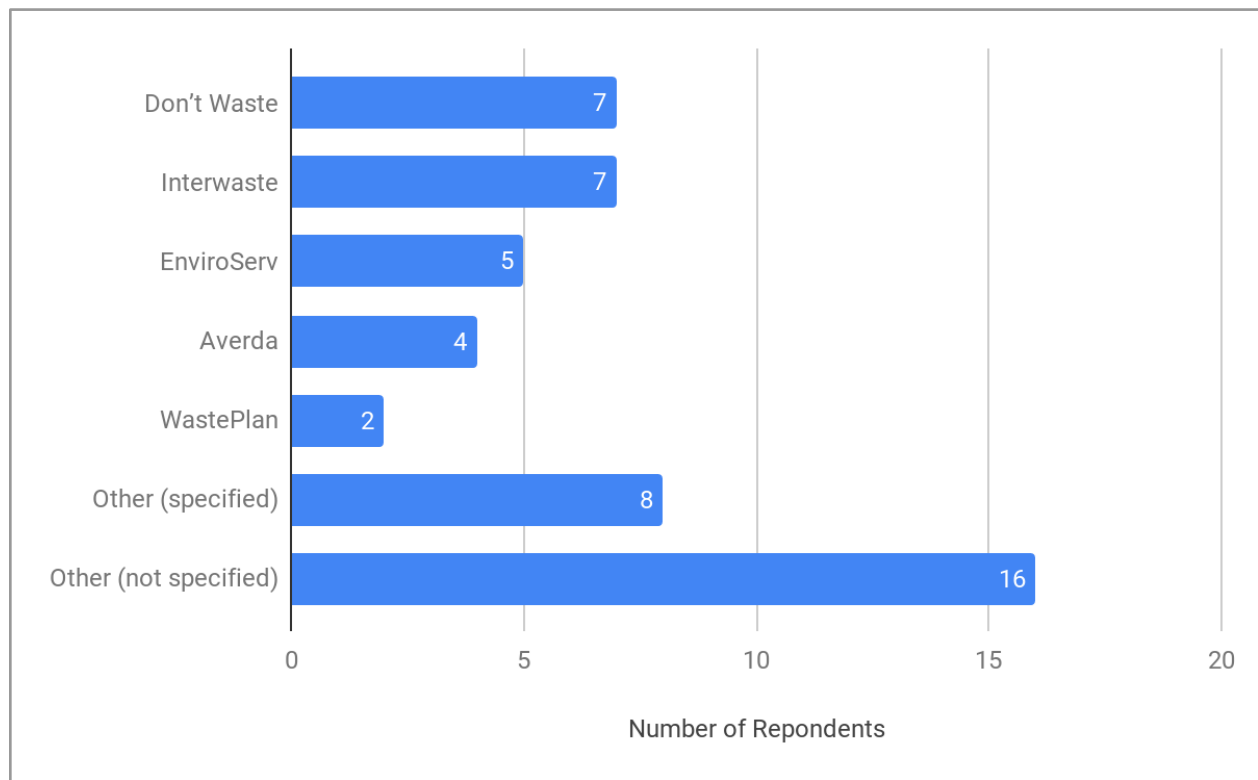
**Figure 11 Who manages your company's food waste?**



Seventy-two respondents reported that they utilise municipal waste management services to dispose of their food waste, 55 respondents manage their own food waste, 35 have appointed a waste management company, and six rely on their retail centre for food waste management. Nineteen respondents utilise a variety of food waste management options (mostly a combination of own waste management and municipal/appointed company). The graph below provides details on which waste management companies are used by respondents.

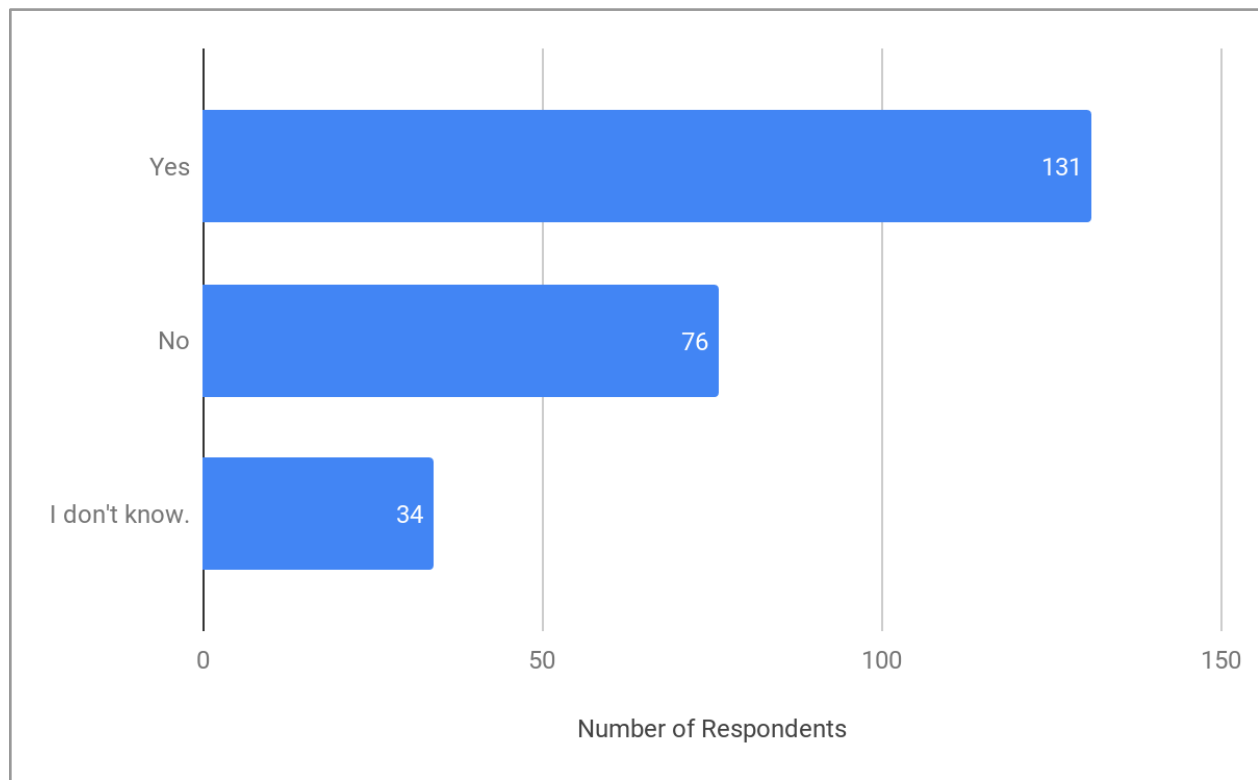


**Figure 12 Appointed waste management companies**



Most respondents use Don't Waste and Interwaste to manage their waste, followed by Interwaste, EnviroServ, Averda and WastePlan. 'Other' includes Echo Waste, Lothlorien Recycling, Waste-Mart, Why Waste, Remade Recycling, The Waste Group, EcoCycle, and ECO Services.

**Figure 13 Are you implementing waste reduction initiatives?**



One-hundred and thirty-one respondents (54%) are implementing waste reduction initiatives. Seventy-six respondents (31.5%) are not implementing waste reduction initiatives, while 34 (14%) aren't sure if their company is implementing waste reduction initiatives.

Many of the retailers that were surveyed had initiatives that fall under the waste principles of 'reduce, reuse, recycle'. The survey showed that of the 131 retailers that said they are implementing waste reduction initiatives, 47.3% have 'recycle' initiatives in their businesses. Some recycling initiatives include:

- Plastic, paper, cardboard, glass and pallets recycling,
- Colour coded bins in offices,
- Setting recycling targets,
- Spent oil and recycling of water,
- Recyclable plastic bags, and
- Asset Recovery and Recycling (ARR) initiatives.

Of the 131 respondents who are implementing waste reduction initiatives, 16.0% focused on 'reuse' within their businesses. Reuse initiatives included the reuse of A4 paper in retailer offices, packaging is reused for internal storage and distribution where possible. Many of the 'reduce' initiatives outlined by retailers were in the reduction of paper usage in offices. Other retailers said they encourage customer reuse by providing reusable carrier bags. 10.7% of retailers specifically mentioned the adoption of technologies that would minimise the need for printing and creating a culture and business environment of little to no printing through electronic alternatives. Moreover, 8.4% of retailers' reduction initiatives included packaging reduction in the following ways:

- Using less plastic and bubble wrap,
- Selling in glass and instituting a deposit return scheme for glass,
- Unpackaged procurement,
- Removing plastics straws, and
- No plastic carrier bags.

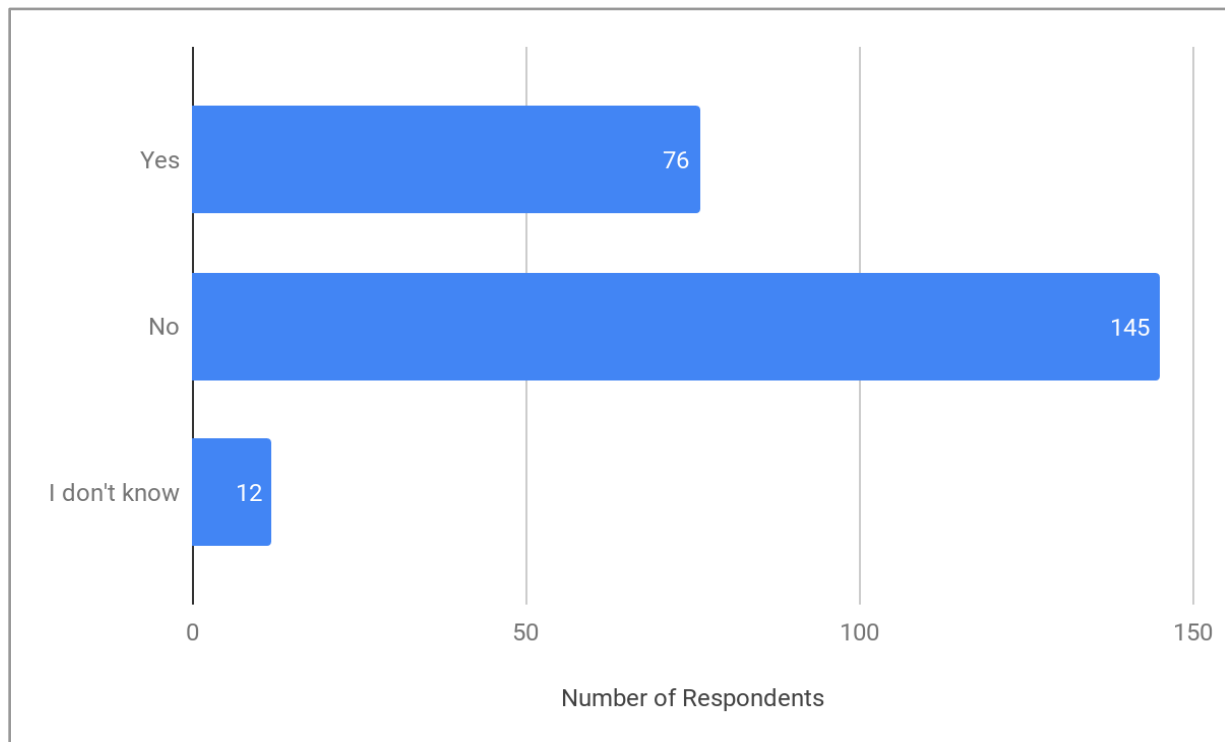
Other packaging initiatives were biodegradable packaging and products for customers and loose format fruits and vegetables in order to reduce the need for packaging.

The survey results show that of the 131 respondents, 7.6% of waste reduction initiatives are donations of surplus food. Moreover, 9.2% of retailers reported that their food is composted or sold/donated to farmers for animal feed. One retailer also added that slightly damaged vegetables are peeled and processed for the deli (prepared food) and for all their meat products, the final bones and shavings are sold off.

Some waste initiatives that were mentioned less frequently include:

- Research and development currently being conducted to understand the composition of the waste and potential solutions,
- Initiatives targeted at suppliers where they are required to use recyclable packaging when supplying raw materials,
- Clothing bank initiatives, and
- Heat recovery from generators.

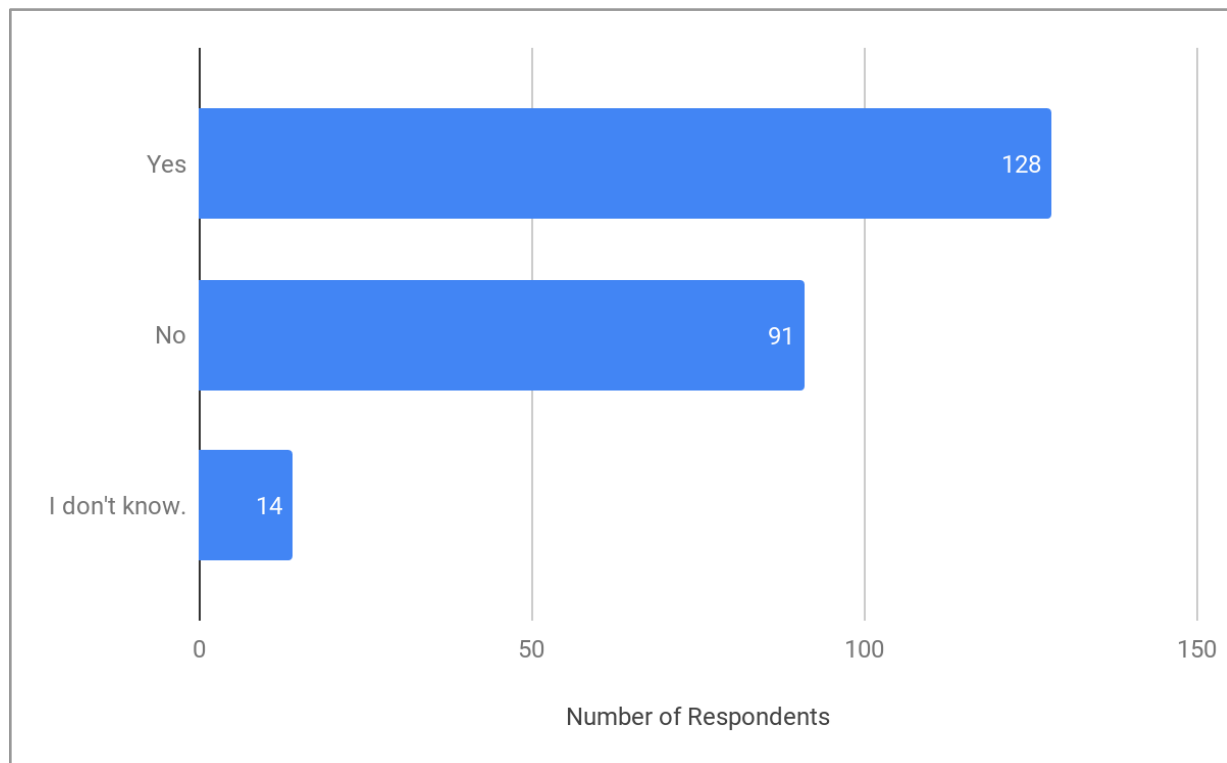
**Figure 14 Are you implementing education programmes and/or awareness campaigns?**



Most respondents (145/62%) are not implementing education or awareness campaigns for waste reduction, whereas 76 (33% of respondents) are implementing campaigns, and 12 (5% of respondents) don't know whether they are implementing campaigns.

Of the 76 retailers that said they are implementing education or awareness campaigns, 52.6% of retailers have staff training/education initiatives as well as internal recycling initiatives such as colour-coded/separate recycling bins. Other ways retailers said they encourage and educate internal and external stakeholders is through reporting in sustainability reports and monthly departmental reporting. Furthermore, one retailer revealed that apart from training staff, they also train their suppliers and collaborate with them in order to discover innovations for improvement. 13.2% of the 76 respondents said they have public awareness campaigns. Of the 76 respondents, 9.2% of retailers reported that they have company policies on waste reduction which they adhere to.

**Figure 15 Are you implementing green building initiatives?**



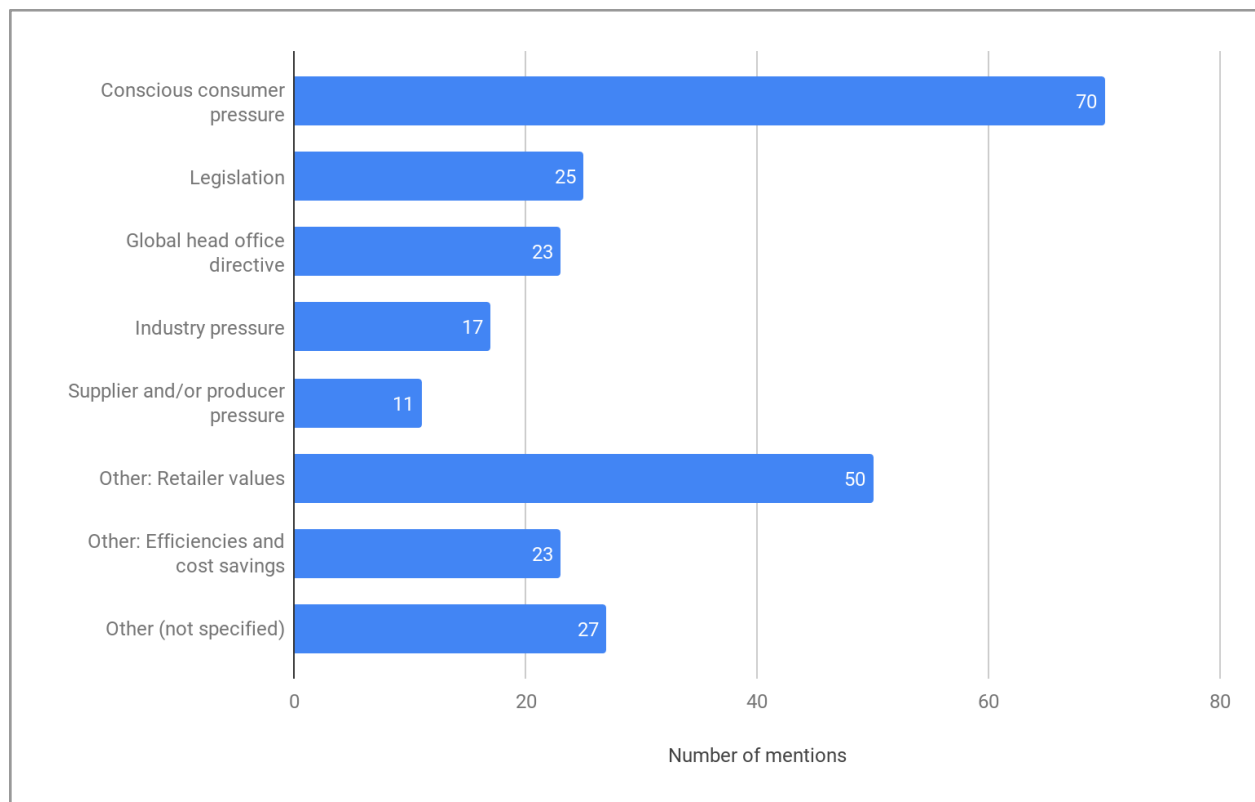
One hundred and twenty-eight respondents are implementing green building initiatives, which equates to 55% of respondents. Ninety-one (40% of respondents) are not implementing green building initiatives, and 14 (6%) were not sure if they were or were not.

Many of the initiatives employed by retailers are focused on monitoring and reducing energy and water consumption levels. The 128 retailers who said they are implementing green building initiatives have the following initiatives in their respective businesses:

- Lights – 16.4% of respondents said they use LED lights, low-voltage lamps, motion sensor lights or natural light.
- Water – 12.5% of respondents said they have implemented water saving programmes such as installing flow restrictors on taps. Some retailers also mentioned that they introduced disposable crockery in order to reduce dishwashing. A considerable number of respondents (21.9%) had green initiatives that focused on sustainable water usage. Most retailers revealed that they collect rainwater, others have boreholes, grey water tanks, do not use drinking water to flush toilets but rather use underground water, or reuse water from air conditioners for flushing.

- Energy – Many respondents (37.5%) reported that they are using renewable energy in their businesses such as solar energy (while others were still investigating solar energy), and one retailer is also composting to obtain energy and using a heat pump for heating water. Three of these retailers sell renewable energy products.
- Improved insulation, extra green space (trees), drip irrigation in gardens and irrigation at night to allow percolation of the water and eco-friendly roofs.
- Upgrading their equipment (energy efficient fridges, low consumption dishwashers), switching off unnecessary equipment and slow starting other equipment for power usage optimisation.
- Using eco-friendly cleaning products.

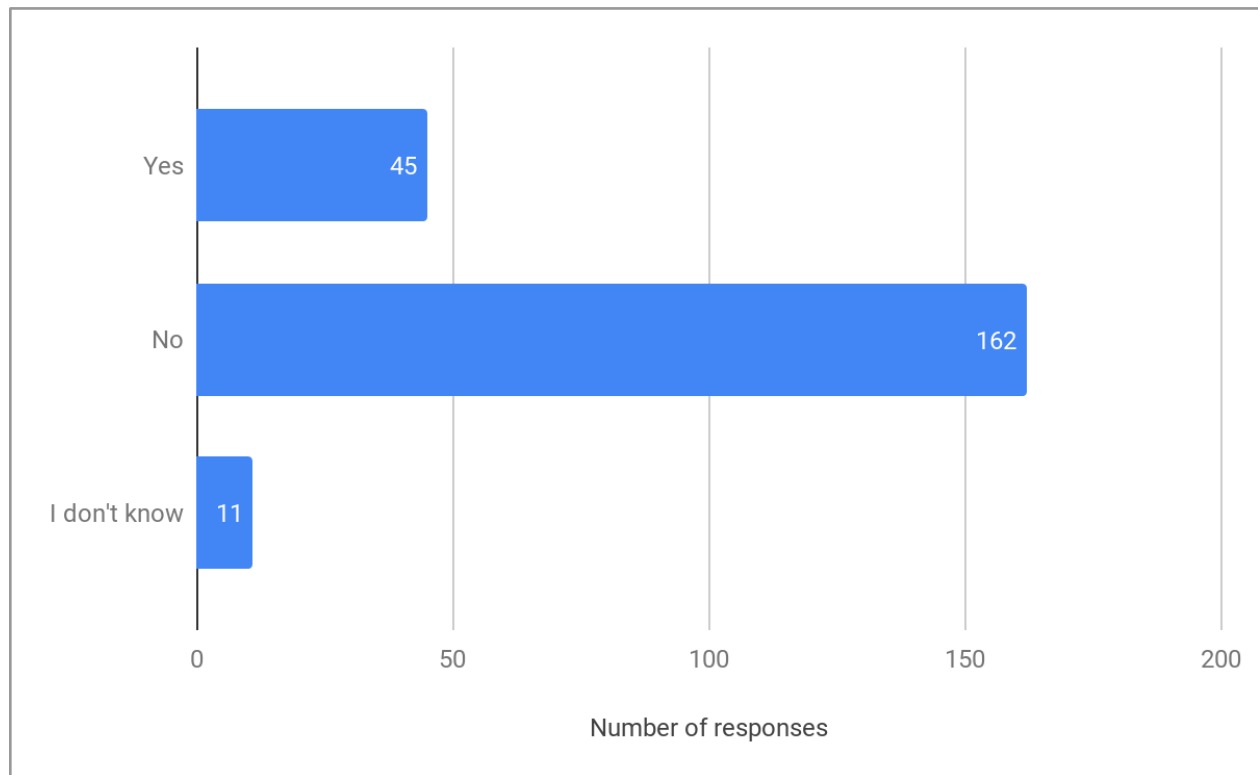
**Figure 16 Top 2 reasons for implementing green initiatives**



The main reasons that retailers decided to implement the above green initiatives are pressure from conscious consumers (70) and other responses that all spoke to the values of the retailer (50). A fairly even number of retailers mentioned legislation (25), global head office directive (23) and efficiencies (especially electricity) and cost saving (23). General pressure from the industry

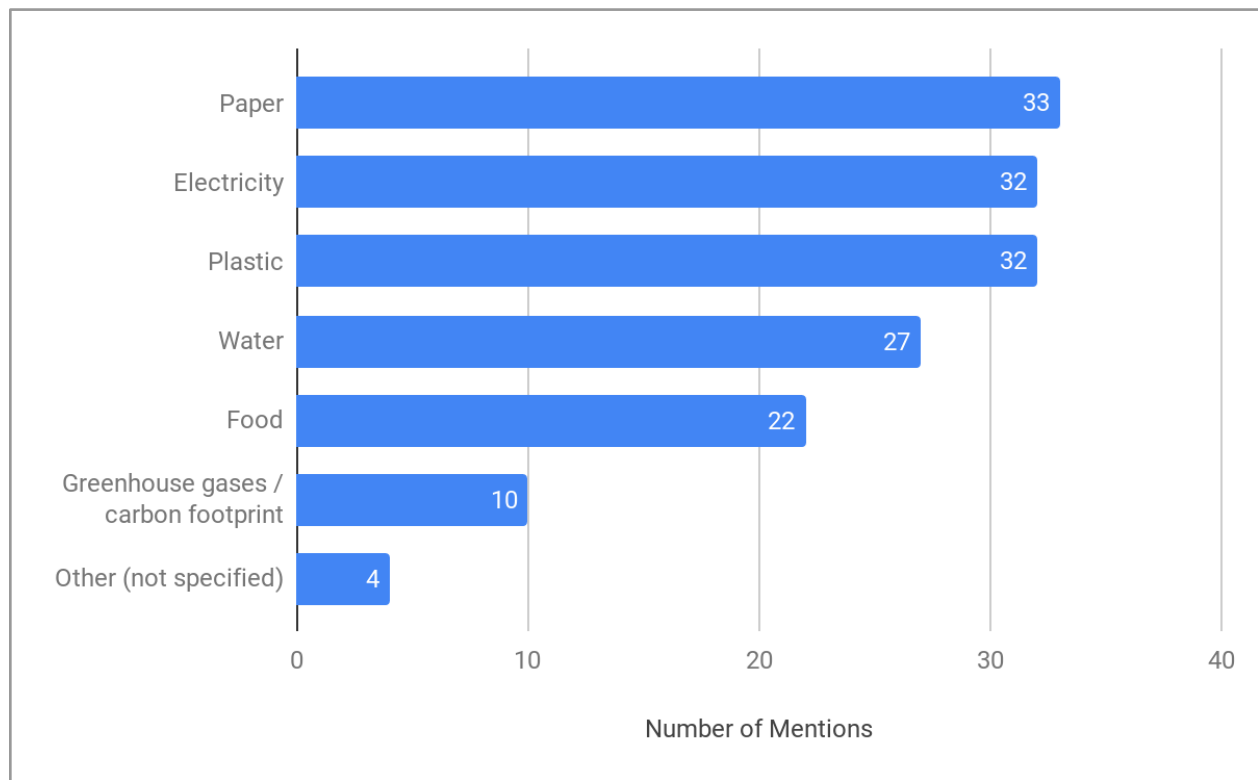
was noted 17 times, followed by pressure from suppliers and producers (11). A significant number of retailers responded 'other' with no explanation.

**Figure 17 Do you have waste reduction targets?**



The majority of retailers (74,3%) said that they do not have waste reduction targets, with only 20% noting that they do have targets. Just over 5% of retailers said they were not sure if their organisation has waste reduction targets.

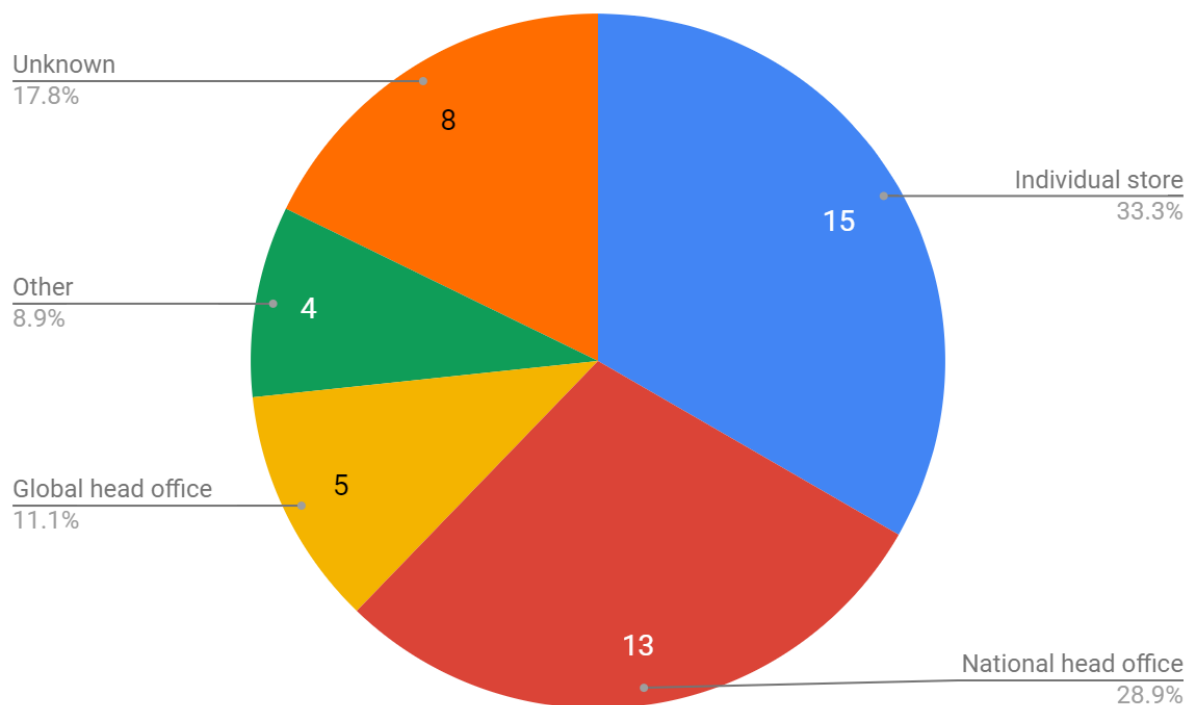
**Figure 18 What do you have targets for?**



Paper, electricity and plastic targets are the most common targets in place (approximately 15% of all respondents), followed by water and food targets. Greenhouse gases/carbon footprint targets are much less common with only ten respondents implementing this target.

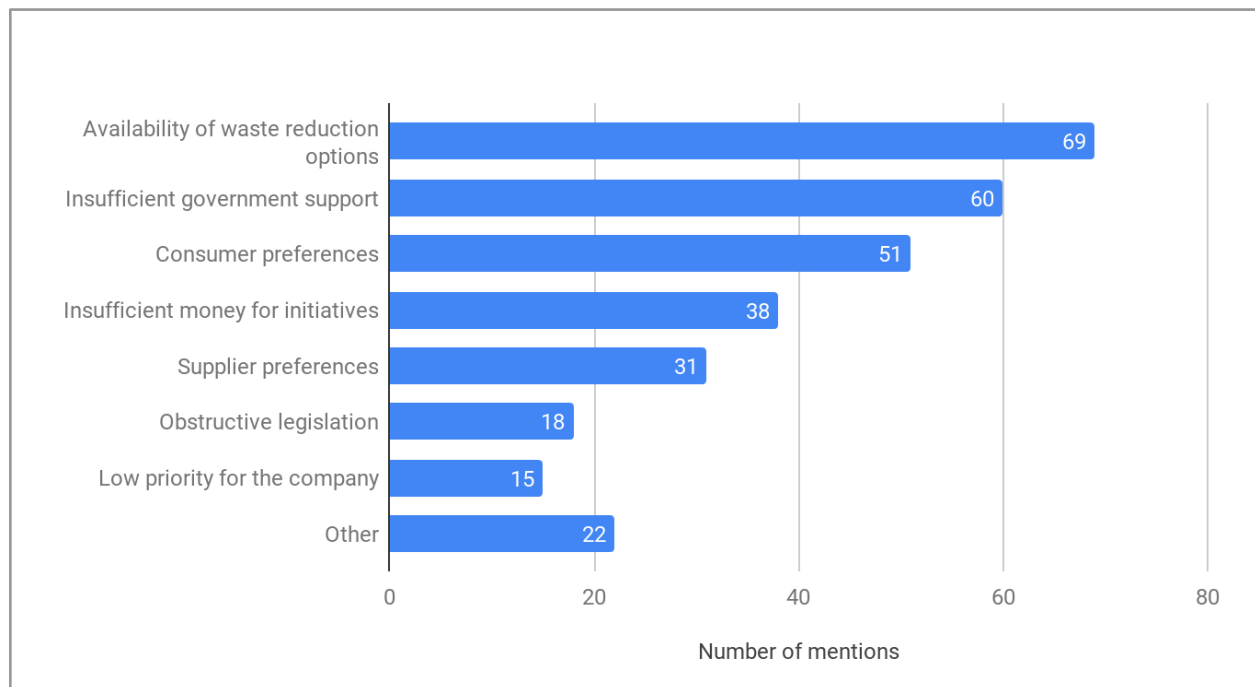


**Figure 19 Who sets your targets?**



The majority of targets are set at the store level (it is unknown how many of these are franchises and how many of these retailers only have one store). This number is followed closely by national head office, with 13 responses. Five respondents stated that their targets were set globally. Those who specified 'other' included departmental targets and regional targets.

**Figure 20 Challenges in implementing green initiatives**



The availability of waste reduction options was mentioned most frequently as a challenge to implementing green initiatives (69 mentions), followed by insufficient government support (60), consumer preferences (51), insufficient money for initiatives (38) and supplier preferences (31). The least mentioned challenges were obstructive legislation (18) and low priority for the company (15). 'Other' responses included the lack of landlord willingness.

#### **4.1.1 Government Support Required**

Retailers were asked what kind of government support they think could help drive green retailing. The responses have been summarised below:

- Financial support – most retailers (24.6%) identified financial support from the government as a key support mechanism. Financial support includes offering incentives/rebates for businesses to recycle, ban plastics and reduce plastic usage, manufacture solar components and other green initiatives. Other schemes that were noted are subsidies for plastic pellet crushers and other equipment, and reduced taxes for green initiatives.
- Policy – several policy instruments were suggested by 24.6% of respondents. These included structural policy to reduce reliance on coal power, government ban on plastic and unnecessary packaging, tax on emissions, a carbon tax, taxing individuals for waste,

harsher punishment for dumping, fines for littering, introduce fines for excessive use of water and power, enforce already existing laws, introduce laws for recycling and waste management. Related to policy, one stakeholder emphasised the importance of minimising bureaucracy.

- Municipality – 16.7% of respondents highlighted municipalities' role in facilitating waste reducing and increasing recycling rates. Suggestions for municipality included increasing the number of recycling points, for example, more bins in malls, establish more recycling centres, collect recyclables in suburbs, peri-urban and rural areas, increase the number of municipal dump sites and expand other recycling initiatives. Similarly, some respondents pointed out that waste infrastructure is lacking in SA. Therefore, increasing access to recyclers and waste drop off sites is critical, or the government can provide support to private companies to do waste management in rural areas. One retailer noted that there needs to be a complete restructuring of waste collection and operation.
- Awareness – survey findings show that 17.5% of retailers believe that the government needs to be active in building public awareness and educating the public on waste matters through advertising campaigns and clean ups for example.
- Other suggestions for the government to support retail waste reduction included collaboration, regular inspections and monitoring, research and testing to prove concepts, as well as setting minimum standards for the industry alongside robust road maps and targets.
- Other retailers noted that the government should not be taking the lead in the waste industry; they argue that the government has other more critical areas to focus on, such as efficient power supply. Another suggested that recycling should remain in the private sector. Furthermore, one retailer argued that the government is not equipped to solve issues pertaining to waste in the retail sector. They went on to suggest that the retail industry should start using standard-sized packaging that can be reused for multiple products, and discounting companies that provide recycled packaging.

#### **4.1.2 Recommendations for Retailers**

The recommendations in this section were proposed by retailers. Many recommendations emerged in the areas of packaging, recycling and awareness/education/training. Below is a summary of the main points.

- Collaboration between retailers and suppliers to amplify retail waste reduction, as well as collaboration with other relevant role players such as shopping centre managers and cross industry collaboration.
- Some retailers said that consumers and the industry in a broad sense require a mindset change to zero waste and improved waste management. One retailer suggested introducing boxes in-store for waste, for instance. Coupled with this is a need to discourage heavy consumption and incentivise behaviour change.
- Building awareness and educating customers in-store and through various media channels, as well as educating suppliers.
- Recycling initiatives for retailers include more focus on separation at source, and increase recycling collection points (more bins for recycling).
- In terms of plastic and packaging, retailers recognise that the industry needs alternatives to plastic. Some suggested the industry should simply stop using plastic, reduce or eliminate single-use plastics (and containers), ban plastic straws and outlaw plastic bottles, while others suggested environmentally friendly packaging and recyclable packaging. Relating to the supply chain, some retailers suggested initiating a ban on plastic netting and shrink wrap and requesting delivery in reusable boxes and insisting on less packaging from your suppliers. Retailers may choose not to sell products which don't have recycling options. From the consumer perspective, recommendations included a ban on plastic carrier bags (i.e. stop supplying plastic bags in store), offering a discount to customers who bring their own bags, replace plastic carrier bags with paper bags, encourage the use of boxes as opposed to plastic carrier bags, encourage customers to bring their own packaging and bottles.
- Recommendations for retail office spaces were to reduce the amount of paper used by going digital or using electronic invoicing and slips, to have recycle bins and educate staff on recycling and other green initiatives. In the food sector this will also include teaching staff how to handle food in a manner that generates the least waste.
- Recommendations for food waste is to streamline/limit unnecessary by-laws for food processing, donate surplus food to those in need or to pig farms, compost food waste, adopt scientific methods to determine sell by and best before dates, sell fruit and vegetables in loose format, and finally, have more regular food waste collections.

- From a strategic viewpoint, the recommendation is for retailers to appoint a sustainability champion to drive green initiatives. Furthermore, the agenda for green practices should be driven by senior management with clear targets.
- Other recommendations for retailers were to collect rainwater, build roof gardens to keep buildings cool, use more natural lighting in building designs, deliver in full trucks to decrease pollution and carbon footprint, improve procurement and ordering systems by adopting just-in-time delivery for instance, use local suppliers to shorten product travel distances, and use solar power (supported by improved access to financing for solar power).

## 4.2 FINDINGS FROM INTERVIEWS

### 4.2.1 Challenges in Retail Waste Reduction

Findings from stakeholder consultation suggest that there appears to be misalignment in the industry amongst the various role players in the waste and retail sectors. There is also a lack of data, which is a major gap that exists in the SA waste industry in both food and packaging waste in the retail sector. Furthermore, a lack of an industry standard for measuring waste and setting targets means that it is difficult to obtain an aggregated view of retail waste. Additionally, waste targets tend to be broad and do not have a roadmap to achieving those targets. From the viewpoint of the African continent, there is inconsistency in policy and regulations which is important for South African (SA) retailers as they continue to expand across the continent. For example, the implications for retailers to consider when trading in countries with plastic bans.

#### 4.2.1.1 Food Waste: Challenges and Drivers

Industry specialists argue that food waste in SA is unique because it differs from both developing and developed countries. In developed nations, much of food loss and waste occurs on the consumer side whereas in developing nations this largely occurs within the agricultural and distribution processes of the value chain. South Africa is somewhere in the middle, with food waste occurring along the entire food value chain. Solutions for SA's food waste also need to include informal traders, which add complexities that don't exist in developed nations. The complexity of food waste in SA is also evidenced, as one industry specialist suggests, by the fact that food waste has not been properly defined in SA. They note that while it is important to draw from international best practice and thought leaders, different understandings of 'waste' need to

be understood before you can measure waste effectively. For instance, in the UK, chicken feet and heads are considered waste whereas in SA they are not.

Industry associations pointed out that different food date labels for retailers is a significant challenge causing confusion for consumers and consequently results in food waste on the consumer side or adds to in-store food waste. Moreover, the sell-by date is more for retailers in order to make space for new produce, as opposed to being an indication of quality for consumers. Another stakeholder noted that primary packaging, e.g. pallets, contributed most to food waste, as opposed to plastic and cardboard. Another contributor to food waste that was identified during the interviews was managerial practices and plant maintenance. Within the retail stores, findings from the interviews suggested that in-store merchandisers are not equipped with the knowledge required to minimise food waste on the retail floor. For example, in some stores they merchandise bananas and kiwi fruit in close proximity to one another and they ripen each other, resulting in their becoming unsaleable too soon.

Furthermore, most major retailers only sell grade 1 and 2 fresh produce which means that grade 3 produce, which cannot be sold in-store, is discarded (and not recorded) or sent to farmers' markets. In addition, retailers often have strict specifications about the size or quality of fresh produce, and as such, oversized or 'ugly' food ends up becoming waste. Respondents also pointed out that suppliers/distributors repeatedly supply lower levels of stock than what is required by retailers. To mitigate against this, stores exaggerate their order to ensure they receive the correct amount of product, which often leads to wastage when complete orders are delivered.

Interview respondents pointed out that while working to reduce food waste, a major challenge they face is that the amount of waste generated by retailers is largely unknown and while some retailers are open, many more are not willing to work with academics and industry specialists. Industry specialists emphasised the importance of knowing exactly where and how much waste is generated in order to develop targeted solutions. Additionally, often in retail shopping centres, where waste is managed by waste management companies, waste reduction and zero waste are in conflict with the nature of this industry which is extremely cost-sensitive. This is compounded by the fact that in most cases the performance of waste management companies is judged on their ability to keep costs low. For example, the separation of organic waste at source is often not required by the property management company due to the cost for the implementation of such a system. Separation at source of organic waste requires the active engagement of, and

enforcement by, the property management company, to achieve on-going compliance by its tenants.

#### ***4.2.1.2 Plastic and Paper Packaging Waste: Challenges and Drivers***

Rising costs of disposal, lack of alternatives and stringent legislation continue to be a barrier in waste reduction. Proponents of the circular economy suggest that products need to be designed for life. Furthermore, a major obstacle for the packaging industry is that a lot of plastic is designed for single use. Some industry specialists argued that the challenge for SA in this regard is a lack of skilled designers who can design for re-use and recycling. Additionally, misalignment between retailer initiatives and the industry causes other waste challenges. For example, according to one industry association, the introduction of biodegradable packaging causes problems because the industry does not have composting facilities. Furthermore, separation at source (as well as sorting and distribution according to other stakeholders) remains a major challenge to recycling; it is costly and, as such, is often not implemented by municipalities as it should be. Although retailers are interested in reducing waste, cost is their biggest driver which is a challenge because reducing waste requires substantial financial investment.

Some stakeholders suggested that given the crucial role that retailers play as customer-facing entities, they should do more to enable customers to reduce packaging waste and improve recycling rates through return systems for instance. Retailers also need to look at all products and consider the best alternatives for recyclable packaging. Moreover, consumers also lack the information they need to make better decisions, for example, know how and where to recycle different materials. Retailers are positioned well to provide this information. Furthermore, some industry associations have received pushback from retailers who do not want to host recycling banks at their stores.

From the experience of waste management companies, there is a common misconception that alternatives to landfill are cheaper than disposal. Presently, recycling in SA is economically viable for the industry using recyclable materials up to 60%. However, should the price of recyclables decline, for example due to the increased supply of recyclables, this will make recycling less attractive for the industry (for private companies and informal waste collectors). Additionally, although landfill tax will make alternatives more viable, there is still a cost attached to improving recycling performance.

Secondly, retailers need to ask more questions in order to avoid being misled by companies/individuals selling technologies that do not fit the retailer. Often it is not that the technology does not work, but rather the right conditions need to be met for the technology to perform optimally. Additionally, some retailers market themselves to consumers as proponents of zero waste but drive down procurement costs to a point where they are purchasing plastics that cannot be recycled. In this case they are greenwashing which means they are misleading the public by presenting information that suggests that the retailer's business practices are more environmentally friendly than what they really are.

Another challenge is that many retailers focus on driving initiatives that have a public appeal such as banning plastic straws and single-use plastics as opposed to reviewing their entire supply chain and business processes to tackle waste holistically and have a meaningful impact on the amount of waste being sent to landfill. Lastly, in some cases the property management company will try to abrogate the waste management duties to a cleaning company (as a cost containment exercise). In other cases, waste sorting staff may be limited to only a few days per week.

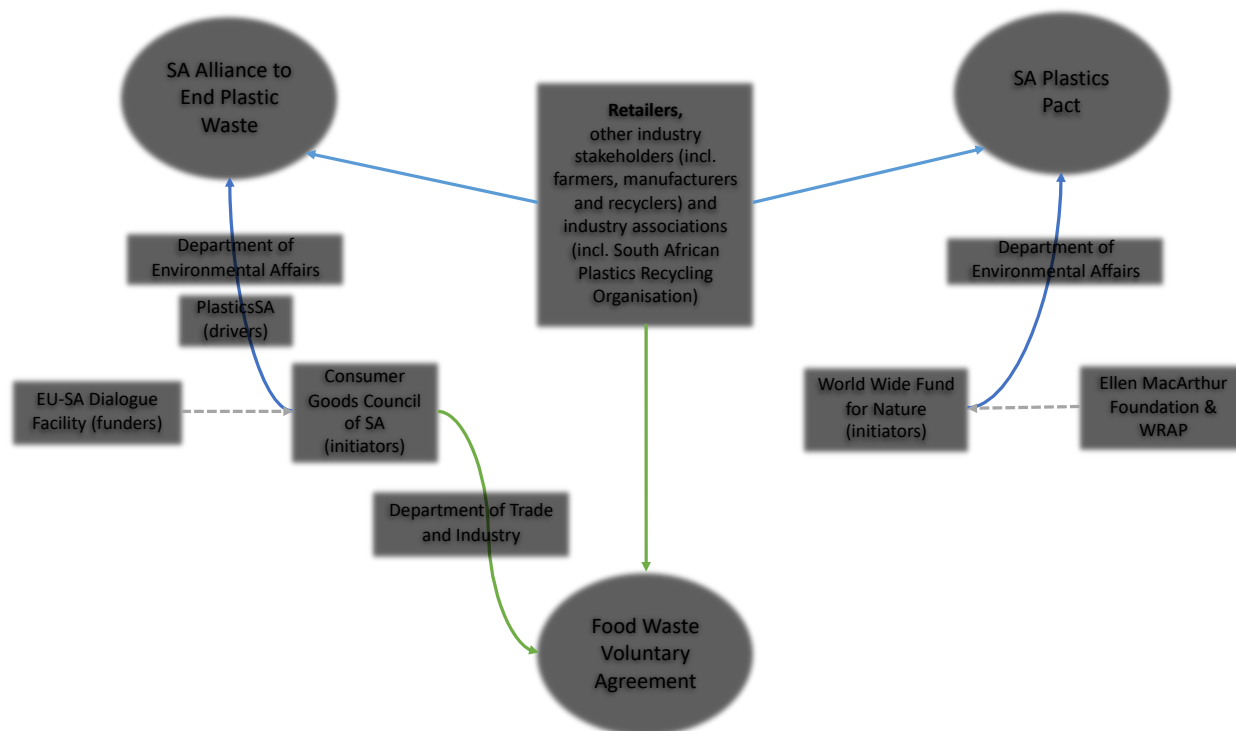
## **4.2.2 Institutional and Retail Initiatives**

### ***4.2.2.1 Institutional Initiatives***

There are three significant institutional initiatives that are currently in the process of being developed, all of which will be implemented within the 2020 year. This includes the Food Waste Voluntary Agreement (FWVA), the South African Alliance to End Plastic Pollution in the Environment, and the South African Plastics Pact. All of these initiatives are supported by a variety of stakeholders including national government (i.e. The Department of Trade and Industry (dti) and DEFF), industry associations (i.e. SAPRO, Consumer Goods Council SA (CGCSA) and PlasticsSA), sustainability organisations (i.e. The Waste and Resource Action Plan (WRAP), a UK-based organisation and WWF), and industry across the supply chain including farmers, producers, manufacturers, distributors, retailers, and recyclers. The relationships between these stakeholders and each of the initiatives are presented below and thereafter each initiative is briefly discussed.



**Figure 21 Institutional Initiative Map**



#### a) Food Waste Voluntary Agreement

The Food Waste Voluntary Agreement (FWVA) is being driven by the CGCSA and the dti. It was initiated in 2017 after the European Union-SA Strategic Partnership (The Dialogue Facility) funded these parties to initiate dialogue around food waste and start the process of working towards a voluntary agreement around food waste. In initial dialogue sessions with stakeholders, a foundation was laid for the development of a road map and business plan. The business plan is being finalised and is set to be completed by March 2020 after a final round of dialogue workshops with key stakeholders. Dialogue has been structured around priority working groups, which include retailers (including consumer relationships), food manufacture and distribution, informal food sector, on-farm/post-harvest clusters, etc. The business plan will provide clear guidelines that stakeholders will adhere to, in line with the Sustainable Development Goal Target 12.3 of halving food waste by 2030.

Based on stakeholder feedback, the buy-in from both government and industry (especially retailers) has been positive. In relation to implementation, the voluntary agreement (VA) will be the tool that will be industry-led via a public special purpose vehicle (or, public benefit organisation [PBO]), with Operation Phakisa's Chemical and Waste programme providing the policy directive.

A monitoring and evaluation (M&E) reporting group will be established and will be comprised of key stakeholders such as CSIR and StatsSA, who will monitor and measure the progress of signatories in achieving the targets. The core signatories of the VA are farmers, food manufacturers and retailers, while anyone else can sign up as an associate signatory. Retailers, as core signatories, will need to submit their food waste reduction achievements and signatory packs will go to each retailer.

This will greatly assist in addressing food waste as, for the first time in South Africa, major retailers will be measuring and monitoring their food waste in a structured, uniform manner based on a baseline which will be developed once the VAs are officially launched in April/May 2020.

#### b) South African Alliance to End Plastic Pollution in the Environment

The South African Alliance to End Plastic Pollution in the Environment is an initiative being driven by PlasticsSA under the banner of the CGCSA. It is essentially an alliance between stakeholders within the plastics value chain to work towards preventing and eradicating plastic waste from entering the natural environment, particularly the ocean and rivers. The first priority of the alliance is to address issues relating to single-use plastic packaging. This will focus on innovation and development of alternatives (i.e. more environmentally friendly products such as biodegradable products) and improving recycling rates of plastic products. As such, the focus is more around the 'end-of-pipe' rather than changing behaviours towards reduction of plastic. The stakeholders will form various working groups, including: biodegradable plastics; education, awareness and clean-ups; infrastructure development; and product development. Outcomes of the alliance working groups will hopefully also be incorporated into the SA Plastics Pact (see below) to ensure alignment. In relation to retailers, stakeholders have noted the alliance focuses more on reducing and recycling post-consumer waste, while the SA Plastics Pact (detailed below) places more pressure on the retailers to change behaviour.

#### c) South African Plastics Pact

The South African Plastics Pact is a cross-sector collaborative platform that brings together key players in South Africa to drive solutions supporting a circular plastics economy. It is being initiated by the WWF and supported by the Ellen McArthur Foundation and WRAP. The Pact is in line with the Ellen MacArthur Foundation's New Plastics Economy Vision and similar initiatives have already been implemented in the UK, France, Netherlands, Chile, and Malaysia. SAPRO and DEFF are also supporting the initiative. The WWF will coordinate the implementation and

operation of the Pact, which will be handed over to the government and industry for implementation.

The Pact is essentially a collaboration between all members in the plastics value chain, and currently comprises 15 members, most of which are retailers, brand owners, converters and recyclers. The Pact will provide members with common agreed upon targets that will be achieved by 2025. The targets can be seen in the image below. In relation to retailers specifically, some of the specific approaches to deal with plastic waste relate to packaging design and sustainable production and consumption of plastic products. Stakeholders have indicated that there is a need to design for re-use and recycling (i.e. incorporating circularity into design thinking), as a lot of plastic is currently designed to be single use. Stakeholders have indicated that retailers are currently supportive of the Pact, but that this has been driven largely by pressure from consumers for retailers to change their behaviour.

**Figure 22 Targets for the Plastics Pact**



Source: WWF, 2019

#### **4.2.2.2 Retailer Initiatives**

Globally and locally, there are numerous initiatives aimed at reducing packaging and food waste being driven by organisations and retailers. Many of these are unpacked within the Literature Review in Section 2. However, during the stakeholder engagement process, several such initiatives were highlighted which are particularly relevant to the research.

### a) Global Retailer Initiatives

Although not directly retailer-driven, during consultation with WRAP, a number of particularly relevant initiatives were pointed out which were initiated with major support from retailers and provide some key insight for retailers within South Africa. WRAP started a campaign called *Love Food Hate Waste*, which although primarily focusing on reducing food waste within households, has implemented a number of initiatives with support from retailers. These include:

- An agreement to remove buy-one-get-one-free from perishable items (as often these are bought due to the special, and then discarded by the consumer),
- Placing pressure on retailers to re-think 'wonky' vegetables,
- Using resealable packaging for cheese, and
- Improving clarity around date labels, specifically, a single date label.

During other stakeholder engagement, it was noted that within the EU, lots of retailers are enforcing strict guidelines on manufacturers to enhance the use of recyclable materials and develop alternatives such as compostable packaging. This has an impact on SA manufacturers and exporters who export fresh produce to Europe, as they need to comply with such guidelines. Additionally, retailers are sending their food waste to a distribution centre where it gets consolidated before being sent to charities.

Another initiative of retailers that was identified during consultation relates to stock control, which if done ineffectively, results in the spoilage of food and creation of food waste. Albert Heijn, the largest Dutch supermarket, recently started testing plastic-free fruit and vegetable displays within 1 540 of their stores with the help of dry-misting technology from Contronics. This technology uses a mist to reduce the surface temperature of fresh produce displays, while reducing energy requirements.

Some other initiatives noted by stakeholders includes 'Approved Foods', which sells food that is near or just past its best-before date (but still perfectly fit for human consumption) at discounted rates; 'Food Too Good To Go' (as mentioned in Section 2.3.1), which connects mainly cafes and restaurants with customers who want to purchase food before it is disposed; 'Smart Meters', which uses AI technology to assess food waste in the kitchen and determine if it is preparation waste or plate waste, and quantifies this (both in terms of volume and value); and a similar system from 'Winno' which reports on what is wasted, the value/cost of this waste, and the environmental impact/cost.

### b) South African Retailer Initiatives

Within the South African retailer landscape, various activities are being initiated to reduce packaging and food waste. Although a number of these are being driven by organisations/institutions (such as DEFF, CGCSA, WWF, PackagingSA, PlasticsSA, etc.), retailer support has been significant, and stakeholders have highlighted the good progress being made by major retailers in the country. In addition to the institutional initiatives identified in Section 4.2.2, it was highlighted during engagement that PackagingSA is currently developing guidelines for design for recycling while CSIR has developed food waste and prevention guidelines for South Africa under DEFF, all which assist retailers to understand the type of initiatives and programmes that can drive to waste reduction within retail/distribution.

One such programme that has emerged from the DEFF guidelines is the establishment of a 'green grading council' to which retailers have agreed to roll-out a standardised labelling system. For example, it was noted that items that are not recyclable will have a red dot on the packaging to ensure easy identification of non-recyclable products (and hopefully lead to increased pressure on brands from consumers).

In terms of retailer initiatives, one stakeholder noted that Checkers and Shoprite have started marking down food when they reach sell-by date. They also noted that there has been an increase in ready cooked food within retail stores, which reduces food wastage as food nearing its best-before/sell-by-date is used to make prepared food items. In addition to this, there has been a significant increase in retailers donating food to food banks and charities such as Food Forward and The Salvation Army.

Another initiative identified, although not directly attributed to retailers, is that suppliers (farmers and manufacturers) are requesting that unsold produce be returned to them by the retailer so that they can gauge what wastage is occurring, rather than leaving disposal of such produce to the retailers.

### 4.2.3 Socioeconomic Impact of Waste on Livelihoods

The primary data collected points to two main ways in which waste management and recycling can impact on the livelihoods of South Africans. Firstly, waste provides an opportunity for job creation and income, and contributes to the economy through the creation of new value chains, from collection through to the manufacture of new products. However, the ability of the recycling

industry to create employment relies heavily on enhanced collection and recycling rates. Secondly, the lack of proper waste management will result in diminished health and wellbeing of people due to a poor environment.

Findings suggest that a well-established recycling and alternatives industry has the potential to create even more formal employment along the value chain in on-site sorting, transportation of recycling to material recovery facilities, baling and outbound transport. Respondents acknowledge that waste pickers (mostly informal) earn an income through the waste sector and form an integral part of the recycling industry, and suggest that developing the SA recycling industry, through private and public partnership, will enable the integration of waste pickers into the formal waste sector.

Improving waste management is good for both the economy and the health and wellbeing of people. Respondents argued that waste is synonymous with air, water and soil pollution which can have a negative impact on other industries such as agriculture and tourism. Therefore, issues such as plastic pollution need to be addressed in a country like SA. However, respondents also argue that waste management needs to be done by municipalities, and industry can focus on other aspects such as recycling.

#### **4.2.4 Recommendations**

Various recommendations for retailers were noted by interviewees. The predominant recommendation centred on understanding and considering waste across the entire chain (from growers through to consumers and even post-consumers). It is important for retailers to collaborate and work with existing structures, initiatives, pacts, etc., to find sustainable solutions. Specific recommendations related to this theme included:

- Retailers should use their platform to educate the customer (so they make better decisions). This includes creating more in-store facilities to return recyclables, providing information on how to reduce food waste on packaging and providing recipes to encourage use of produce so that it isn't wasted (for example, recipes for when fresh produce is reaching its best before date).
- Retailers should design their packaging for its 'end of life', i.e. consider what will happen to the packaging after the product is consumed.

- It was recommended that retailers join Packaging SA and other producer organisations so that whole-of-industry solutions to waste can be created. When retailers come up with solutions in a silo, they could end up doing more harm than good for the product value chain.
- Finally, it was recommended that retailers measure their waste as thoroughly as possible. National policy on food waste and a national champion to support this, with a central portal for reporting, is essential for monitoring the reductions over time.

## CHAPTER 5. DISCUSSION

### 5.1 THE PROBLEM

In 2016 the waste economy contributed approximately R24.3 billion to SA GDP, with potential to grow further, and employed about 116 000 people formally and informally. Furthermore, the costs of the negative impacts attributed to waste are reduced, such as:

- Reduced air and water quality,
- Less available land for housing, recreation and commercial purposes due to the need for more landfills and dumps, and
- Litter and dumping in natural ecosystems, reinforcing the need to address waste.

Literature suggests that retailers have a pivotal role to play in the reduction of packaging waste. Data from 2017 shows that SA consumes 3.8 million tonnes of waste annually. Despite this, of all the retailers that were surveyed, only 54% are currently implementing waste reduction initiatives which is indicative of the opportunity for growth in the waste sector as well, as the need to address waste in the retail industry.

According to literature, the main drivers of green retailing are policy from global institutions and national governments, pressure from stakeholders such as consumers, as well as financial incentives, e.g. cost reductions or revenue potential. The findings from this survey show that the main reasons why retailers in SA implement green initiatives are consumer pressure (28.5%) and intrinsic company/retailer values (20.3%).

The main challenges that emerged in the survey results are that there are not many alternatives available for retailers to implement green initiatives, there is insufficient support from government or incentives to implement green initiatives, retailers cannot afford to invest in green retailing, and lastly, consumers and suppliers are not receptive to changing their business practices and behaviours. Research findings from interviews with industry specialists and surveys with retailers also suggest that lack of willingness/investment from property landlords inhibits green retail practice.

The impact of food waste on a global and local scale is well documented, such as wasted resource inputs when there is food loss and waste, the contribution of food waste to food insecurity when the cost of waste is added to the retail price, and the environmental effect of greenhouse gases



that are emitted when food is disposed of at landfill. However, the findings suggest that a lot of work still needs to be done in terms of implementation to localise policies and solutions to suit the SA context. This is evidenced by the survey results which showed that most retailers (37%) said that they discard all their food waste in municipal waste systems.

A number of causes of food waste emerged during primary data collection. Firstly, the issue of date labels was a recurring theme in the literature and interview responses. According to the CSIR (2019), date labels cause food not to be sold or used in time, and poor stock rotation in-store or at the depot, results in food waste which is then either donated or discarded. Date labels, as they relate to food waste generated by the consumer, were also highlighted. The inconsistency of date labels across retailers results in confusion for consumers which results in food not being consumed under the assumption that it is no longer safe to consume, or food is left on store shelves. Secondly, inefficiency of ordering systems (over ordering or over delivery) since suppliers have a tendency to underdeliver on orders. Thirdly, quality specifications result in food waste, for example, big retailers only sell grade 1 and 2 fresh produce, returning or discarding the produce that does not meet these standards.

## **5.2 POLICY FRAMEWORK AND WASTE REDUCTION INSTRUMENTS**

The SDGs provide an overarching global policy framework towards ending poverty, protecting the planet, and ensuring peace and prosperity for all, with a specific focus on the reduction of waste and improving socio-economic conditions and food security. Waste generated within the retail sector contributes significantly towards the challenges that the SDGs address, and global targets (such as halving food waste by 2030) will assist in guiding global and national initiatives to reduce waste and improve food security.

Various global nations have taken the lead in tackling the challenges presented by increasing packaging and food waste, thereby contributing to the SDGs. Relevant measures to reduce packaging waste include:

- Implementation of systems for return and collection of used packaging (i.e. deposit-return schemes and other incentives) to improve recovery and recycling rates,
- Direct ban on plastic shopping bags and other single-use plastics,
- Encouraging innovation and development of new technologies,
- Driving sustainable packaging initiatives such as designing out waste, packaging guidelines and on-package recycling labels,

- Promoting opportunities for bio-based recyclable and compostable packaging, and
- Global initiatives such as the New Plastics Economy Global Commitment, Global Plastics Alliance and The Alliance to End Plastics Waste.

In relation to food waste, measures include:

- Subsidy schemes, incentives, enabling legislation, and bans on disposal of food waste to encourage new technologies (i.e. Apps to link expiring food to consumers at reduced rates) and alternative uses of food waste (particularly to increase donations to food banks and charities),
- Calls for industry to better measure and monitor food waste (through common methodologies), drive their own food waste initiatives and implement consumer awareness and waste reduction initiatives, and
- Standardising and reducing confusion (via education and awareness campaigns) around date labelling on food products.

Within South Africa, the waste policy landscape is shaped by the National Environmental Management Act (NEMA, 1998) which introduced the principles of waste avoidance, life-cycle waste management, producer responsibility and 'polluter must pay'. The National Waste Management Strategy (NWMS, 2011) assisted to implement these principles, with particular emphasis on the management of waste at each stage of the waste life-cycle, extended producer responsibility (EPR), and the development of industry waste management plans (IndWMPs) within the EPR model. Eight IndWMPs were prepared for the paper and packaging industry in 2018. However, as from January 2020, DEFF has scrapped IndWMPs as a requirement, and will instead start a new process for the creation of industry-managed plans.

In addition to the policy landscape, three significant waste reduction instruments are currently in the process of being developed which have relevance within the retail sector. These are the Food Waste Voluntary Agreement (FWVA), the SA Alliance to End Plastic Waste ('Alliance'), and the SA Plastics Pact ('Pact'). Both the FWVA and the Alliance are being driven by the CGCSA and will both be implemented via a PBO, whereas the Pact is being driven by the WWF with support from the Ellen MacArthur Foundation and WRAP, who have initiated numerous pacts globally, and thus has strong global guidance and support. The relevance of each instrument to retailers is given below:

- FWVA: Retailers will be signatories and agree on the target of halving food waste by 2030, and will need to submit food waste reduction achievements.
- Alliance: Will primarily address issues relating to single-use plastic packaging, specifically alternatives and improving recycling rates, with less pressure on retailers and more focus on end-of-pipe initiatives (such as clean-ups and campaigns).
- Pact: Cross-sectoral collaborative platform across the plastics value chain, with retailers (and other stakeholders) to agree on common targets to be achieved by 2025, and some approaches to achieve these including packaging design and sustainable production and consumption of plastic products.

## **5.3 RETAILER INITIATIVES**

### **5.3.1 Waste Reduction Initiatives: Food**

The primary research findings show that SA green practices are in line with international trends. For example, globally, NPOs are a vital stakeholder that distribute surplus food from retailers to communities and individuals in need. Major SA retailer reports and interviews with industry specialists show an increase in the amount of food that is being donated to NPOs. Industry specialists highlighted that this was accomplished due to the buy-in and support from retailers. Furthermore, surveyed retailers said inedible food is composted or donated/sold to pig farmers which was also noted as global practice, in addition to generating biogas. One retailer stated that slightly damaged vegetables are peeled and processed for delicatessen use.

Several retailers' approach to waste is centred on responsible production (farming) and procurement, which protects the environment and ensures that the consumer gets the best quality products. They argue that retailers can be sure of the product quality because they know where their produce comes from. Surprisingly, none of the surveyed retailers reported reducing the price of products when they are approaching sell-by dates, which emerged in the literature as a practice adopted by major SA retailers. On the other hand, globally, some initiatives are trying to remove buy-one-get-one free promotions on perishable foods in an effort to reduce food waste. This is done to deter consumers from purchasing more than they need, or can consume, just because the items are on special.

### **5.3.2 Waste Reduction Initiatives: Paper and Plastic Packaging Waste**

From the literature review it emerged that several European retailers are involved in packaging redesign to reduce packaging waste. The SA retail industry as a whole has not reached this stage, which one industry specialist suggested is due to the fact that SA lacks the required skills to conduct this type of research and development (R&D). However, some large retailers are conducting research and implementing packaging redesign. For example, one South African retailer developed a plant-based plastic bottle for milk, while another introduced their store brand carbonated soft drink in a PET bottle, 25% of which is made from post-consumer waste. The retail industry has implemented initiatives to reduce, reuse and recycle paper and plastic, amongst other things.

Most surveyed retailers said they have recycling initiatives in their corporate offices, DCs and at the retail stores. The main difference between recycling in SA and globally is that global initiatives included increasing access to recycling stations by providing recycling points inside or outside the supermarkets, whereas, many retailers argued that it was the responsibility of local municipalities to increase the number of recycling stations. Two SA retailers are testing/piloting reverse vending machines to make it easier for consumers to recycle. Other initiatives that are in line with global practice include setting specific recycling targets, and retailers offering recyclable and recycled plastic bags, reusable bags, as well as recycling clothes hangers.

In terms of packaging reduction, surveyed SA retailers stated that they insist on less plastic and bubble wrap from their suppliers, have removed plastic straws from their businesses and do not offer plastic shopping bags but offer alternatives such as biodegradable packaging and fresh produce in loose format. Globally, loose format fruit and vegetables, plastic-free aisles and zero waste stores are gaining traction at a faster pace than in SA. For instance, Albert Heijn, the largest Dutch supermarket, recently started testing plastic-free fruit and vegetable displays within 1540 of their stores with the help of dry-misting technology from Contronics. Local retailers are also implementing their own versions of this. From an administrative viewpoint, numerous companies have implemented paperless POS systems which helps them reduce the amount of paper they consume.

### **5.3.3 Education Initiatives**

Many retailers implement education/training initiatives for their staff as well as campaigns to build public awareness about waste reduction. Most education initiatives focus on building awareness

on the importance of recycling. Surveyed retailers also noted that a significant amount of supplier education also needs to take place in order to reduce packaging waste down the supply chain. Furthermore, industry specialists argue that in order to reduce food waste in store, merchandisers need to be adequately trained on how to handle and display fresh produce in particular. Globally, the retail industry is investing in educating the consumer to interpret food labels correctly and to dispel the myth that imperfect fresh produce has an inferior taste when compared to well-shaped fresh produce

## CHAPTER 6. RECOMMENDATIONS

### 6.1 Recommendations for Retailers

This section presents a set of recommendations for South African retailers to assist reduce wastage and drive initiatives to create new value from waste, thereby assisting to address the challenge of food security and contribute to improving the socio-economic livelihoods of South Africans. It should be noted that these recommendations are not 'one size fits all' and there are nuances that must be considered before implementing individual recommendations. For example,

- While biodegradable plastics are recommended as a waste reduction option, they are not always better for the environment than recyclable plastics because South Africa does not currently have the infrastructure to deal with composting of biodegradable plastics.
- Naked food isles are also recommended as a waste reduction option but, while they reduce packaging, they can also increase food waste because customers don't want to buy food without packaging and food without packaging often perishes faster.

It is for reasons such as these that retailers should carefully consider the entire lifecycle of the product within their unique environment, and their unique consumer behaviour before implementing any of the following recommendations.

Appendix 1 summarises these recommendations into a checklist that retailers can use to measure which of the suggested recommendations have already been implemented.

**Table 6 Retailer Recommendations**

Description	Recommendation (including examples currently being implemented by retailers, where available)
<b>Production and distribution</b>	
<p><b>Sustainable supply chains:</b> Retailers must continually seek to improve distribution throughout the supply chain to reduce their carbon footprint and food and packaging waste. This includes implementing the latest technological innovations to track stock and improve efficiencies.</p>	Use local suppliers to reduce the distance that products need to travel
	<p>Optimise ordering/stocking systems, e.g.</p> <ul style="list-style-type: none"> <li>• Improve the accuracy of demand forecasting so as to avoid over-stocking</li> <li>• When imbalances between supply and demand do occur, utilise companies like Foodeez who purchase non-perishable food items from retailers, manufacturers and wholesalers and resells them through various retailers</li> </ul>
	Improve cold-chain management, for example, by placing increased focus on maintenance
	Purchase and distribute direct from the farmer to the store
	Align perishable products sold with what is currently in season
<p><b>Designing for end-of-life:</b> Globally, design is taking centre stage as a way to eliminate unnecessary packaging. Not only can packaging be designed to encourage recycling and reuse, but products can even be designed to eliminate packaging altogether. Retailers are encouraged to collaborate with other stakeholders within the supply chain to drive design that reduces the need for packaging waste and drives reuse and recycling.</p>	<p>Reduce single-use plastics in favour of easy to reuse and recycle plastics, e.g.</p> <ul style="list-style-type: none"> <li>• Use resealable packaging for cheese</li> <li>• Eliminate plastic microbeads</li> </ul>
	<p>Reduce the volume of packaging, especially plastic, e.g.</p> <ul style="list-style-type: none"> <li>• Use of boxes and pallets instead of plastic packaging</li> <li>• Decrease the amount of air in each bag without decreasing the amount of food in the bag to reduce packaging required</li> </ul>
	<p>Utilisation of bio-plastics or biodegradable plastics, e.g.</p> <ul style="list-style-type: none"> <li>• Plant-based paper or plastic cartons or bottles for milk</li> </ul>
	<p>Promote circular product design, e.g.</p> <ul style="list-style-type: none"> <li>• Utilise waste in the production of packaging</li> </ul>
<b>In-store</b>	
<p><b>Reduce single-use and unnecessary packaging in-store:</b> Retailers themselves need to make an effort to</p>	Implement naked food isles
	Install scales at the till

Description	Recommendation (including examples currently being implemented by retailers, where available)
<p>reduce single-use and unnecessary plastics in-store. While it is often difficult to remove packaging, especially on food items, due to health concerns and the need to extend shelf-life, technology is being introduced to mitigate these challenges. For example, dry-misting technology, which allows fresh produce to be displayed without packaging and ensures that it remains fresher for longer while using significantly less energy than traditional refrigerators</p>	<p>Remove plastic bags at the till</p> <p>Replace single use plastics with sustainable alternatives e.g.</p> <ul style="list-style-type: none"> <li>• Replace straws and cutlery with paper and wood alternatives</li> <li>• Use shopping bags at the till that are made entirely from recycled plastics</li> </ul>
<p><b>Green buildings and offices:</b> Within retailer offices, there must be a concerted effort to reduce all waste, including greening buildings. Retailers based within retail centres must continue to place pressure on centre management to ensure that initiatives are being implemented to reduce wastage.</p>	<p>Reduce, reuse and recycle office-related waste such as paper, e.g.</p> <ul style="list-style-type: none"> <li>• Introduce colour coded bins</li> <li>• Reuse paper</li> <li>• Introduce a paperless administration system</li> <li>• Adopt technologies that minimise the need for printing</li> </ul>
	<p>Reduce water usage, e.g.</p> <ul style="list-style-type: none"> <li>• Collect rainwater</li> <li>• Install flow restrictors on taps</li> <li>• Install boreholes</li> <li>• Install grey water tanks</li> <li>• Reuse water from air conditioners</li> </ul>
	<p>Reduce energy usage, e.g.</p> <ul style="list-style-type: none"> <li>• Install solar power</li> <li>• Maximise use of natural lighting</li> <li>• Install LED lights, low voltage lamps and motion sensor lights</li> <li>• Install energy efficient appliances</li> </ul>
	<p>Create extra green spaces around the office, e.g. create a rooftop garden</p> <p>Consider appointing a waste management company with expertise in waste reduction and recycling/reuse. Waste companies mentioned by retailers in the study include:</p>



## Wastage: Its effect on green retail and its role in socio-economic improvement and food security

Description	Recommendation (including examples currently being implemented by retailers, where available)
	<ul style="list-style-type: none"> <li>Don't Waste, Interwaste, Enviroserv, Averda, WastePlan, Echo Waste, Lothlorien Recycling, Waste-Mart, Why Waste, Remade Recycling, The Waste Group, EcoCycle, and ECO Services</li> </ul>
<p><b>Organisational management for green retailing:</b> With regard to organisational management, most large retailers globally, and within South Africa, have champions who drive their sustainability agenda. It is recommended that retailers either appoint a sustainability manager, or if not feasible (for smaller retailers), ensure that senior management is tasked with driving sustainability initiatives with clear actions and targets.</p> <p>Retailers must also ensure that waste reporting is incorporated into their financial reporting mechanisms. This will become particularly important as SA and the rest of the world works towards meeting the SDGs and other targets agreed upon in initiatives such as the Food Waste Voluntary Agreement and the SA Plastics Pact.</p>	Select a sustainability champion
	<p>Set clear actions and targets - some targets being implemented by retailers in SA include:</p> <ul style="list-style-type: none"> <li>100% recyclable plastic packaging by 2022</li> <li>Remove all black plastic packaging by 2020</li> <li>Completely circular business by 2030</li> <li>Halving food waste by 2020</li> </ul>
	Incorporate waste reporting into financial reporting mechanisms
	<p>Educate staff on how to reduce waste, e.g.</p> <ul style="list-style-type: none"> <li>Inform merchandisers of which fruit shouldn't be shelved together because they ripen when they are in close proximity</li> </ul>
	<p>Streamline waste reduction organisational processes and remove barriers to waste reduction, e.g.</p> <ul style="list-style-type: none"> <li>Remove the requirement to get multiple approvals for reducing the price of produce when approaching sell-by date</li> </ul>
<p><b>Sell-by date:</b> When food is reaching its sell-by date but is within the best-before or use-by date, retailers have several options for not wasting this food. A key mechanism in reducing food waste relates to</p>	<p>Monitor waste throughout the food value chain.</p> <ul style="list-style-type: none"> <li>Examples of technology that can assist with this include 'Smart Meters', which uses AI technology to assess food waste in the kitchen and determine if it is preparation waste or plate waste, and which quantifies this (both in terms of volume and value). Other systems such as SAP can also do this</li> </ul>
	<p>Reduce price of food that is reaching sell-by date.</p> <ul style="list-style-type: none"> <li>Technology can assist retailers access this reduced food, for example, mobile applications that allow consumers to locate and purchase food that is close to reaching its sell-by date at reduced prices</li> </ul>

## Wastage: Its effect on green retail and its role in socio-economic improvement and food security

Description	Recommendation (including examples currently being implemented by retailers, where available)
<p>donations. Numerous retailers around the country already have established relationships with organisations such as Food Forward, who distributes surplus food (that would otherwise be disposed of) to charities. Retailers are urged to support such organisations as this has a direct impact on reducing food waste and addressing food insecurity</p>	<p>Utilise food that is reaching its sell-by date or that is damaged, but quality is not compromised for prepared food</p>
	<p>Donate food that has reached its sell-by date to feeding-schemes, e.g.</p> <ul style="list-style-type: none"> <li>Food Forward SA &amp; Gift of the Givers</li> </ul>
	<p>Donate or sell food that has reached its sell-by date for animal feed</p>
	<p>Convert surplus food that cannot be donated or sold into fertiliser or biogas</p>
Consumer	
<p><b>Prevent consumer food waste</b> through implementing practices that prevent consumers from over-purchasing and empowering consumers with sufficient information about the food. Especially important from an information perspective is <b>date</b> labelling, which is the focus of much attention globally as an approach to reduce food waste. Organisations such as WRAP have advocated standardised and simplified date labelling systems and education and awareness around date labels to reduce confusion amongst consumers. Within South Africa, the retail industry must ensure that they contribute to creating a simplified date labelling system to reduce confusion around 'best before', 'use-by' and 'sell-by' dates. Refer to the 'green grading council' which has established a standardised labelling system</p>	<p>Remove buy-one-get-one-free from perishable items</p>
	<p>Give customers the choice between full portions and half portions when purchasing prepared food</p>
	<p>Don't dictate the number of vegetables/fruit that go in a punnet when ordering produce</p>
	<p>Debunk the misconception that the physical appearance of food impacts the taste</p>
	<p>Provide standardised and clear instructions on how to correctly store/refrigerate/freeze food products</p>
	<p>Provide recipes or links to recipes to encourage the use of food produce, including as it reaches its use-by date.</p>
<p><b>Promote consumers recycling and reusing packaging</b> through including information on packaging that assists consumers to reduce waste (can be direct or via QR code). Importantly, information on what recycling labels mean and where items can be</p>	<p>Implement a simplified date labelling system and drive awareness around this labelling</p>
	<p>Implement national standards in recyclable paper and plastic packaging labels and educate consumers about this labelling</p>
	<p>Provide information on where to recycle</p> <p>Promote customers bringing their own reusable bags, netting and containers through, for example:</p> <ul style="list-style-type: none"> <li>Introduction of refill containers for certain product lines</li> </ul>

## Wastage: Its effect on green retail and its role in socio-economic improvement and food security

Description	Recommendation (including examples currently being implemented by retailers, where available)
<p>recycled in order to decrease confusion amongst customers about what is and is not recycled.</p> <p>Retailers must also consider increasing recycling options for customers in-store, by offering separated recycling bins/boxes which must be coupled with awareness campaigns to educate consumers about recycling.</p>	<ul style="list-style-type: none"> <li>• Charge a lower price if shoppers bring their own containers</li> </ul> <p>Install recycling vending machines and stations in-store and in primary schools</p> <p>Implement take back schemes/return policies for containers and products, e.g.</p> <ul style="list-style-type: none"> <li>• Textiles and garment take-back schemes (for reuse and recycling)</li> </ul>
Industry	
<p><b>Collaboration and partnerships</b> between retailers and upstream suppliers and producers, as well as organisations that are driving the waste reduction agenda, are critical in collectively addressing both food and packaging waste. All retailers are urged to join industry associations and take part in initiatives such as the Food Waste Voluntary Agreement, SA Alliance to End Plastics in the Environment and the SA Plastics Pact, all of which aim to bring stakeholders from across the value chain together to develop a common agenda, set targets and drive programmes/projects to reduce waste and create new economic opportunities.</p>	<p>Join industry association/initiative, e.g.</p> <ul style="list-style-type: none"> <li>• Food Waste Voluntary Agreement (Consumer Goods Council and the Department of Trade and Industry)</li> <li>• SA Alliance to End Plastics (Consumer Goods Council and PlasticsSA)</li> <li>• SA Plastics Pact (World Wide Fund for Nature)</li> <li>• Science-based targets initiative</li> </ul> <p>Research industry guidelines, e.g.</p> <ul style="list-style-type: none"> <li>• PackagingSA is currently developing guidelines on designing packaging for recycling</li> <li>• CSIR has developed food waste and prevention guidelines for South Africa under DEFF</li> </ul>

## 6.2 Recommendations for Government

While the study did not aim to provide government recommendations, several recommendations arose through a review of international good practice in waste-related policy and through the primary research. These are summarised below.

**Table 7 Government Recommendations**

Description	Recommendation
Awareness campaigns	<p>Conduct awareness campaigns that encourage a culture shift and new behaviours amongst suppliers and consumers e.g.</p> <ul style="list-style-type: none"> <li>• Education on food date labelling, and</li> <li>• Including the topic of consumer food and packaging waste in the school syllabus</li> </ul>
Monitoring, evaluation and enforcement	<p>Develop a common methodology for measuring the progress in reducing food and packaging waste along the value chain</p> <p>Exchange of good practices with other governments</p> <p>Conduct inspection campaigns and enforce existing laws and regulations</p>
Food waste	<p>Provide incentives for collection and distribution of unsold food across the supply chain</p> <p>Ban throwing away food waste and instead make it a requirement to donate food waste</p> <p>Assess the unintended consequences of the Consumer Protection Act as it relates to restrictions on food waste donations</p> <p>Develop new products and markets for food waste</p> <p>Invest in digital technologies to improve matching food donors to community organisations</p>
Packaging	<p>Ban plastic bags and single use plastics</p> <p>Develop packaging information guidelines</p>
Strategy and policy	<p>Develop a harmonised policy framework off which business can operate, e.g.</p> <ul style="list-style-type: none"> <li>• Set a standard, localised definition for waste, and</li> <li>• Set minimum standards for the industry alongside robust road maps and targets</li> </ul> <p>Remove financial and legal barriers to the reuse and recycling of waste</p> <p>Support industry government partnerships</p>
Infrastructure investment	<p>Increase waste management options such as recycling infrastructure and processes, e.g.</p> <ul style="list-style-type: none"> <li>• More bins in malls,</li> <li>• Establish more recycling centres,</li> <li>• Collect recyclables in suburbs, peri-urban and rural areas, and</li> <li>• Increase the number of municipal dump sites.</li> </ul>
Financial support	<p>Offer incentives/rebates for businesses to reduce, reuse and recycle waste, including the production and implementation of waste management technologies, e.g. solar technology and plastic pellet crushers.</p>

## CHAPTER 7. CONCLUSION

This report combined primary and secondary research to describe the trends of green retailing, especially as it relates to packaging and food waste reduction and culminated in a set of guidelines for retailers. It is evident from the research that many retailers are not implementing waste reduction initiatives. Those retailers who are implementing initiatives are mostly driven by their values and the values of their consumers, to contribute positively to sustainability. The guidelines provide information on waste reduction options for retailers to expand their initiatives and for those retailers who are not yet implementing initiatives, to start. Furthermore, the guidelines for government institutions aim to create a more enabling environment for waste reduction. Both government and retailer guidelines suggest a waste reduction approach that considers the entire product lifecycle, promotes collaboration and encourages further research and development and monitoring and evaluation in the waste reduction space. The outcome of the guidelines should lead to more effective and expansive green retailing, ultimately impacting on improved food security and job creation within the high-potential waste economy.

The study experienced certain limitations and therefore, there are areas that require additional research. For example, since it is essentially qualitative, the research findings may not be statistically representative of the industry and it is not possible to identify causality, and so further quantitative research might be warranted to investigate factors that are preventing waste reduction or that cause a positive attitude to waste reduction activities. Furthermore, this study was not able to investigate and include individualised guidelines for retailers, for example in the informal and e-commerce retail sectors. Finally, one of the study objectives was to show how green retailing could impact on the socio-economic status of residents within South Africa, however a more detailed analysis is required to fully address this topic.

It would be beneficial for the W&RSETA to continue to work closely with the various organisations driving change in this sector in South Africa, to communicate progress of these initiatives to retailers, and to commission further research arising directly from these dialogues.

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ZeroWaste see National Zero Waste Council



## APPENDICES

### APPENDIX 1. GREEN RETAIL CHECKLIST

The following table acts as a green retailing ‘scorecard’. Where action items aren’t within the control of the retailer, the retailer should make some effort to lobby and work with the relevant responsible organisation. Remember that not all actions are suitable for all retailers depending on the local waste infrastructure and unique customer attributes – where actions aren’t relevant, please remove them. If further research or skills training is required for any of the below actions, please reach out to the Wholesale and Retail SETA.

Action	Implemented (✓)
<b>Production and distribution level</b>	
Use local suppliers to reduce the distance that products need to travel	
Optimise ordering/stocking systems	
Improve cold-chain management	
Purchase and distribute direct from the farmer to the store	
Align perishable products sold with what is currently in season	
Reduce single-use plastics in favour of easy to reuse and recyclable plastics	
Reduce the volume of packaging, especially plastic	
Utilise bio-plastics or biodegradable plastics	
Promote circular product design (e.g. where waste can be used for production)	
<b>In-store</b>	
Implement naked food aisles	
Install scales at the till	
Remove plastic bags from the tills	
Replace single use plastics with sustainable alternatives	
Reduce, reuse and recycle office related waste e.g. paper	
Reduce water usage	
Reduce energy usage	
Create extra green spaces around the office	
Appoint a waste management company with expertise in waste reduction and recycling/reuse	
Select a sustainability champion	
Set clear actions and targets	
Incorporate waste reporting into financial reporting mechanisms	

Action	Implemented (✓)
Educate staff on how to reduce waste	
Streamline waste reduction organisational processes and remove barriers to waste reduction	
Monitor waste throughout the food value chain	
Reduce price of food that is reaching sell-by date	
Utilise food that is reaching its sell-by date or that is damaged, but quality is not compromised for prepared food	
Donate food that has reached its sell-by date to feeding-schemes	
Donate or sell food that has reached its sell-by date for animal feed	
Convert surplus food that cannot be donated or sold into fertiliser or biogas	
<b>Consumer level</b>	
Remove 'buy-one-get-one-free' from perishable items	
Give customers the choice between full portions and half portions when purchasing prepared food	
Don't dictate the number of vegetables/fruit that go in a punnet when ordering produce	
Debunk the misconception that the physical appearance of food impacts the taste	
Provide standardised and clear instructions on how to correctly store/refrigerate/freeze food products	
Provide recipes to encourage the use of food produce, including as it reaches its use-by date	
Implement standardised and simplified date labelling and drive awareness around this labelling	
Implement national standards in recyclable paper and plastic packaging labels and educate consumers about this labelling	
Provide information on where to recycle	
Allow and even incentivise customers to bring their own reusable bags, netting and containers.	
Install recycling vending machines and stations in-store and in primary schools	
Implement take back schemes/return policies for containers and products	
<b>Industry level</b>	
Join an industry association/initiative	
Research industry guidelines	
<b>Total score (number of ticks)</b>	



## **APPENDIX 2. GLOBAL POLICY BEST PRACTICE**

In Denmark, the Ministry of Environment and Food has launched numerous campaigns such as education around food waste, date labelling awareness, and encourages collaboration between industrial kitchens and food producers (MEF, 2016). In 2016, the Minister launched a subsidy scheme with the aim of reducing food waste which was to be distributed to various initiatives that aim to address food waste throughout the supply chain (Lemos, 2017). In 2017, the Norwegian government entered into an agreement between five Ministries and the food industry towards the reduction of food waste in line with the SDGs. It calls on industry, which is represented by various associations across the supply chain (and includes the retail sector) to measure, monitor and report on food waste, to cooperate and drive their own food waste reduction initiatives, implement consumer reduction initiatives within their sector, to contribute towards food donations, and prepare dynamic action plans (Norway, 2017).

In relation to direct bans, in 2016, France was the first nation to pass a law that stops retailers from throwing away and intentionally spoiling unsold food, but instead, requires them to donate food waste to charities and food banks – if violated, supermarkets can receive a fine or even jail time (McCarthy, J, 2016a). Shortly after France, Italy passed a similar law to reduce food waste, however, the Italian government introduced tax reforms that make it easier to donate food, rather than penalties (McCarthy, J, 2016b).

Australia's Food Loss and Waste Strategy is underpinned by four priority areas, namely policy support, business improvement, market development and behavioural change (Australia, 2017:17). All of these priority areas have some bearing on the retail sector, but of particular interest are the focus areas of creating enabling legislation to support food waste initiatives, adoption of new technologies, normalising food waste considerations into business practices, and connecting food waste sources to users (Australia, 2017:17).

The Danish Government developed a waste prevention strategy which provides some insight into how packaging waste will be addressed. Some initiatives prioritised by the Danish Government include “a partnership on plastic packaging between businesses and organisations”, an “inspection campaign targeted at selected types of packaging”, and “information campaigns and subsidies for development and demonstration of environmental technologies to increase the rate of recycling and establish more closed-loop value chains for packaging waste” (Denmark, 2015).

The Australian government adopted the 'Australian Packaging Covenant 2017-2022' with the overarching target of making 100% of packaging reusable, recyclable or compostable by 2025 or earlier, 70% of plastic packaging recycled or composted, 30% average recycled content across all packaging, and the phasing out of problematic single-use plastics (APCO, 2019). The targets set by the Covenant will be addressed through the priority focus areas of design, systems and education, and materials circularity. Some suggested resources include sustainable packaging guidelines and framework, the Australian recycling label program, and a collective action group (which includes retailers) that will create an agenda for the strategy and the monitoring of targets (APCO, 2019).

The Canadian Council of Ministers of the Environment (CCME) adopted a strategy for reducing packaging waste and promoting more sustainable packaging solutions, which builds onto the Canada-wide Action Plan for Extended Producer Responsibility (CCME, 2009). Although aimed at producers, the Strategy suggests that retailers can "identify opportunities for improvements, influence suppliers to provide more sustainable packaging through purchasing decisions, and facilitate take-back of packaging" (CCME, 2009:10). Some general measures include an industry-government working group, industry agreements, standards and certification for compostable packaging, a labelling system for recyclable packaging, reuse programs, education programs, and a shopping bag index. More recently, the Canadian government developed the Strategy on Zero Plastic Waste which focuses on preventing, collecting, and recovering plastics (CCME, 2019). Some actions to achieve the targets include product design for greater durability, reuse and recycling, responsible use and recycling of single use plastics, expanded collection systems, improve demand for recycled plastics, improved recycling capacity, empowering businesses to prevent and manage waste (CCME, 2019:6-10).

Rwanda was the first country in Africa to completely ban non-biodegradable polythene plastic bags back in 2008 (Clavel, 2014). It is reported that violators can face fines of 50,000 francs (approximately US\$52) or even jail time (Hardin, 2018). More recently however, the Rwandan government passed a law prohibiting the manufacture, import, sale and use of single-use plastics, including bags, cups, straws, cutlery, bottles and most food packaging (Kuteesa, 2019). In 2017, Kenya adopted a ban on plastic carrier and flat bags "which has been successfully implemented and has become a model for the East African region" (Kenya, 2018:10). According to the Policy, the ban has dramatically reduced plastic litter on roadsides, in trees, and in cities, and has reduced the volume of plastic to landfill (Kenya, 2018:10). Anyone found guilty of possession of

plastic bags, which includes manufacturers, importers, distributors, and users, can face fines of up to US\$38,000 or four years in prison (Livni, 2019).

### **APPENDIX 3. SOUTH AFRICAN POLICY FRAMEWORK**

Within the Constitution of South Africa, 1996 (No. 108 of 1996), section 24, The Bill of Rights, states that everyone has the right “to an environment that is not harmful to their health or well-being” and “to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development” (South Africa, 1996:9).

Within the parameters of these rights, the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA) was developed in order to provide overarching principles for environmental management. In summary, these principles include waste avoidance (and if not avoided, then minimised, reused and recycled), life-cycle waste management, that the producer is responsible, and that the polluter must pay (South Africa, 1998:10-12). These principles were further developed within the National Environmental Management: Waste Act, 2008 (No. 59 of 2008) (NEMWA) which sought, amongst others, to provide measures for the prevention of pollution, norms and standards for waste management, specific waste management activities, and compliance and enforcement (South Africa, 2008:2). Specifically, NEMWA calls for “avoiding and minimising the generation of waste” and “reducing, re-using, recycling and recovering waste” (South Africa, 2008:18).

NEMWA, within Part 1, called specifically for the development of a National Waste Management Strategy (NWMS) which would assist fulfil the objects of NEMWA. The NWMS (2011) is structured around eight goals and a toolbox for waste management activities to achieve these goals, which include norms and standards (to manage waste at each stage of the waste life-cycle), industry waste management plans (see below), and extended producer responsibility (EPR) (South Africa. Department of Environmental Affairs, 2011:7). Of particular relevance to the retail sector, the NWMS also calls for the private sector to minimise the generation of waste and take responsibility for their products throughout the product’s life-cycle, including developing systems and facilities to take back and recycle waste at the end of a product’s lifecycle, develop industry waste management plans, and comply with the conditions and regulations (South Africa. Department of Environmental Affairs, 2011:8-9).

In addition, the NEMWA also calls for the development of Industry Waste Management Plans (IndWMPs), both voluntary and mandatory, in the case where an activity that generates waste affects more than one province or is conducted within more than one province (South Africa, 2008:42). Seven industry waste management plans were received by The Department of Environmental Affairs for the paper and packaging industry by the due date of 5 September 2018 (South Africa. Department of Environmental Affairs, 2018).

From January 2020 however, the Department of Environment, Forestry and Fisheries announced that Section 28 of the Waste Act will be scrapped, and that IndWMPs will no longer be required. Rather, a new process will be established under Section 18 which will allow for industry-managed plans rather than government-managed plans.

## APPENDIX 4. REDUCING FOOD WASTE

**Denmark.** Denmark Against Food Waste is a national partnership between some of the largest food retailer stores and suppliers and non-profit organisations to reduce food waste and loss in Denmark (State of Green, 2019). 2000 tonnes of food are thrown away daily in Denmark which amounts to approximately 700,000 tonnes annually from the start to the end of the food value chain (State of Green, 2019; Askew, 2018). The initiative involves increasing the transparency of waste produced by measuring and publishing food waste and loss data and then taking the necessary action to reduce this waste. While the primary focus of Denmark Against Food Waste is on food waste reduction, this initiative tackles the environmental impact of high levels of food waste and loss in relation to inefficient use of resources and the carbon footprint of food waste (State of Green, 2018). The Salling Group is one of the retailers that have signed up for this initiative, as well as Unilever, Nestle and Peter Larson Coffee. Food waste has been an important focus for the Salling Group which is evidenced by the fact that they were first to publish data on their food waste and aim to halve their food waste by 2030 (Salling Group, n.d.). The group also makes strategic investments in programmes and initiatives that will help to solve food waste and loss. The Salling Group has already made significant progress towards halving its food waste across its stores (Bilka, føtex, Net, Salling and BR). For example, food waste across all stores amounted to 42,826 tonnes in 2014 (Salling Group, n.d.). In 2018, the food waste for all stores was 29 787 tonnes which equals a reduction of 44% (Salling Group, n.d.).

The Salling Group has adopted numerous strategies to deal with food waste and loss including:

- A food waste app - Netto's food waste app gathers surplus food information and shares it with customers thereby reducing food waste and enabling customers to save on grocery items.
- Reducing retail selling price of products as they approach their sell-by-date – this increases the incentive to purchase, and by highlighting the products with yellow stickers and sometimes grouping the reduced items helps customers to easily identify the products.
- Converting organic waste to energy – if food cannot be sold or donated it is turned into fertiliser or biogas. Most of the organic waste produced by Bilka and fotex stores is converted to energy.

- Using technology to limit waste along the value chain - the Salling Group uses the SAP IT system to monitor waste throughout the food value chain, find the largest contributors to waste and creates solutions that directly target the waste sources.
- Initiatives during holidays – donating surplus food to social organisations during Christmas and Easter in order to limit food waste

Furthermore, the Salling Group has been working with the Danish Food Bank since 2014 and helped to create the first social supermarket in the Nordic region, WeFood, run by DanChurchAid (Salling Group, n.d.). The store retails its products for between 50 and 70% less than normal retail prices and includes items such as fruits, vegetables, bread and tinned food. The proceeds made from the three WeFood stores is distributed to the poor throughout the world.

**The United Kingdom (UK).** Supermarket chain store Tesco has partnered with the World Wide Fund for Nature (WWF) to address three major areas of concern that will help to reduce the impact of the food industry from primary production to consumption (Tesco, 2018). These areas include:

- Helping customers make more informed and sustainable decisions in supermarkets,
- Focusing on solutions that enable food production to restore the environment and slow down climate change, and
- Removing packaging and food waste from the retail sector.

There is a strong focus on the shopper, based on research by Tesco and WWF which found that UK shoppers want to make consumption choices that are less harmful to the environment (Tesco, 2018). Additionally, in 2018, Tesco announced that they would be removing the 'best before' labels from their (store brand) fruits and vegetables which is different to the meaning of a 'use-by' label (Hitchings-Hales, 2018). The 'best before' label indicates that the food quality may be lower, but it does not make the food inedible. Whereas, the 'use-by' label is usually on products such as meat and dairy and indicates a safety risk if consumed after its 'use-by' date.

**Technology.** Retailers (and restaurants) are making use of technology to reduce food waste. Apps such as Too Good To Go which started in the UK and in now is 9 countries, Last Minute Sotto Casa from Italy as well as Karma which was initiated in Sweden (Grant, 2019). These apps all enable businesses to sell surplus food at a discounted price. Too Good To Go is an app that hosts supermarkets, restaurants and bakeries. Individuals place an order with any of the retailers on the app and the retailer prepares a meal box made of surplus food, which has been discounted, and the individual can pick it up at a time that is determined by the retailer. In Italy's Last Minute

Sotto Casa, retailers and individuals sign up on the app. When a grocery store or butcher has product items that they need to sell off at the end of the day, they advertise the discounted food on the app and individuals receive a notification. Karma works in a similar way to Too Good To Go.

**Australia.** In Australia, approximately 4 million people experience food insecurity annually and the value of food waste is around \$20 billion (FareShare, 2018). Retailers in Australia partner with organisations like FareShare, which is an Australian charity organisation that is tackling food waste and food insecurity. The organisation targets surplus foods from supermarkets, farmers and wholesalers and prepares around 6000 free meals. Their operations were expanded in 2018 with the capacity to produce up to 5 million meals annually, in partnership with Foodbank. FareShare in the UK partners with retailers such as Asda, the Co-op, Sainsbury's and Tesco, as well as other stakeholders along the food value chain (FareShare, 2019).



## APPENDIX 5. REDUCING PACKAGING WASTE

### Fast-Moving Consumable Goods

**USA.** Retailers in the USA have made bold commitments to reduce both plastic and paper packaging waste. Retailers such as Kroger, Target and Walmart are making changes in packaging of their store brand products in the following ways (Pearson, 2019):

- Kroger decreased the amount of plastic resin it uses in the packaging of its store brand items by around 4.5 million kilograms (10 million pounds).
- Target has set itself a goal to completely remove all polystyrene plastics from its stores and to source all its store brand paper packaging from sustainable forests by 2020.
- Walmart set a target that by 2025 all its store brand packaging would be 100% recyclable, reusable or compostable.
- Aldi has not used single-use plastic shopping bags for many years, and it has also set a goal to use 100% recyclable, reusable or compostable packaging materials by 2025.

Although these retailers have made these commitments, current responses of major retailers to plastic pollution were lacking, according to Greenpeace USA (2019:3). The assessment report – Packaging Away the Planet – found that many of the retailers do not have plastic reduction targets. Only 3 of the 20 retailers that were assessed had targets relating specifically to the reduction of plastic usage, namely, Aldi, Kroger and Wegmans (Greenpeace USA, 2019:4).

**The UK.** More than 20 years ago, Lush Cosmetics, an international retailer founded in the UK, developed a number of products such as a shampoo that comes in a bar and a solid bath bomb that mimics bubble bath that, unlike many personal care products, are not packaged in plastic bottles (Borunda, 2019). Food delivery companies such as Just Eat give customers the choice to reduce the amount of single-use plastics they consume after research conducted by the company found that almost 75% of its customers did not want these added items such as spoons, forks, serviettes and condiments (Spaen, 2019).

Another UK retailer that is making significant efforts to adopt circular business practices and develop solutions that will reduce packaging waste is Marks and Spencer (M&S). M&S (2019) lays out strategic actions that will help them achieve these goals, which are to:

- **Reduce:** M&S reduced the amount of plastic they use-by trialling plastic-free packaging for their fruits and vegetables in one of their stores. Furthermore, M&S replaced plastic cutlery with wooden alternatives and plastic straws with paper straws. Through design, they achieved a reduction of 37% for each bag of chips and popcorn by decreasing the amount of air in each bag without decreasing the amount of food. Within the clothing side of the business they removed plastic covers from 500 000 of their cashmere jerseys. These actions resulted in the business shedding 1 000 tonnes of plastic.
- **Reuse:** to promote reuse, M&S has phased out single-use plastic bags. They also introduced an eco-shopping bag that is made from 75% recycled plastic. M&S cafes charge 25 pence less to customers who bring their own cups and 99% of the hot drinks at the cafes are served in reusable china. In July 2019, M&S launched another reuse initiative for prepared food which also offers a 25 pence discount per meal for customers who bring their own reusable containers (Don, 2019).
- **Recycle:** M&S has set a target to have 100% recyclable plastic packaging by 2022. They also aim to remove all black plastic packaging by 2020 because it is notoriously difficult to recycle. To further catalyse recycling rates, M&S has made recycling more convenient for its shoppers. Lastly, M&S is working to educate the next generation of shoppers by partnering with Wastebuster to teach children about recycling and placing recycling stations at primary schools.
- **Partnerships:** M&S recognises the importance of partnering with businesses, NGOs and government in the fight against plastic pollution as well as designing and choosing solutions that are better for the environment.

**The USA.** Meow Meow Tweet (2019) is an international skin care company that was founded in Brooklyn, New York. Their commitment to reducing plastic waste and making business decisions that have minimal impact on the environment is evidenced in their product and packaging. Their skin care products are vegan and all their products are packaged in glass containers or post-consumer waste paper (Meow Meow Tweet, 2019). Additionally, Meow Meow Tweet has a return and reuse programme for refill containers (Meow Meow Tweet, 2019).

**Hong Kong.** Drink Without Waste (2018) is an initiative that was formed in Hong Kong between NGOs, retailers, waste management companies, major drinks manufacturers and bottlers to address the more than 80% of waste from beverages which end up at landfill. Following research conducted on behalf of the working group ('Single-Use Beverage Packaging Working Group'),

several actions and strategies were developed to tackle beverage waste. Their commitment to reduce waste from non-alcoholic, single-use beverage packaging can be achieved through the reduction, redesign, recovery and recycling of single-use packaging (Drink Without Waste, 2018).

- Reduce – through the implementation of refill dispensers across retailer stores and encourage a plastic-free society and make it more convenient for customers. This means that customers should bring their own bottles and cups.
- Redesign – a combination of private sector and government actions will achieve the goal of redesigning single-use packaging. Redesign includes phasing out packaging that is not or cannot be recycled in favour of recycled packaging, standardise packaging labels. To further support this action, the government needs to introduce legislation that promotes and ensures the use of recyclable packaging materials.
- Recover – the long-term goal is to achieve a 90% recovery rate of single-use plastics through a cash-on-return plan. Research suggests that such rates can be achieved as has been seen in Germany (94% recycling rate for PET bottles), California (90% recycling rates for aluminium and more than 70% recycling rate for glass and PET) and Hong Kong (over 90% recovery rate for used metal cans). This action requires government support in the form of levies and subsidies.
- Recycle – increase recycling rates of drinks packaging by increasing the recycling capability of the country.

**The Netherlands.** Ekoplaza, a Dutch retailer, became the first supermarket in the world to roll out a plastic-free aisle in 2018 (The Guardian, 2018). This included a choice of over 700 product items in the aisle such as rice and cereals, yoghurt and other dairy products as well as fruits and vegetables. The aisles are not completely free of packaging but will, where necessary, have the option to pack items in biodegradable packaging (The Guardian, 2018).

**Canada.** Through crowdfunding and two years of market testing and research, Nada transitioned from a pop-up shop to Vancouver's first zero-waste grocery (Marchildon, 2018). Nada Grocery (2018) offers its customers the same variety of products as a traditional grocery store. Items include meats, fruits and vegetables, spices, personal care items, cleaning and personal care products, as well as environmentally friendly products such as bamboo toothbrushes. Nada's business philosophy is to source ethically, contribute to the circular economy and reduce food waste along the food value chain by sourcing produce directly from farms, where possible, and stocking fruit and veg that may ordinarily be discarded due to imperfections (Nada Grocery, 2018).

**Sweden (Global).** Ingvar Kamprad Elmtaryd Agunnaryd (IKEA), a multinational that sells flat-pack furniture, appliances and other household accessories, has set itself a target to become a circular business by 2030 (IKEA, 2018). In 2018, IKEA was recognised by the World Economic Forum for its progress thus far by receiving the Circular Economy Award for a multinational company (IKEA, 2018). IKEA Sustainability Report released wastage statistics for the 2018 financial year. The data suggests that 73% of the waste produced by the IKEA retail business of Ingka Group is recycled, 13% is incinerated for energy recovery, 13.3% ends up at landfill and 0.5% is incinerated without energy recovery (IKEA, 2018).

In terms of food waste, IKEA has set a goal to halve food waste in their food businesses by August 2020 (IKEA, 2018). In order to capture the amount of waste that is generated in their kitchen, bins are placed on scales and the kitchen staff need to log the reason for the waste on the touch screens. IKEA has saved an equivalent of 3 million meals so far (IKEA, 2018). Since 2017, IKEA TOMAT spray bottles were made up of 50% virgin plastic and 50% from IKEA's own shrink wrap waste whereas before this the bottles were made exclusively from virgin plastics (IKEA Australia, 2018). There are numerous other examples of initiatives that individual IKEA stores are undertaking to reduce waste from food and packaging.

Additionally, IKEA piloted a textile takeback scheme in the UK and Ireland between 2013 and 2016 (REBus, n.d.). The pilot project took place in the Cardiff store where the customers were encouraged to bring back their old textiles which were collected by the YMCA for redistribution in the local community. Any products that could not be reused or recycled were taken by IKEA to be recycled through their systems. Furthermore, the Cardiff store held workshops to teach customers how to refurbish old textiles or how to create something from old textiles. The aims of the scheme were outlined in the case study (REBus, n.d.):

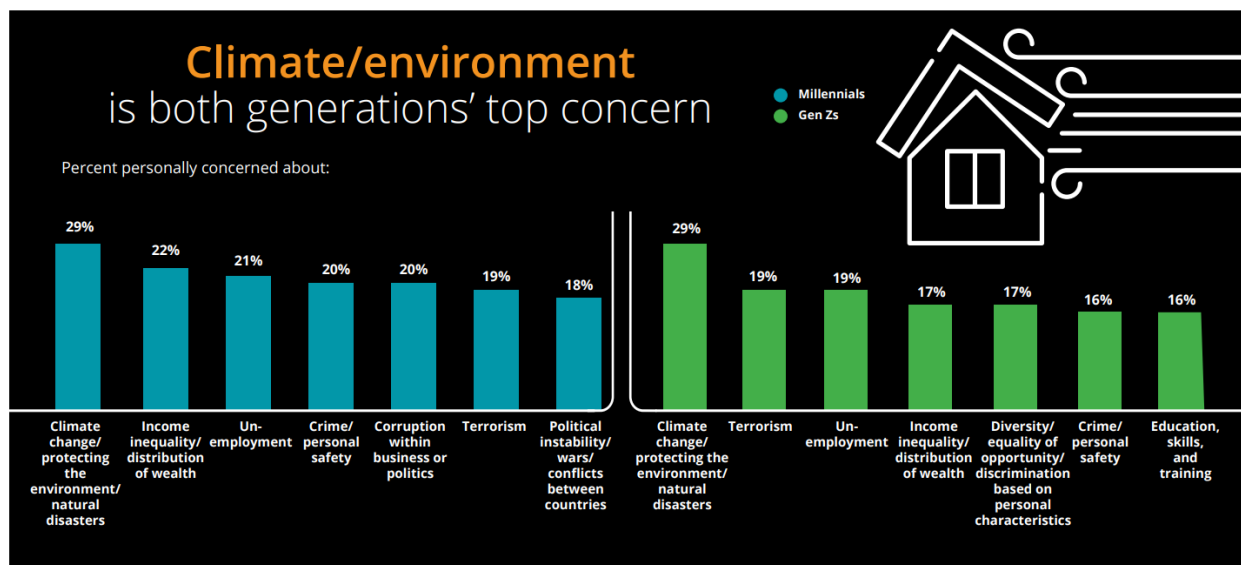
- To divert textiles away from landfill and to give them a new use-by introducing them back into the supply chain.
- To upskill IKEA customers on how to keep textiles in use for longer and away from landfill.
- Through partnerships with relevant stakeholders such as the Young Men's Christian Association (YMCA), the appropriate reuse of the textiles can be achieved to support the homeless in the local community.
- To test and eventually scale up this pilot take-back scheme..

In the UK and Ireland, they already take back numerous product lines including beds, mattresses, sofas and appliances.

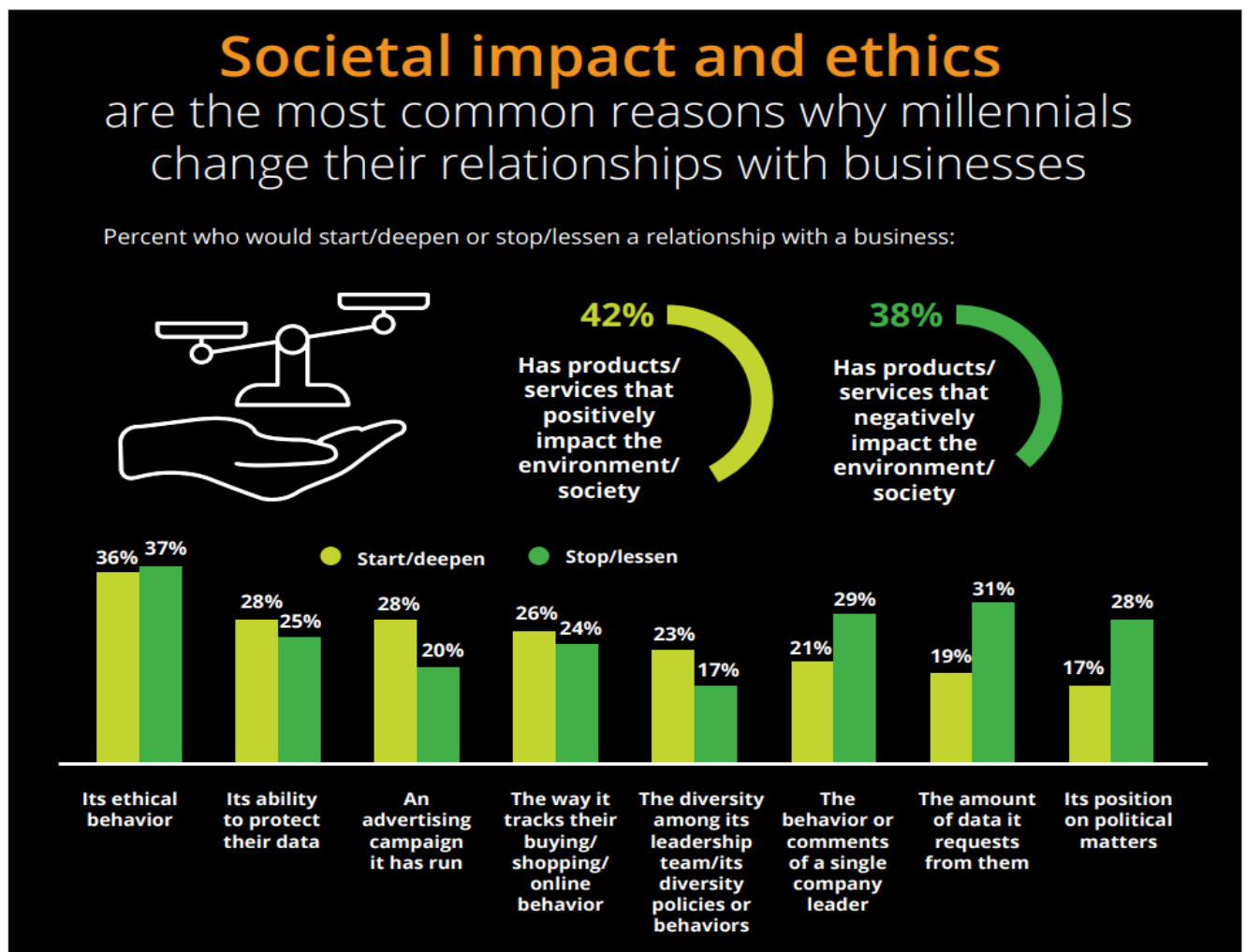
### Clothing, footwear & accessories

The fashion industry has a bad reputation for their unsustainable practices in relation to its social (long hours and poor working conditions), economical (low wages) and environmental impacts (UNEP, 2018). The fashion industry accounts for 20% of global wastewater and is responsible for 10% of the world's carbon emissions (UNEP, 2018). Consumers are also pushing fashion brands to think about the way they do business because consumers say they are willing to spend more on a sustainable brand. Global trends according to Nielson suggest that 66% of consumers will choose to pay a premium for sustainability (KPMG, 2018:16) – particularly Millennials (73%) – those born between 1983 and 1994 – are willing to pay more (KPMG, 2018:16). Another study conducted by Deloitte (2019) that surveyed 13 416 Millennials across 42 countries globally, including South Africa as well as 3 009 Gen Z respondents – those born between 1995 and 2002 – from 10 countries across North America, Europe, Asia and Australia (Deloitte, 2019:4). Key results from the Deloitte Global Millennial Survey 2019 that have a bearing on green retail include:

- As depicted in the figure below, 29% of both Millennials and Gen Z are concerned with climate change, natural disasters and protecting the environment (Deloitte, 2019:6). This was the top area of concern for both target groups.



- The survey results suggest that Millennials believe businesses still have much to do to align with their values and priorities. For example, 27% of Millennials believe that business should protect and or improve the environment whereas only 12% of Millennials actually believe that this is what business is doing (Deloitte, 2019:11).
- As consumers, 42% of Millennials are willing to start or deepen their relationship with a business whose products/services have a positive environmental/societal impact (Deloitte, 2019:19). Whereas, 38% of Millennials said they would stop or lessen their relationship with a business whose products/services have a negative impact on the environment/society (Deloitte, 2019:19). Other reasons why Millennials change their relationship with businesses are shown below.



**Sweden.** H&M Group, like several other retailers, is a signatory of the New Plastics Economy Global Commitment in which they will work towards becoming a circular business from sourcing

to production to the type of packaging used and even the physical retail stores and offices (González, 2019; H&M, 2018:35). H&M's packaging strategy set targets to achieve their goal of being circular; they have a target for 2025 to only use packaging that is recyclable, reusable or compostable and will reuse or recycle all their own packaging waste. Furthermore, they have set a target that by 2030 they will only use materials that have been sourced sustainably or are 100% recycled. The sustainability report for 2018 says that thus far, 57% of materials used to make H&M are either 100% recycled or have been sourced sustainably (H&M, 2018:31). Additionally, H&M has joined the Pack4Good campaign launched by Canopy, which aims to constrain the demand for packaging to reduce the amount of deforestation that feeds the packaging industry which is about 3 billion trees (Canopy, 2019). Participation in this initiative also involves various packaging commitments in line with circularity. In 2013, H&M started collecting old/unwanted clothes from consumers and for 2018, 20 649 tonnes of clothing were collected to be reused and recycled (H&M, 2018:31). The table below shows the full list of key performance indicators (KPIs) set by H&M in order to improve the negative impact of its production activities (H&M, 2018:31):

KPI	2017	2018	Goal
% of recycled or other sustainably sourced materials of total material use (commercial goods)	35%	57% ↑	100% by 2030 at the latest
% of recycled or other sustainably sourced cotton (certified organic, recycled or Better Cotton)	59%	95% ↑	100% by 2020
Tonnes of garments collected through garment collecting initiative	17,771t	20,649t ↑	25,000t per year by 2020
% of stores with recycling systems for main types of store waste	64%	63% ↓	100%
% of facilities in own operations with water-efficient equipment	51%	64% ↑	100% by 2020
% supplier factories in compliance with ZDHC wastewater standard for conventional parameters*	84%	87% ↑	100%
% renewable electricity in own operations	95%**	96% ↑	100%
% change in CO2 emissions from own operations (scope 1+2) compared with previous year	-21%	-11% ↑	Climate positive by 2040
% change in electricity intensity (kwh/sqm per opening hour compared with 2017)	-2.7%	-8.2% ↑	-25% by 2030



**Tonle.** Some fashion brands are responding to the call for green fashion with a complete mind shift. An example of this is Tonle. Tonle, now a global retailer, is a fashion house that was established in Cambodia with the aim of creating fashion that is affordable, sustainable and ethical (Tonle, 2019). The manufacturing process is a 100% zero-waste model, starting with the use of material waste from larger clothing manufacturers, the use of handmade techniques that require no machinery or electricity, and the use of non-toxic dyes (Tonle, 2019). The zero-waste model is also demonstrated in their packaging practices in their retail and online stores. For instance, clothing and accessories are shipped in packaging that is made exclusively from recycled materials (Tonle, 2019). Additionally, for wholesale, clothing is not packed in individual plastic packaging; instead, it is packaged in recycled packaging unless individual plastic packaging has been specifically requested (Tonle, 2019). Lastly, even in the Tonle workshop, fabrics are packed in tote bags made from rice sacks (Tonle, 2019).



## APPENDIX 6. GREEN RETAIL PRACTICES IN SOUTH AFRICA

**Pick n Pay.** Pick n Pay is working towards three goals by 2020 which are to reduce 20% of energy consumption, reduce food waste by 20% and to create 20 new jobs for every working day by 2020 (Pick n Pay, 2017:24). From a strategic viewpoint, Pick n Pay has identified seven KPIs that they are using to measure their efforts to be more environmentally sustainable. These are to “decrease carbon footprint”; “reduce energy intensity”; “reduce levels of food waste”; “reduce the amount of waste sent to landfill”; “promote sales of reusable bags”; “improve water intensity” and to implement “climate friendly refrigeration systems” (Pick n Pay, 2017:19). The retailer is targeting food waste and food loss through its partnership with FoodForward SA who distributes donated food to those who are in need. In the 2017 financial year, Pick n Pay donated R96 million worth of food to FoodForward SA (Pick n Pay, 2017:30-31). In-store strategies to reduce the amount of food loss and food waste are to:

- Improve the accuracy of demand forecasting,
- Reduce the price of goods in order to clear them from the shelves before their sell-by date,
- Improve in-store product layout, and
- Increased focus on maintenance of the cold chain.

Pick n Pay has a number of plans for the future to reduce their plastic waste and use waste as a resource. Currently, a few of the retailer’s store brand items have 25% recycled material in their packaging such as cleaning product containers, their soft drink bottles as well as the plastic punnets used to package fruits and vegetables (Pick n Pay, 2018:67). By 2025, the retailer aims for all store-brand packaging to be 100% reusable or recyclable (Supermarket & Retailer, 2020). Pick n Pay has also introduced package-free zones in several of their stores for fruits and vegetables as well as nude walls in an effort to reduce packaging. A nude wall is a zone in a grocery store that does not have plastic packaging (Fast Moving, 2019). Nude walls are currently being implemented in fresh produce sections. However, the concept of a nude wall has applications throughout the grocery store (Fast Moving, 2019). The retailer offers free paper bags and retails a reusable netted alternative to plastic bags (Broll, 2019:7). In other cases, Pick n Pay has removed the labels on fresh produce such as butternut in favour of laser-etch labelling (Broll, 2019:7). The retailer also supports an organisation called EcoBrick Exchange, which facilitates the building of preschools in areas of need by incorporating waste plastic and 2 litre plastic bottles which act as insulation for the buildings (Broll, 2019:7). In 2017, Pick n Pay diverted 48.4% of

their store retail waste through recycling or reuse (Pick n Pay, 2017:23). The retailer reported that 54.3% of their own waste was diverted from landfill in 2018 and 53.5% in 2019 (Pick n Pay, 2019:22,24).

In an attempt to introduce circular economy principles with Pick n Pay's organic waste streams, the retailer set up a pilot project in the Cape Town township of Philippi (Pick n Pay, 2017:20). The retailer has partnered with the City of Cape Town, IDC, Don't Waste and Waste to Food on this initiative which converts organic waste into vermicompost (Pick n Pay, 2017:25). The pilot project aims include addressing food insecurity, skills shortages, organic waste produced by Pick n Pay stores as well as water shortages (Pick n Pay, 2017:20). According to Business Tech (2018), Pick n Pay has started to produce and sell compost made from its own food waste.

**The Refillery.** Zero waste stores are growing significantly in European markets. For example, according to Believe.Earth (n.d.), 28 zero waste stores were opened in Germany in 2016 compared to nine in the previous year. However, the concept is also gaining an audience in the South African market. The Refillery is one such store and it offers household cleaning products, cereals, grains, rice, tea and coffee, various seeds, herbs and spices as well as lifestyle products such as reusable coffee mugs, bamboo toothbrushes and biodegradable kitchen cloths (The Refillery, 2018). Averda (2019) suggests that stores with zero packaging is one of the best ways to reduce the large volumes of waste generated by packaging because recycling cannot counter the rate of plastic usage.

**Woolworths.** Woolworths Holding has joined the global fight against plastics pollution and waste by becoming the first African business to sign the New Plastics Economy Global Commitment and is currently the only African business to sign the agreement (BizCommunity, 2019a). Woolworths has set a target to make sure that all their store brand packaging is either recyclable or reusable by 2022 (WHL, 2018:79, 81). Woolworths is actively involved in trying to reduce waste throughout their business and testing solutions that will improve customer recycling rates. Following the success of the test carried out in one of the Woolworths stores in Cape Town, the retailer is rolling out plastic shopping bag free stores in three other stores in Johannesburg, Pretoria and Durban (BizCommunity, 2019a). The retailer's goal is to remove all single-use plastics from its stores by 2020 (WHL, 2018:79). Furthermore, Woolworths is rolling out its locally made recyclable and reusable shopping bags which are made from recycled plastic bottles (BizCommunity, 2019a). Within the SA market, Woolworths has achieved a number of firsts, including being the first retailer to (WHL, 2018:82):

- Develop and produce a plant-based plastic bottle for milk,
- Start recycling clothes hangers which has amounted to 360 million recovered hangers to date through a partnership with Hangerman. According to the 2019 Good Business Journey Report, 14.8 million hangers were recycled in that reporting year which is an increase from the previous reporting year which indicated that 13.8 million hangers were recycled (WHL, 2019:86),
- Eliminate plastic microbeads from their store brand products,
- Launch recycled PET in food packaging, and
- Eliminate single-use packaging for distribution from their distribution centres (DCs).

Through its recycling initiatives, Woolworths aims to ignite entrepreneurship and support and empower small businesses. For example, Isikhwama supplies Woolworths with reusable bags and has done so for more than a decade (BizCommunity, 2019a). Secondly, Woolworths donates clothing to The Clothing Bank which runs skills programmes for women to start their own businesses (WHL, 2018:84). The retailer contributed R51.1 million worth of clothing in 2018, or 696 831 items of clothing, compared to 600 000 in 2017 (WHL, 2018:84).

In order to divert food waste away from landfill, Woolworths donated more R570 million worth of surplus food to communities in need through NPO partnerships (WHL, 2018:39). Furthermore, Woolworths is encouraging its suppliers to take account of their environmental impact in terms of energy and water usage, waste management and other social indicators in what the retailer is calling a Green Factory assessment (WHL, 2018:68).

**Spar.** As part of their initiatives to tackle packaging waste, Spar supermarkets rolled out an in-store campaign encouraging shoppers to lower their use of single-use plastics by choosing Spar's paper and canvas bag alternatives or use their own shopping bags (Spar, 2018b:2). Another initiative that Spar is testing in ten Johannesburg stores to encourage consumer recycling is the reverse vending machine (Spar, 2018b:10). The functionality of the reverse vending machines includes sorting packaging according to classification, weight and volume, and can provide data about the origin of the waste. Internally, Spar is working across their entire supply chain to reduce waste and the negative environmental impact of their production and retail activities (Spar, 2018b:10). For instance, their recycling initiatives are targeted at the retailer's own brand packaging at its DCs, which all have recycling programmes. Some retailers are also included in distribution channel recycling programmes. The cardboard packaging waste generated at the DCs

and by some retailers is also used by Spar's packaging suppliers to produce new packaging (Spar, 2018b:8).

Spar's global head office in the Netherlands initiated the development of the rural hub business model which began in Limpopo in 2016 with five small-scale farmers (Spar, 2018a:1). The rural hub business model addresses socio-economic issues such as food insecurity, improving livelihoods of people living in rural communities and environmental impacts of production. One of the major challenges in rural communities is providing nutritious food at a reasonable price (Spar, 2018a:6). Therefore, the rural business hubs aim to improve the accessibility of fresh produce and dairy which tend to not be consumed as much as other food groups in rural communities (Spar, 2018a:6). Expanding Spar's supply chains by further decentralisation to include rural farmers who would ordinarily be excluded improves incomes and creates more jobs (Spar, 2018a:6) and it also means that Spar can achieve affordability of their fresh produce for consumers in rural areas who have less disposable income (Spar, 2018a:8). Finally, the introduction of rural business hubs results in shorter distances being travelled from farm to store which means lower carbon emissions, fuel consumption and costs which in turn should lower the purchase price for consumers (Spar, 2018a:8).

**Shoprite Holdings.** Shoprite Holdings (2018), much like other major retailers in South Africa, are working collaboratively with suppliers along the entire supply chain to improve efficiencies and reduce waste. The group's strategy for plastic packaging waste is a holistic approach focused on five key areas (Shoprite Holdings, 2019:56):

1. Reuse – reduce waste by reusing packaging in the production of new product and product packaging. This pillar also encourages the use of compostable packaging as much as possible.
2. Recycle – improve recycling by increasing recovery rates and creating jobs in the process. All packaging that can be recycled is recycled through a centralised waste management system.
3. Design and manufacture – ensure that all packaging is either reusable, recyclable or compostable and reduce plastic usage by using lightweight packaging.
4. Retail – at the store level, increase the amount of recycled materials used in packaging.
5. Consumer – improve consumer education on recycling and other ways that consumers can reduce plastic waste.

The retail group created numerous jobs and diverted 103 tonnes of waste from landfill by using post-consumer waste to produce new bottles for their store-brand carbonated soft drinks (Shoprite Holdings, 2018:47). The bottles are comprised of 25% recycled post-consumer waste (Shoprite Holdings, 2018:47). For plastic in particular, the retail group recycled 3 995 tonnes of plastic waste and diverted 7 097 tonnes of plastic waste from landfill (Shoprite Holdings, 2019:55). Shoprite Holdings was also the first retailer to produce plastic bags made entirely of recycled plastic in 2013 and diverted 3 000 tonnes of plastic from landfill through the sale of 350 million recycled plastic bags according to the 2018 Sustainability Report, whereas 645 million bags were sold the following year (Shoprite Holdings, 2018:48; Shoprite Holdings, 2019:55). The retail group was also the first retailer in SA to introduce compostable packaging which is now used for a variety of fruits and vegetables (Shoprite Holdings, 2019:56).

Now the retail group is introducing a 'planet' bag into its Shoprite and Checkers stores (Business Tech, 2018). The planet bags are 100% recyclable and are aimed at changing consumer behaviours by rewarding customers for using these bags. Customers have 50 cents deducted from their purchases every time they reuse the planet bag (Business Tech, 2018). According to the 2019 Sustainability Report, 855 000 'planet' bags were sold, and shoppers have redeemed over R200 000 through this initiative (Shoprite Holdings, 2019:55-56).

Recyclables such as white paper, plastic and cardboard is sorted at Shoprite Holdings stores, transported to and sold through the DCs. According the 2018 Sustainability Report, 26 859 tonnes of white paper and cardboard and 3 225 tonnes of plastic was recycled by the retail group (Shoprite Holdings, 2018:48). The following year Shoprite Group recycled 33 658 tonnes of cardboard (Shoprite Holdings, 2019:55). In terms of reuse, Shoprite Holdings encourage behaviour changes from its suppliers by replacing wooden pallets and other disposable packaging with plastic pallets which are reusable and returnable (Shoprite Holding, 2018:48). Furthermore, a pilot project which aimed at the reuse of cardboard packaging resulted in over 1 050 tonnes of cardboard being reused (Shoprite Holdings, 2018:48). The 2019 Sustainability Report suggests that this number rose to 2 781 tonnes (Shoprite Holdings, 2018:55).

Like other major food retailers in SA, Shoprite Holdings donates surplus food from its DCs and stores to various NPOs (Shoprite Holdings, 2019). Through these partnerships, the retail group was able to donate food to over 300 community-based organisations (Shoprite Holdings, 2019:56).

**Food Lover's Market.** Food Lover's Market offers its customers paper bags and recyclable boxes as an alternative to their plastic bags (Food Lover's Market, 2018). Additionally, according to their new policy, the retailer only gives out paper straws when a customer asks for one (Food Lover's Market, 2018).

Food Lover's Market has been in partnership with FoodForward SA since 2009 and makes a monthly donation of R50 000 worth of fruit and vegetables as well as donating surplus fruit and vegetables to Food Forward SA (Food Forward SA, 2017:15). Food Lover's Market is also currently the only retailer in SA that purchases its fruit and vegetables directly from farmers which limits food waste because of a shorter supply chain and have for many years provided unpackaged fresh produce to shoppers (Food Lover's Market, 2019). Additionally, the retailer allows shoppers to bring their own containers for rice, chickpeas, lentils, oats, muesli and flour, as well as offering olive oil, water and milk on tap in some selected stores which minimises the use of packaging by the retailer (Food Lover's Market, 2019).

**Massmart.** Massmart works with Gift of the Givers and FoodForward SA to ensure that their surplus food goes towards reducing food insecurity (Massmart, 2018:68). In 2018, Massmart donated 200 tonnes of food across major townships in Gauteng, KwaZulu-Natal and Western Cape (Massmart, 2018:68). Massmart (2018:72) reported that they divert approximately 15 354 tonnes of waste away from landfill per annum through initiatives such as:

- Increasing recycling facilities for paper, plastic and cardboard,
- Promoting programmes that convert waste to energy and waste to compost,
- Improving the recyclability of their store brand packaging for products such as mBrand household cleaning products, and
- Encouraging their suppliers to adopt more environmental manufacturing and packaging practices

**Mr Price Group.** Mr Price Group focuses on the environmental impact of both upstream activities such as manufacturing and dyeing as well as downstream activities, which occur once the products have been consumed (Mr Price Group, 2019:94). The retail group initiated a paperless administration system in order to reduce the amount of paper the retail group uses. At the end of the 2018/19 financial year, the group saved 2 687km of paper and 7 017km since the initiative started (Mr Price Group, 2019:15,95). Other focus areas for Mr Price Group are to reduce single-use plastics and to use more recycled materials in their products and packaging as well as to

reduce their textile post-consumer waste. Some achievements in 2019 was a reduction of 24 tonnes of plastic packaging which was removed from duvets and 1 561 tonnes of recycled plastic was used in the inners of cushion (Mr Price Group, 2019:83-84).

**Pepkor.** Other retail groups such as Pepkor state that their biggest impact on the environment is the amount of electricity they use and are making changes to business operations to limit their contribution to climate change (Pepkor, 2018:13). Green retail initiatives that address plastic and paper packaging waste include the roll out of plastic bags made from recycled materials and the reuse of hangers in store as well as the group recycling its paper, cartons (reuse and recycle) and packaging materials in DCs and in store (Pepkor, 2018:13-14).



## APPENDIX 7: ELECTRONIC QUESTIONNAIRE

The aim of this survey is to gather information for the development of recommendations on the reduction, reuse and recycling of food and packaging waste in the retail sector.

1. Are you the person responsible for waste management within your company?
  - a. Yes
  - b. No
2. If yes, what is your position within the company?
  - a. Owner
  - b. Chief Executive Officer (CEO)
  - c. Chief Operating Officer (COO)
  - d. Sustainability Manager
  - e. Manager
  - f. Other
3. Please select the relevant retail items that your company sells:
  - a. Food and beverages (i.e. fresh produce, packaged food goods, beverages)
  - b. Prepared food (i.e. cooked in store)
  - c. Clothing and footwear
  - d. Personal care (i.e. toiletries, beauty products, etc)
  - e. Household goods (i.e. cleaning products)
  - f. Household accessories (i.e. cookware, crockery, etc)
  - g. Electronic goods
  - h. Hardware goods
  - i. Other (please specify)
4. Please select the size of your company (if you are a chain store please answer for the whole chain, not your individual store).
  - a. Less than 50 employees



- b. Between 50 and 200 employees
  - c. More than 200 employees
- 5. Who manages your company's paper and plastic waste?
  - a. Retail centre
  - b. Own appointed waste management company
  - c. Own waste management
  - d. Municipal waste management
  - e. Other
- 6. Who manages your company's food waste?
  - a. Retail centre
  - b. Own appointed waste management company
  - c. Own waste management
  - d. Municipal waste management
  - e. Other
- 7. If you have directly appointed a waste management company, select which one:
  - a. Don't Waste
  - b. EnviroServ
  - c. Averda
  - d. WastePlan
  - e. Interwaste
  - f. Other (please specify)
- 8. Are you implementing reduction initiatives with your waste?
  - a. Yes
  - b. No
  - c. I don't know

9. If yes, what initiatives are being implemented? Please explain in as much detail as possible.
10. Are you implementing education programmes and/or awareness campaigns?
  - a. Yes
  - b. No
  - c. I don't know
11. If yes, what education programmes and/or awareness campaigns are you actively involved in?
12. Are you implementing green building initiatives (e.g. renewable energy, water consumption reduction)
  - a. Yes
  - b. No
  - c. I don't know
13. If yes, what green building initiatives are you implementing?
14. What are the top 2 reasons that you decided to implement these green initiatives?
  - a. Conscious consumer pressure
  - b. Supplier and/or producer pressure
  - c. Legislation
  - d. Global head office directive
  - e. Industry pressure
  - f. Other
15. Do you have waste reduction targets?
  - a. Yes
  - b. No
  - c. I don't know
16. If yes, which of the following do you have targets for?
  - a. Food

- b. Plastic
  - c. Paper
  - d. Electricity
  - e. Water
  - f. Greenhouse gases/ carbon footprint
  - g. Other
17. Who sets your targets?
- a. Global head office
  - b. National head office
  - c. Regional head office
  - d. Individual stores
  - e. Other
18. What are the challenges that you face in implementing green initiatives?
- a. Consumer preferences (unwilling to shift to greener practices)
  - b. Supplier preferences (unwilling to shift to greener practices)
  - c. Insufficient money for initiatives
  - d. Low priority for the company
  - e. Insufficient government support and incentives
  - f. Obstructive legislation
  - g. Availability of waste reduction options / alternatives
  - h. Other
19. Please provide some recommendations that you feel retailers can adopt in implementing green initiatives.
20. What support is required from government and/or industry associations in implementing these recommendations?
21. Please provide your details; this is voluntary and will be used for back checks if necessary. Your details will not be shared with any third party or used in the research

report. If you choose not to complete this page, your previous responses will still be available for inclusion in our research.

- a. Name of company
- b. Your name
- c. Your email address

## APPENDIX 8: INTERVIEW GUIDING QUESTIONS

### Industry Association Questions

1. Do you have any retailers which are members of your association?
2. Please provide us with a broad overview of the state of waste management within your industry, specifically as it relates to industry retailers. How does this compare with 5 years ago?
3. Would you be able to share any figures with us on volumes of waste being produced by the retail sector? Do you have any reports you could share with us?
4. Please describe the role that the industry association plays in relation to influencing and/or guiding waste management initiatives of retailers? What are your largest, most effective initiatives?
5. What policy instruments are in place that guide waste management within your industry?
6. Are you aware of global, local and/or retailer specific waste management targets being implemented in South Africa? If so, what are they? Do you have any targets?
7. What are the challenges that your industry retailers face in waste management?
8. Do you have any initiatives in the pipeline that aim to address these challenges?
9. Please share some examples of South African retailers that are driving initiatives within waste management. Can you provide us with the contact details of any retailers?
10. Please share examples of global retail initiatives within waste management.
11. How do waste management practices impact people's livelihoods and the South African economy?
12. What recommendations do you have for retailers with regard to waste management?
13. Would you be willing to share the contact details of your members for our questionnaire?

## Waste Management Company Questions

1. Please briefly explain the current role of waste management companies in relation to the management of waste for retailers.
2. Please describe the role that waste management companies play in relation to influencing and/or guiding waste reduction initiatives of retailers?
3. What policy instruments are in place that guide waste management practices?
4. Are you aware of global, local and/or retailer specific waste management targets being implemented in South Africa? If so, what are they? Do you have any targets?
5. To what extent are waste management practices being implemented and received now compared with 5 years ago?
6. Would you be able to share any figures with us on volumes of waste being produced by the retail sector? Do you have any reports you could share with us?
7. What are the challenges that you face in waste management, specifically in relation to your retail clients?
8. Do you have any initiatives in the pipeline that aim to address these challenges?
9. Please share some examples of South African retailers that are driving initiatives within waste management. Can you provide us with the contact details of any retailers?
10. Please share examples of global retail initiatives within waste management.
11. How do waste management practices impact people's livelihoods and the South African economy?
12. What recommendations do you have for retailers with regard to waste management?

## APPENDIX 9: ETHICAL CLEARANCE



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Office of the Chairperson Research Ethics Committee	Faculty: <b>BUSINESS AND MANAGEMENT SCIENCES</b>
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At a meeting of the Faculty's Research Ethics Committee on **11 June 2019**, Ethics **Approval** was granted to **Prof Roger Mason and Lumec (Pty) Ltd** for research activities at Cape Peninsula University of Technology.

Title of dissertation/thesis/project:	WASTAGE: ITS EFFECT ON GREEN RETAIL AND ITS ROLE IN SOCIO-ECONOMIC IMPROVEMENT AND FOOD SECURITY  Lead Researcher: Prof R Mason/Lumec (Pty) Ltd
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Comments:

**Decision: Approved**

 Signed: Chairperson: Research Ethics Committee	12 June 2019 Date
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## APPENDIX 10: TURNITIN ORIGINALITY REPORT

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