

Local Government Association

war on waste

food packaging study: wave 1



War on Waste

Report

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Prepared for:

Local Government Association

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Executive Summary

Each year the UK generates about 30 million tonnes of waste from households¹, most of which ends up in landfill. Britain dumps more household waste into landfill than most other countries in the European Union (around three-quarters of its municipal waste goes to landfill; only Portugal and Greece put more there²). The objective of this research is to inform the Local Government Association's 'War on Waste' campaign, which seeks to address the amount of rubbish produced and the way in which it is thrown away. This study will monitor food packaging levels in terms of amount of packaging (including in relation to volume of food) and composition of that packaging (for example, whether the packaging is recyclable).

A range of common food items (29 items), representing a regular shopping basket were purchased from eight retailers (six supermarkets - ASDA, Lidl, Marks and Spencer, Morrisons, Sainsbury's and Tesco - a local high street and a large market). Analysis involved recording the total weight of the product and recording the total weight of the packaging. The component parts of the packaging were weighed separately to measure the proportion of packaging that was recyclable or rubbish. An estimate of the volume of the food in relation to the packaging was also provided, to consider cases of excessive packaging. Photographs of the shopping baskets were taken before analysis and of the piles of waste created.

- The total weight of packaging per basket ranged from 684.5 grams to 799.5 grams, with an average weight of 748.5 grams.
- The proportion of waste that was recyclable ranged from 60% to 79%.
- There were some items on the shopping list that appeared to be somewhat over-packaged, such as shrink-wrapping on peppers and broccoli, or excessive layers of packaging, or packaging that was much larger than the contents of the product and had low volume measures, for example, cornflakes, meat, tomatoes and crisps.
- Often packaging of fruit and vegetables comprised plastic bags although one retailer did provide paper bags. This is an approach that could be taken by more retailers to improve the proportion of their waste that is recyclable.

¹ 'Key Facts about Waste and Recycling: Estimated Total Annual Waste Arisings, By Sector 2004' from Defra website on 31 August 2007, www.defra.gov.uk/environment/statistics/waste/kf/wrkf02.htm

² 'Key Facts about Waste and Recycling: Municipal Waste Management in the European Union 2003' from Defra website on 31 August 2007, www.defra.gov.uk/environment/statistics/waste/kf/wrkf08.htm

- The majority of packaging on the meat products was rubbish.
- The packaging on a fresh pizza varied between retailers from a simple cardboard box or a cardboard base and shrink-wrapping - both good approaches - to a pizza with a plastic or polystyrene base, shrink-wrapped and contained in a box. While the cardboard box is recyclable, the number of layers in these cases was perhaps excessive.
- The plastic tubes provide sufficient packaging for the cookies but in some cases a tray was also part of the packaging, providing further waste in an additional layer of packaging that could be considered unnecessary. Retailers could also focus on reducing the size of the packaging in relation to the volume of the product, to reduce the quantities of waste produced.
- The market set a good example by providing a loaf of bread in a paper bag, whilst the seven other retailers had wrapped the bread in a plastic film or plastic bag.
- The baked beans, jam and milk came in the same form of packaging from all retailers: a can for the beans, a glass jar for the jam and a plastic bottle for the milk. Apart from the tops on the jar and milk bottle, the packaging for these products were all recyclable.

Introduction

1.1 Research background

Each year the UK generates about 30 million tonnes of waste from households³, most of which ends up in landfill. Britain dumps more household waste into landfill than most other countries in the European Union (around three-quarters of its municipal waste goes to landfill; only Portugal and Greece put more there⁴). By reducing landfill and increasing the amount of waste that is recycled, composted or has energy recovered in some way, there is considerable scope for reducing greenhouse gas emissions from the waste we produce⁵. The Defra Waste Strategy for England 2007 proposes a vision of shared responsibility between producers (to use more recycled materials and to design less wasteful products), retailers (to reduce packaging and to source and market products that are less wasteful) consumers (to generate less waste and separate products for recycling) local authorities (to provide recycling facilities for their residents) and the waste management industry (to invest in facilities to recycle and recover waste). One of the two sectors identified in the Waste Strategy as a priority for further action was the food and retail sector. This report focuses on waste from the food and retail sector and, in particular, food packaging.

The Waste Framework Directive (WFD)⁵ currently defines waste as “any substance or object which the holder discards or intends or is required to discard”. Waste from packaging of household goods is estimated to be around 5 million tonnes per annum⁶ and is predicted to continue to rise. Although some reduction in the weight of individual items of packaging has been achieved since 1998 through the implementation of a Packaging Directive, there is still a problem of excessive packaging around many products. Despite improvements in levels of recovery and

³ ‘Key Facts about Waste and Recycling: Estimated Total Annual Waste Arisings, By Sector 2004’ from Defra website on 31 August 2007, www.defra.gov.uk/environment/statistics/waste/kf/wrkf02.htm

⁴ ‘Key Facts about Waste and Recycling: Municipal Waste Management in the European Union 2003’ from Defra website on 31 August 2007, www.defra.gov.uk/environment/statistics/waste/kf/wrkf08.htm

⁵ Defra Waste Strategy for England 2007 from website on 31 August 2007, <http://www.defra.gov.uk/environment/waste/strategy/strategy07/index.htm>

⁶ ‘Key Facts about Waste and Recycling: Recycling and Recovery from Packaging 1998-2005, England’ from Defra website on 31 August 2007, www.defra.gov.uk/environment/statistics/waste/kf/wrkf17.htm

recycling of packaging waste in recent years there is still a significant amount (around 40 per cent⁷) of packaging waste that is not recycled or recovered.

Packaging makes up almost one fifth of all household waste and it is estimated that around five million tonnes of annual household rubbish comes from packaging⁸. Whilst packaging is often in place to contain and protect goods from damage, to prolong shelf-life, offer convenience or easy use, allow efficient transport distribution, inform the consumer and help to promote goods, it also has the potential for creating large amounts of waste.

Research by the Waste and Resources Action Programme (WRAP) suggests that consumers are becoming more aware of the packaging around the products they buy but at the same time they are attracted by luxurious packaging and often choose packaged goods over loose.⁹ Although domestic recycling rates are on the increase, from 5.8 million tonnes in 2004/05 to 6.8 million tonnes in 2005/06¹⁰ even recyclable packaging still needs processing and in an ideal situation, there would be less packaging to recycle or dispose of in the first instance.

As part of the implementation of the Waste Strategy for England 2007, the Government intends to amend producer responsibility regulations in order to minimise packaging, including setting optimal packaging standards for a product class. A number of retailers have signed up to the Courtaid Commitment to reduce household food and packaging waste, informing customers about packaging on their labels (e.g. whether or not materials can be recycled or composted, or whether they are biodegradable).

⁷ 'Key Facts about Waste and Recycling: Recycling and Recovery from Packaging 1998-2005, England' from Defra website on 31 August 2007, www.defra.gov.uk/environment/statistics/waste/kf/wrkf17.htm

⁸ 'Tougher laws and serious fines are needed to crackdown on excessive packaging – Local Government Association' from LGA website on 31 August 2007, <http://www.lga.gov.uk/PressRelease.asp?id=-A7842240>

⁹ 'Consumer attitudes to packaging' from The Industry Council for Packaging and the Environment website on 31 August 2007, <http://www.incpen.org/pages/userdata/incp/Consumerattitudestopackagingsurvey.pdf>

¹⁰ 'Municipal Waste Management Statistics' from Defra website on 31 August 2007, <http://www.defra.gov.uk/news/2006/061116a.htm>

1.2 Research objectives and method

The objective of this research project is to inform the Local Government Association's 'War on Waste' campaign, which seeks to address the amount of rubbish produced and the way in which it is thrown away. This study will monitor food packaging levels in terms of amount of packaging (including in relation to volume of food¹¹) and composition of that packaging (for example, whether the packaging is recyclable).

A range of common food items (29 items), representing a regular shopping basket were purchased from eight retailers (six supermarkets - ASDA, Lidl, Marks and Spencer, Morrisons, Sainsbury's and Tesco - a local high street and a large market). These were purchased by four interviewers and couriered to the research team overnight for analysis the following day.

Analysis involved recording the total weight of the product and the total weight of the packaging. The component parts of the packaging were weighed separately to measure the proportion of packaging that was recyclable or rubbish¹².

For the purposes of this study packaging was defined as either RECYCLABLE i.e. any material for which recycling facilities are commonly available (e.g. glass, tins, paper, card and plastic bottles¹³) or RUBBISH i.e. would have to be thrown into the household bin and would end up in landfill. All card was considered to be potentially recyclable, although in practice if it is contaminated with food it would become rubbish.

¹¹ A study by Staffordshire County Council Trading Standards found that many boxes of cereal were only 40% - 50% full, for example.

¹² Salter electronic kitchen scales (model 1022) with a maximum weight of 3 kilograms measured in 1 gram intervals, and Tanita digital scales (model 1210N) with a range up to 20 grams in 0.002 gram intervals were used for analysis.

¹³ Plastic bottles were considered to be widely recyclable, since *WRAP's Annual Local Authorities Plastics Collection Survey 2007* showed that, of the UK's 471 local authorities, 92% now offer recycling collection facilities for plastic bottles, ranging from one or two bring sites through to comprehensive kerbside coverage. In fact, 54% of all UK homes have kerbside recycling collections that include plastic bottles.

An estimate of the volume of the food in relation to the packaging was also provided to address cases of excessive packaging. Photographs of the shopping baskets were taken before analysis and of the piles of waste created¹⁴.

For consistency interviewers were instructed to purchase all fruit and vegetables loose where possible, and to only buy pre-packaged goods if the item was not otherwise available. For meat products, pre-packaged goods were requested, as not all retailers have delicatessen facilities, so this precaution was taken as a control to ensure a similar packaging type was purchased from each retailer for fair comparison. A recommended weight or quantity for each item was also specified for each item for controlled comparison of packaging weights.

Shoppers were asked to purchase own brand goods where possible, although other brands were acceptable if the item was not otherwise available. If an item from the shopping list was not available in a particular retailer an average score based on results from other retailers was calculated in order to prevent bias to the total weight of packaging for that retailer.

Further details about the project set up and pilot study can be found in the appendix.

1.3 Structure of report

Prior to this introduction is an executive summary of the findings. The main body of the report provides a commentary on the results from each retailer, illustrated by summary tables of the data and photographs taken during analysis. A summary chapter and conclusions and recommendations follow. In charts and tables '-' denotes 0 and '*' denotes a proportion of less than half of one per cent, but more than 0. All weights are shown to the nearest 0.5 grams unless otherwise stated.

¹⁴ The photographs were taken digitally with a Fujifilm S2 Pro camera using natural light. The captured picture resolution was six million pixels creating files of two to three mega-bytes per image.

2 Analysis of ASDA

Picture 1: Shopping basket from ASDA



This photograph shows the products purchased from ASDA. All items on the shopping list were available from ASDA.

2.1 ASDA - Fruit and Vegetables

Table 2.1: ASDA – Fruit and vegetables

ASDA	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Avocados	-	-	-	-	-
Baking potatoes	-	-	-	-	-
Bananas	-	-	-	-	-
Broccoli	-	-	-	-	-
Cherry tomatoes	8	-	-	8	100
Cucumber	1	-	-	1	100
Grapes	4	-	-	4	100
Mushrooms	1	-	-	1	100
Peppers	-	-	-	-	-
Strawberries	33	-	-	33	100

All fruit and vegetable items were available for ASDA at wave 1. Of these five were available loose without any packaging (marked as “-” in the table). The remaining five items were contained in some form of packaging: tomatoes and strawberries were in a plastic tray with a plastic covering, grapes and mushrooms were in plastic bags and the cucumber was shrink-wrapped. The tubs containing the tomatoes and the strawberries were approximately 80-90% full.

2.2 ASDA - Meat and Fish

Table 2.2: ASDA – Meat and fish

ASDA	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pork sausages	2	-	-	2	100
Minced beef	22.5	-	-	22.5	100
Chicken breasts	17	-	-	17	100
Lamb chops	17	-	-	17	100
Fresh salmon	23	-	-	23	100

All of the packaging used for the meat for ASDA was classified as rubbish. The sausages were in a small plastic packet, while the beef, chicken, lamb and salmon were all in plastic trays with a plastic film covering. Whilst the sausages filled the majority of their packaging, the meat trays were approximately 60-80% full.

2.3 ASDA - Dairy

Table 2.3: ASDA – Dairy

ASDA	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Semi skimmed milk	24	22	92	2	8
Sunflower spread	28.5	-	-	28.5	100
Stilton	1	-	-	1	100
Eggs	31	31	100	-	-

The milk was packaged in a plastic bottle with a foil seal and a plastic lid, and recycling facilities are widely available for plastic bottles. The sunflower spread was in a plastic tub; while the cheese was shrink wrapped. Eggs were in a recyclable cardboard carton. All of these items made good use of the packaging space and all were approximately 100% full.

2.4 ASDA - Other Essentials

Table 2.4: ASDA – Other essentials

ASDA	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pizza	55	49	89	6	11
Sugar	6	-	-	6	100
Raisins	7.5	-	-	7.5	100
Multi-pack crisps	10.5	-	-	10.5	100
Choc chip cookies	2	-	-	2	100
Cornflakes	92	85	92	7	8
Loaf white bread	1	-	-	1	100
Baked Beans	79	79	100	-	-
Tea	32.5	30	92	2.5	8
Jam	215.5	207	96	8.5	4

The pizza was shrink-wrapped but had a cardboard base, so the majority of the packaging was therefore recyclable. The sugar and raisins were both in small plastic bags which were approximately 90% full; however the crisps were in foil-lined plastic bags which were only around 50% full, contained in an outer bag which was again approximately only 50% full. The cookies were packaged in a plastic foil-lined tube.

Cornflakes were packaged in a plastic bag inside a cardboard box, meaning 92% of the packaging was recyclable. This was approximately 75-80% full. The loaf of bread was packaged in a plastic wrapper and the tea bags were packaged in a box with a surrounding film wrapper. Baked beans were in a can, whilst the jam was contained in a glass jar, both of which are recyclable (excluding the jam jar lid).

2.5 ASDA Summary

Picture 2: Total waste produced by ASDA



Picture 2 shows the total amount of waste produced by ASDA at wave 1. The total weight of packaging was 714g, of which 70% (503g) was made from recyclable materials. Pictures 3 and 4 show the recyclable items. Picture 5 shows the waste that would end up in the rubbish (although please note that recycling for plastic bottles is now widely available, and for the figures above, the plastic bottle that appears in this picture is calculated as a recyclable product).

Picture 3: Recyclable waste produced by ASDA – paper and card



Picture 4: Recyclable waste produced by ASDA – tins and glass



Picture 5: Rubbish produced by ASDA



3 Analysis of Lidl

Picture 6: Shopping basket from Lidl



This photograph shows the products purchased from Lidl. Strawberries and broccoli were not available at Lidl on the day the shopping was purchased.

3.1 Lidl - Fruit and Vegetables

Table 3.1: Lidl – Fruit and vegetables

LIDL	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Avocadoes	-	-	-	-	-
Baking potatoes	-	-	-	-	-
Bananas	-	-	-	-	-
<i>Broccoli *</i>	<i>0.5</i>	-	-	<i>0.5</i>	<i>100</i>
Cherry tomatoes	13	-	-	13	100
Cucumber	1	-	-	1	100
Grapes	5	-	-	5	100
Mushrooms	27	-	-	27	100
Peppers	5	-	-	5	100
<i>Strawberries *</i>	<i>29</i>	-	-	<i>29</i>	<i>100</i>

** Broccoli and strawberries were not available from Lidl and have been assigned an average value based on figures from other retailers.*

Three items of fruit and vegetables were available loose, without any packaging from Lidl. The cherry tomatoes were in a plastic tub with a plastic lid; this was approximately 80% full by volume. The cucumber was shrink-wrapped. The grapes were contained in a plastic bag that was approximately 50% full. The mushrooms were in a plastic tub with a plastic film covering, the tub was around 75% full. The peppers were in a large plastic wrap that was much bigger than the peppers, which only took up approximately 75% of the volume of the packaging.

3.2 Lidl - Meat and Fish

Table 3.2: Lidl – Meat and fish

LIDL	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pork sausages	4	-	-	4	100
Minced beef	29	-	-	29	100
Chicken breasts	26	-	-	26	100
Lamb chops	45	13	29	32	71
Fresh salmon	21.5	-	-	21.5	100

All of the packaging for the sausages, minced beef, chicken breasts and salmon was categorised as rubbish. The sausages were in a small plastic packet which was approximately 90% full by volume. The minced beef was shrink-wrapped in plastic and contained in a further outer plastic bag which was about 50% full. The chicken breasts were in a plastic tray with a plastic film covering, and this was again approximately 50% full. The salmon was shrink-wrapped in a plastic envelope, which was approximately 80% full by volume. The lamb chops were contained in a plastic tray with a plastic film covering, which was approximately 60% full by volume. This was surrounded by a cardboard sleeve which meant that 29% of the total packaging of this item was recyclable.

3.3 Lidl – Dairy

Table 3.3: Lidl – Dairy

LIDL	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Semi skimmed milk	19	17	89	2	11
Sunflower spread	21	-	-	21	100
Stilton	2	-	-	2	100
Eggs	31	31	100	-	-

The milk was contained in a plastic bottle with a foil top and plastic lid: the bottle is recyclable. The sunflower spread was in a plastic tub. The cheese was shrink-wrapped, and the eggs were contained in a recyclable cardboard box. All of these items were approximately 100% full.

3.4 Lidl - Other Essentials

Table 3.4: Lidl – Other essentials

LIDL	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pizza	22	-	-	22	100
Sugar	8	8	100	-	-
Raisins	3.5	-	-	3.5	100
Multi-pack crisps	24	-	-	24	100
Choc chip cookies	11	-	-	11	100
Cornflakes	100	90	90	10	10
Loaf white bread	6	-	-	6	100
Baked Beans	60	60	100	-	-
Tea	28	26	93	2	7
Jam	258	244	95	14	5

The pizza was shrink-wrapped and had a polystyrene base so 100% of the packaging was rubbish. The sugar was contained in a paper bag, so this packaging was recyclable; the sugar bag was approximately 90% full. The raisins were packed in a plastic bag that was 95% full by volume. The multi pack of crisps however were approximately 50% full for the plastic, foil lined individual bags and 50% full in relation to the outer packaging, which was also plastic. The cookies were in a plastic tray inside a foil lined plastic tube, which was approximately 60% full.

The cornflakes packaging comprised an outer recyclable cardboard box and a plastic bag (rubbish) inside. The bag was approximately 60% full by volume. The white bread was packaged in a plastic bag, and the tea was in a recyclable cardboard box, wrapped with an outer layer of plastic film. The baked beans were in a can, and the jam was in a glass jar, both of which are recyclable.

3.5 Lidl Summary

Picture 7: Total waste produced by Lidl



Picture 7 shows the total amount of waste produced by Lidl at wave 1. The total weight of packaging was 799.5 grams of which 61% (489 grams) were recyclable materials. Pictures 8 and 9 show the recyclable items. Picture 10 shows the waste that would constitute household rubbish (with the exception of the plastic milk bottle, which can now be recycled widely, and has been included in calculations above as recyclable).

Picture 8: Recyclable waste produced by Lidl – paper and card



Picture 9: Recyclable waste produced by Lidl – tins and glass



Picture 10: Rubbish produced by Lidl



4 Analysis of Local Retailers

Picture 11: Shopping basket from local retailers



This photograph shows the products purchased from local retailers. All items on the shopping list were available from local retailers.

4.1 Local Retailers - Fruit and Vegetables

Table 4.1: Local retailers – Fruit and vegetables

LOCAL RETAILERS	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Avocadoes	-	-	-	-	-
Baking potatoes	-	-	-	-	-
Bananas	-	-	-	-	-
Broccoli	-	-	-	-	-
Cherry tomatoes	12	-	-	12	100
Cucumber	-	-	-	-	-
Grapes	5	-	-	5	100
Mushrooms	5	5	100	-	-
Peppers	-	-	-	-	-
Strawberries	16	-	-	16	100

The majority of the fruit and vegetables (six out of ten items) were available without packaging. The cherry tomatoes were packaged in a plastic tub with a plastic lid. This tub was approximately 60% full. The grapes were packaged in a plastic bag that was approximately 60% full. The mushrooms were contained in a small recyclable paper bag. The strawberries were packaged in a plastic tub, which was also around 60% full.

4.2 Local Retailers - Meat and Fish

Table 4.2: Local retailers – Meat and fish

LOCAL RETAILERS	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pork sausages	5	-	-	5	100
Minced beef	4	-	-	4	100
Chicken breasts	2	-	-	2	100
Lamb chops	10	-	-	10	100
Fresh salmon	17	-	-	17	100

All of the packaging containing the meat was classified as rubbish. The sausages, minced beef, chicken breasts and lamb chops were all purpose - wrapped in plastic bags. The sausages and chops were wrapped in wax paper (rubbish) as well as the plastic bags. Salmon was only available as fishcakes from this retailer and these were packaged in a plastic tray with a plastic film covering, which was about 50% full by volume.

4.3 Local Retailers – Dairy

Table 4.3: Local retailers – Dairy

LOCAL RETAILERS	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Semi skimmed milk	23	21	91	2	9
Sunflower spread	27	-	-	27	100
Stilton	3	-	-	3	100
Eggs	25	25	100	-	-

The milk was contained in a plastic bottle (widely recyclable) with a foil top and plastic lid. The sunflower spread was contained in a plastic tub with a plastic lid. Stilton was not available from this retailer so cheddar was purchased as a substitute, which was wrapped in a small plastic packet. Eggs were packaged in a recyclable cardboard box.

4.4 Local Retailers - Other Essentials

Table 4.4: Local retailers – Other essentials

LOCAL RETAILERS	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pizza	177	177	100	-	-
Sugar	8	8	100	-	-
Raisins	6	-	-	6	100
Multi-pack crisps	16	-	-	16	100
Choc chip cookies	11	-	-	11	100
Cornflakes	95	87	92	8	8
Loaf white bread	3	-	-	3	100
Baked Beans	52	52	100	-	-
Tea	32	29	91	3	9
Jam	215	207	96	8	4

The pizza was contained in a large recyclable cardboard box. Sugar was packaged in a recyclable paper bag which was about 90% full by volume. The raisins were in a plastic bag that was around 90% full, whilst the individual foil lined crisps bags were approximately 50% full, and the large plastic wrapping was approximately about 80% full. The cookies were in a tray with a surrounding plastic packaging which was approximately 60% full by volume.

The cornflakes were packaged in a plastic bag inside a recyclable cardboard box. The food contents took up approximately 75% of the volume of the bag. The loaf of bread was wrapped in a plastic film wrap, while the baked beans were in a can. The tea was packaged in a cardboard box with an outer plastic film wrap and the jam was contained in a glass jar.

4.5 Local Retailers Summary

Picture 12: Total waste produced by local retailers.



Picture 12 shows the total waste produced by local retailers totalling 769 grams. Of this, 611 grams (79%) was recyclable. Pictures 13 and 14 show the recyclable waste resulting from shopping at local retailers. Picture 15 shows the amount classified as rubbish (although the plastic milk bottle, which can now be recycled widely, has been included in calculations above as recyclable).

Picture 13: Recyclable waste produced by local retailers – paper and card



Picture 14: Recyclable waste produced by local retailers – tins and glass



Picture 15: Rubbish produced by local retailers



5 Analysis of a market

Picture 16: Shopping basket from a market



Picture 16 shows the shopping basket from a market. All items except for the pizza were available from this retailer.

5.1 A Market - Fruit and Vegetables

Table 5.1: A market – Fruit and vegetables

A MARKET	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Avocados	-	-	-	-	-
Baking potatoes	-	-	-	-	-
Bananas	-	-	-	-	-
Broccoli	-	-	-	-	-
Cherry tomatoes	21	-	-	21	100
Cucumber	1	-	-	1	100
Grapes	5	5	100	-	-
Mushrooms	5	5	100	-	-
Peppers	-	-	-	-	-
Strawberries	20	-	-	20	100

Five of the ten fruit and vegetable items were available without any packaging from the market. The cherry tomatoes were packaged in a plastic tub with a plastic lid. The tomatoes filled approximately 70% of the volume of the box. The cucumber was shrink-wrapped whilst the grapes and mushrooms were packaged in paper bags (recyclable). The strawberries, like the tomatoes, were packaged in a plastic tub with a plastic lid, although they filled only approximately 50% of the volume of the box.

5.2 A market - Meat and Fish

Table 5.2: A market – Meat and fish

A MARKET	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pork sausages	12	5	42	7	58
Minced beef	4	-	-	4	100
Chicken breasts	5	-	-	5	100
Lamb chops	2	-	-	2	100
Fresh salmon	20	19	95	1	5

The sausages were wrapped in wax paper (rubbish) and packaged inside a paper bag (recyclable), whilst the minced beef, chicken breasts and lamb chops were all packaged in plastic bags. The salmon was wrapped in paper and packaged inside a plastic bag. All of these were purpose-wrapped so there were no large discrepancies between the size of the packaging and the volume of the food.

5.3 A market – Dairy

Table 5.3: A market – Dairy

A MARKET	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Semi skimmed milk	27	25	93	2	7
Sunflower spread	16.5	-	-	16.5	100
Stilton	12	-	-	12	100
Eggs	26	26	100	-	-

The milk was packaged in a plastic bottle (widely recyclable) with a foil top and a plastic lid. The sunflower spread was packaged in a plastic tub. The stilton was wrapped in cling film and contained in a plastic bag. The eggs were packaged in a cardboard carton classified as recyclable.

5.4 A market - Other Essentials

Table 5.4: A market – Other essentials

A MARKET	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pizza*	77	64.5	84	12.5	16
Sugar	8	8	100	-	-
Raisins	27	24	89	3	11
Multi-pack crisps	18	-	-	18	100
Choc chip cookies	7.5	-	-	7.5	100
Cornflakes	62	56.5	91	5.5	9
Loaf white bread	11	11	100	-	-
Baked Beans	67.5	67.5	100	-	-
Tea	29	27	93	2	7
Jam	227	220	97	7	3

* Pizza was not available from the market and has been assigned an average value based on figures from other retailers.

Sugar was packaged in a recyclable paper bag, and was approximately 90% full. The raisins were packaged in a plastic bag (rubbish) that was approximately 95% full inside a recyclable cardboard box. The crisp bags were approximately 60% full and were packaged in foil lined bags inside a larger “multi-pack” plastic bag. The cookies were packaged in a plastic tray, with an outer plastic wrap. The cornflakes were packaged in a plastic bag (rubbish) inside a recyclable cardboard box, which was approximately 80% full. The bread was packed in a paper bag, meaning this package was classified as recyclable. The beans were packaged in a can and the tea was in a cardboard box with a film wrapping. The jam was contained in a glass jar.

5.5 The Market Summary

Picture 17: Total waste produced by the market



Picture 17 shows the total waste produced by the market. The total weight of packaging was 710.5 grams, of which 563.5 grams (79%) was recyclable. Pictures 18 and 19 show the recyclable items, and picture 20 shows the waste classified as rubbish (although the plastic bottle was calculated as 'recyclable', as facilities to recycle plastic bottles exist widely now).

Picture 18: Recyclable waste produced by the market – paper and card



Picture 19: Recyclable waste produced by the market – tins and glass



Picture 20: Rubbish produced by the market



6 Analysis of Marks and Spencer

Picture 21: Shopping basket from Marks and Spencer



Picture 21 shows the contents of the shopping basket from Marks and Spencer. All items on the shopping list were available from Marks and Spencer.

6.1 Marks and Spencer - Fruit and Vegetables

Table 6.1: Marks and Spencer – Fruit and vegetables

MARKS AND SPENCER	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Avocadoes	-	-	-	-	-
Baking potatoes	-	-	-	-	-
Bananas	-	-	-	-	-
Broccoli	-	-	-	-	-
Cherry tomatoes	18	-	-	18	100
Cucumber	2	-	-	2	100
Grapes	5	-	-	5	100
Mushrooms	2	-	-	2	100
Peppers	-	-	-	-	-
Strawberries	43	-	-	43	100

Five of the fruit and vegetable items, avocadoes, potatoes, bananas, broccoli and peppers were available to purchase without any packaging. Cherry tomatoes were packaged in a plastic tub with a film lid. This tub was approximately 50% full. The cucumber was shrink-wrapped. The grapes were contained in a plastic bag, which was approximately 60-70% full. The mushrooms were contained in a plastic bag, and the strawberries were packaged in a plastic tub with a plastic lid which was approximately 60% full.

6.2 Marks and Spencer - Meat and Fish

Table 6.2: Marks and Spencer – Meat and fish

MARKS AND SPENCER	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pork sausages	6	-	-	6	100
Minced beef	23	-	-	23	100
Chicken breasts	27	-	-	27	100
Lamb chops	26	-	-	26	100
Fresh salmon	35	-	-	35	100

The sausages were packaged in a small plastic pouch. The minced beef, chicken breasts and lamb chops were packaged in plastic trays with a plastic film lid which were approximately 60-70% full. The salmon was in a plastic tray with a film lid and this was approximately 40% full, as there was a plastic divider between the two fillets in the pack.

6.3 Marks and Spencer – Dairy

Table 6.3: Marks and Spencer – Dairy

MARKS AND SPENCER	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Semi skimmed milk	23	21	91	2	9
Sunflower spread	28	-	-	28	100
Stilton	18	-	-	18	100
Eggs	27	27	100	-	-

The milk was packaged in a plastic bottle (widely recyclable) with a foil top and a plastic lid. The sunflower spread was packaged in a plastic tub with a plastic lid. The stilton was packaged in a plastic tray with a plastic film lid. The eggs were packaged in a recyclable cardboard box.

6.4 Marks and Spencer - Other Essentials

Table 6.4: Marks and Spencer – Other essentials

MARKS AND SPENCER	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pizza	76	62	82	14	18
Sugar	8	8	100	-	-
Raisins	6	-	-	6	100
Multi-pack crisps	17	-	-	17	100
Choc chip cookies	9	-	-	9	100
Cornflakes	52	45	87	7	13
Loaf white bread	9	-	-	9	100
Baked Beans	60	60	100	-	-
Tea	30	26	87	4	13
Jam	232	220	95	12	5

The pizza was shrink-wrapped and had a polystyrene base (rubbish) and an outer layer of a recyclable cardboard box. The sugar was contained in a paper bag (recyclable), whilst the raisins were in a plastic bag (rubbish) which was approximately 60% full. The crisps were packaged in foil lined bags which were approximately 50% full and were contained in an outer foil lined bag which was approximately 40% full. The cookies were packaged in a tray and an outer foil lined plastic wrapping. The cornflakes were packaged in a plastic bag (rubbish) which was approximately 65% full and was contained in a recyclable cardboard box. The bread was in a plastic bag, and the baked beans were packaged in a can. The tea was packaged in two foil bags contained in a recyclable cardboard box.

6.5 Marks and Spencer Summary

Picture 22: Total waste produced by Marks and Spencer



Picture 22 shows the total waste generated by the food basket from Marks and Spencer. The total weight of the packaging was 782 grams, of which 469 grams (60%) was recyclable. Pictures 23 and 24 show the recyclable items; picture 25 shows the waste that would be disposed of as rubbish (although the plastic bottle is considered recyclable in calculations above).

Picture 23: Recyclable waste produced by Marks and Spencer – paper and card



Picture 24: Recyclable waste produced by Marks and Spencer – tins and glass



Picture 25: Rubbish produced by Marks and Spencer



7 Analysis of Morrisons

Picture 26: Shopping basket from Morrisons



All items were available from Morrisons; the contents of the shopping basket are shown in picture 26.

7.1 Morrisons - Fruit and Vegetables

Table 7.1: Morrisons – Fruit and vegetables

MORRISONS	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Avocados	-	-	-	-	-
Baking potatoes	-	-	-	-	-
Bananas	3	-	-	3	100
Broccoli	-	-	-	-	-
Cherry tomatoes	11	-	-	11	100
Cucumber	1	-	-	1	100
Grapes	6	-	-	6	100
Mushrooms	3	-	-	3	100
Peppers	2	-	-	2	100
Strawberries	40	-	-	40	100

Three of the ten fruit and vegetable items from Morrisons were available without any packaging. Bananas had a plastic hook attached to the top of the bunch, the cherry tomatoes were in a plastic tub (which was approximately 80% full) with a plastic film casing and the cucumber was shrink-wrapped. The grapes were packaged in a plastic bag which was approximately 60% full. The mushrooms were purchased in a plastic bag and the three peppers were shrink-wrapped together. The strawberries were in a plastic tub with a plastic lid and this was approximately 50% full by volume.

7.2 Morrisons - Meat and Fish

Table 7.2: Morrisons – Meat and fish

MORRISONS	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pork sausages	18	-	-	18	100
Minced beef	27	-	-	27	100
Chicken breasts	17	-	-	17	100
Lamb chops	14	-	-	14	100
Fresh salmon	19	-	-	19	100

All of the packaging from the meat purchased at Morrisons was classified as rubbish. All of the meat items were packaged in plastic trays with film lids. The sausage and minced beef packaging was approximately 75% full, and the chicken breasts, lamb chops and salmon were around 40% full.

7.3 Morrisons – Dairy

Table 7.3: Morrisons – Dairy

MORRISONS	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Semi skimmed milk	23	21	91	2	9
Sunflower spread	24	-	-	24	100
Stilton	10	-	-	10	100
Eggs	29	29	100	-	-

The milk was contained in a plastic bottle (widely recyclable) with a foil covering and a plastic lid. The sunflower spread was packaged in a plastic tub with a plastic lid, and the cheese was packaged in a plastic tray with a plastic lid. The eggs were contained in a recyclable cardboard carton.

7.4 Morrisons - Other Essentials

Table 7.4: Morrisons – Other essentials

MORRISONS	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pizza	89	77	87	12	13
Sugar	8	8	100	-	-
Raisins	5	-	-	5	100
Multi-pack crisps	11	-	-	11	100
Choc chip cookies	2	-	-	2	100
Cornflakes	91	84	92	7	8
Loaf white bread	3	-	-	3	100
Baked Beans	81	81	100	-	-
Tea	27	23	85	4	15
Jam	215	207	96	8	4

The pizza was on a polystyrene base and shrink-wrapped (rubbish) and packaged in a recyclable cardboard box. The sugar was packaged in a paper bag (recyclable), whilst the raisins were packed in a plastic bag (rubbish). The multi-pack of crisps consisted of foil lined plastic bags and a larger plastic pack that was approximately 50% full. The choc chip cookies were packaged in a plastic, and the cornflakes were in a plastic bag inside a cardboard box. The loaf of bread was packaged in a film wrap and the baked beans were contained in a can. The tea was contained in two small foil bags inside a cardboard box and the jam was packaged in a glass jar.

7.5 Morrisons Summary

Picture 27: Total waste produced by Morrisons.



The shopping basket from Morrisons (as shown in picture 27) resulted in 779 grams of packaging of which 530 grams (68%) were recyclable. Pictures 28 and 29 show the packaging that is recyclable. Picture 30 shows the rubbish from the shop at Morrisons (although the plastic bottle can be excluded, as this is now widely recyclable).

Picture 28: Recyclable waste produced by Morrisons – paper and card



Picture 29: Recyclable waste produced by Morrisons – tins and glass



Picture 30: Rubbish produced by Morrisons



8.1 Sainsbury's - Fruit and Vegetables

Table 8.1: Sainsbury's – Fruit and vegetables

SAINSBURY'S	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Avocados	-	-	-	-	-
Baking potatoes	-	-	-	-	-
Bananas	-	-	-	-	-
Broccoli	2.5	-	-	2.5	100
Cherry tomatoes	6.5	-	-	6.5	100
Cucumber	1	-	-	1	100
Grapes	5	-	-	5	100
Mushrooms	1	-	-	1	100
Peppers	-	-	-	-	-
Strawberries	20.5	-	-	20.5	100

Four of the fruit and vegetable items were available without any packaging. The broccoli and the cucumber were shrink-wrapped, and the cherry tomatoes were in a plastic tub with a plastic casing surrounding the tub. The mushrooms and grapes were packaged in plastic bags, while the strawberries were packaged in a plastic tub with a plastic lid.

8.2 Sainsbury's - Meat and Fish

Table 8.2: Sainsbury's – Meat and fish

SAINSBURY'S	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pork sausages	5	-	-	5	100
Minced beef	20	-	-	20	100
Chicken breasts	22	-	-	22	100
Lamb chops	26	-	-	26	100
Fresh salmon	28	-	-	28	100

The sausages were packaged in a small plastic pouch while the other meat items were all packaged in plastic trays with plastic film coverings which were approximately 40-60% full.

8.3 Sainsbury's – Dairy

Table 8.3: Sainsbury's – Dairy

SAINSBURY'S	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Semi skimmed milk	20	18	90	2	10
Sunflower spread	23	-	-	23	100
Stilton	3	-	-	3	100
Eggs	26	26	100	-	-

The milk was contained in a recyclable plastic bottle with foil top and plastic lid. The sunflower spread was packaged in a plastic tub with a plastic lid and the stilton was shrink-wrapped. The eggs were packaged in a cardboard carton classified as recyclable.

8.4 Sainsbury's - Other Essentials

Table 8.4: Sainsbury's – Other essentials

SAINSBURY'S	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pizza	83.5	68	81	15.5	19
Sugar	10	10	100	-	-
Raisins	6	-	-	6	100
Multi-pack crisps	13	-	-	13	100
Choc chip cookies	3	-	-	3	100
Cornflakes	94	88	94	6	6
Loaf white bread	5	-	-	5	100
Baked Beans	78	78	100	-	-
Tea	32	30	94	2	6
Jam	215	207	96	8	4

The pizza was packaged with a polystyrene base, shrink-wrapped (both rubbish) and then packaged in a recyclable cardboard box. The sugar was contained a paper bag (recyclable) whilst the raisins were packaged in a plastic pack (rubbish). The crisps were packaged in foil lined bags and contained in a large outer bag which was approximately 60% by volume. The cookies were contained in a plastic foil lined tube wrapping. The cornflakes were in a bag inside a cardboard box which was approximately 65% full. The loaf of bread was wrapped in a plastic film wrap whilst the beans were contained in a can. The tea was packaged in a plastic film bag inside a cardboard box, and the jam was contained in a recyclable glass jar (with a non-recyclable lid).

8.5 Sainsbury's Summary

Picture 32: Total waste produced by Sainsbury's.



Picture 32 shows the total waste derived from Sainsbury's. The total weight of rubbish was 749 grams, of which 525 grams (70%) was recyclable (shown in Pictures 33 and 34). Picture 35 shows the items that were rubbish (although the plastic bottle was considered to be recyclable in the calculations above).

Picture 33: Recyclable waste produced by Sainsbury's – paper and card



Picture 34: Recyclable waste produced by Sainsbury's – tins and glass



Picture 35: Rubbish produced by Sainsbury's



9.1 Tesco - Fruit and Vegetables

Table 9.1: Tesco – Fruit and vegetables

TESCO	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Avocadoes	-	-	-	-	-
Baking potatoes	-	-	-	-	-
Bananas	-	-	-	-	-
Broccoli	-	-	-	-	-
Cherry tomatoes	9	-	-	9	100
Cucumber	1.5	-	-	1.5	100
Grapes	4.5	-	-	4.5	100
Mushrooms	22.5	-	-	22.5	100
Peppers	-	-	-	-	-
Strawberries	29	-	-	29	100

Five of the ten fruit and vegetable items were available from Tesco without packaging. The cherry tomatoes were packaged in plastic tub with a plastic film wrapping. The cucumber was shrink-wrapped and the grapes were contained in a plastic bag that was approximately 50% full by volume. The mushrooms were packed in a plastic tray with a plastic film wrapping and the strawberries were in a plastic tub with a plastic lid.

9.2 Tesco - Meat and Fish

Table 9.2: Tesco – Meat and fish

TESCO	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pork sausages	2	-	-	2	100
Minced beef	23	-	-	23	100
Chicken breasts	15	-	-	15	100
Lamb chops	25	-	-	25	100
Fresh salmon	21	-	-	21	100

The sausages were in a clear plastic film wrap whilst the minced beef, chicken breasts, lamb chops, and fresh salmon were packaged in plastic trays with plastic covering. The chops were in packaging that was approximately 50% full of the product by volume, whilst the salmon, chicken and minced beef were approximately 70% full.

9.3 Tesco – Dairy

Table 9.3: Tesco – Dairy

TESCO	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Semi skimmed milk	22	20	91	2	9
Sunflower spread	20	-	-	20	100
Stilton	16.5	-	-	16.5	100
Eggs	29.5	29.5	100	-	-

The milk was packaged in a recyclable plastic bottle with foil top and plastic lid. The sunflower spread was packaged in a plastic tub with a plastic lid, the stilton was shrink-wrapped and the eggs were contained in a recyclable cardboard carton.

9.4 Tesco - Other Essentials

Table 9.4: Tesco – Other essentials

TESCO	WEIGHT OF TOTAL PACKAGING (g)	RECYCLABLE		RUBBISH	
		Weight (g)	% of total packaging	Weight (g)	% of total packaging
Pizza	36	18	50	18	50
Sugar	5	-	-	5	100
Raisins	4	-	-	4	100
Multi-pack crisps	17	-	-	17	100
Choc chip cookies	6	-	-	6	100
Cornflakes	78	70	90	8	10
Loaf white bread	2	-	-	2	100
Baked Beans	53	53	100	-	-
Tea	27	24	89	3	11
Jam	216	208	96	8	4

The pizza was packaged with a polystyrene base, shrink-wrapped (rubbish) and had a recyclable cardboard sleeve. The sugar and raisins were packaged in plastic bags (rubbish). The multi-pack of crisps comprised six individual bags in a large plastic bag that was approximately 60% full. The cookies were packaged in a wax paper bag with a plastic film window that was classified as rubbish, whilst the cornflakes filled approximately 75% of a plastic bag inside a cardboard box. The bread was wrapped in a plastic film wrap and the baked beans were contained in a recyclable can. The tea was wrapped in two foil pouches inside a cardboard box and the jam was in a recyclable glass jar with a non recyclable lid.

9.5 Tesco Summary

Picture 37: Total waste produced by Tesco



Picture 37 shows the total waste generated from the shopping basket purchased from Tesco. A total of 684.5 grams of waste was produced of which 422.5 grams (62%) was recyclable materials (as shown in Pictures 38 and 39). Picture 40 shows the rubbish from the basket purchased from Tesco, although the plastic milk bottle could be recycled and was included in recyclable figures above.

Picture 38: Recyclable waste produced by Tesco – paper and card



Picture 39: Recyclable waste produced by Tesco – tins and glass



Picture 40: Rubbish produced by Tesco



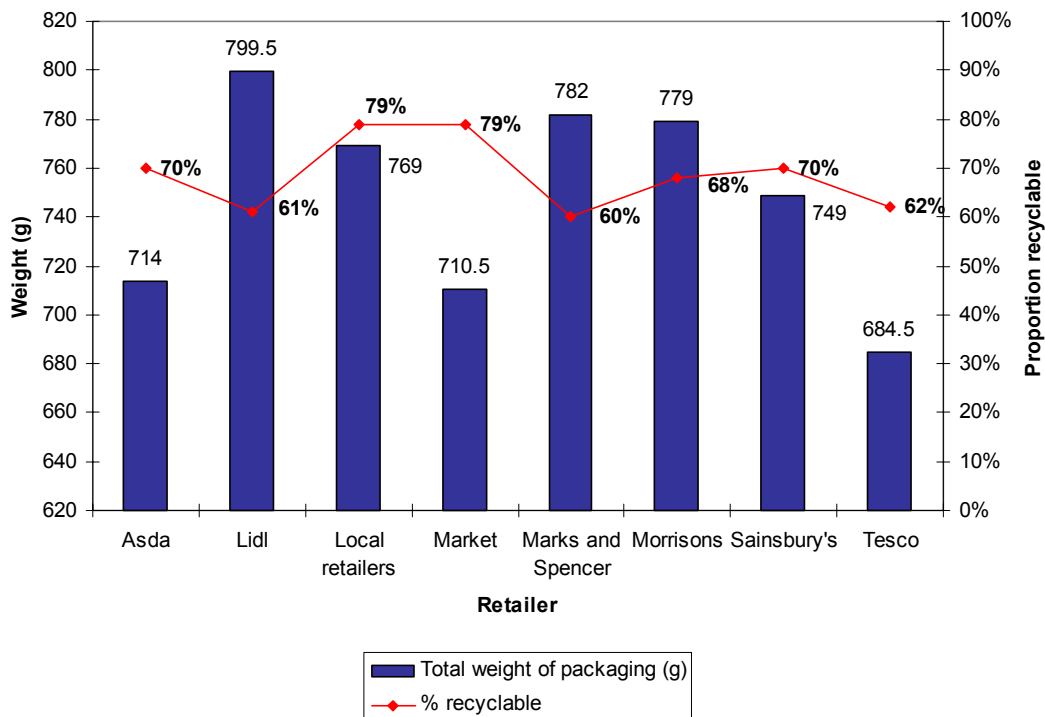
10 Overall Analysis

The total weight of packaging per basket ranged from 684.5 grams (Tesco) to 799.5 grams (Lidl), with an average weight of 748.5 grams. The proportion of waste that was recyclable ranged from 60% (Marks and Spencer) to 79% (at local retailers and the market) with an average proportion of 69% recyclable waste. Chart 10.1 demonstrates the weight of the total packaging in relation to the proportion of packaging that was recyclable.

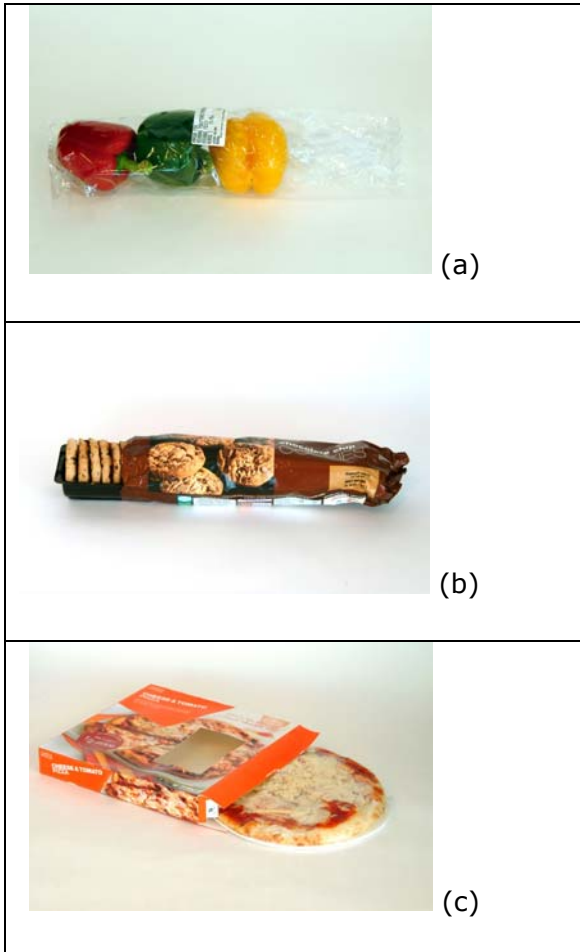
The market was the best performing retailer overall with a low total weight of packaging (710.5g) and the joint highest proportion of recyclable packaging (79%), Asda performed the best of the supermarkets with a relatively low total weight of packaging (714g) and relatively high level of recyclable packaging (70%).

Whilst local retailers achieved a high level of recyclable packaging (79%) they also had a high total weight of packaging (769g). Tesco achieved the lowest overall weight of packaging (684.5g) although only 62% of this was recyclable. Lidl and Marks and Spencer's both had high total weights of packaging (799.5g and 782g respectively) and relatively low proportions of recyclable waste (61% and 60%). Morrisons also had a high total weight of packaging although the recyclable percentage was around average and Sainsbury's packaging levels performed at around average level with 749g total waste, of which 70% was recyclable.

Chart 10.1: Total weight of packaging by retailer (shown to nearest 0.5 gram) and percentage of packaging that is recyclable



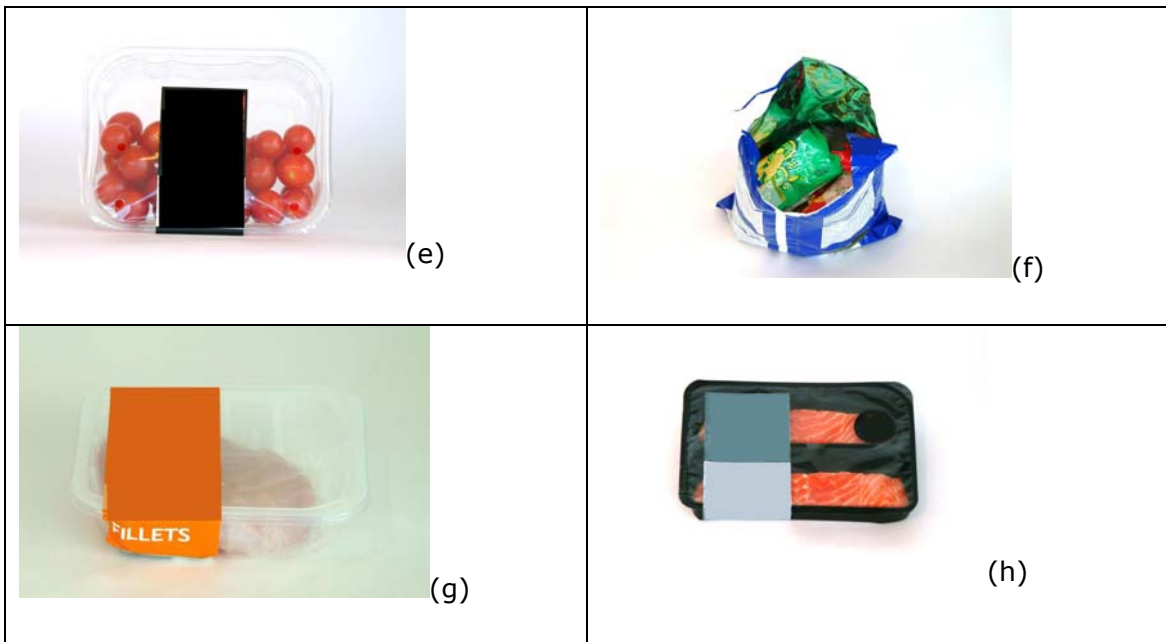
There were some items on the shopping list that appeared to be somewhat over-packaged (see photos below), such as shrink-wrapping on peppers and in one case broccoli, or excessive layers of packaging, or packaging that was much larger than the contents of the product and had low volume measures, for example, cornflakes, meat, tomatoes and crisps.



Snapshot (a) shows one of the fruit and vegetable items that was over-packaged in relation to the same item from other stores. Peppers were packaged at two of the retailers, although they were available loose at the remaining six. Photos (b) and (c) show further examples of over-packaging e.g. where the cookies are in a tray as well as in a plastic tube wrap. In some retailers (with less packaging) the cookies were available in the simple tube wrap without the tray. This pizza also had extra packaging in terms of a polystyrene base, shrink wrapping and a cardboard box. Although the cardboard box would be recyclable, a pizza was available from another store with a card base and shrink-wrap, with a sticker providing the food information and so saving a great deal on the total weight of packaging overall.



As found in previous studies¹⁵, certain items have much greater sized packaging in relation to the food, for example this bag of cornflakes (d) which were recorded as about 65% full by volume. This was also the case with other food types (snapshots e-h)



Example (e) shows a packet of tomatoes that is approximately only 50% full by volume. Snapshot (f) shows an example of the multi pack of crisps where the outer foil pack is much larger than the sum of the individual bags. The individual bags were approximately 50% full. This chicken pack (g) is only approximately 30-40% full. Shot (h) shows the salmon pack has a plastic divider in the middle between the two fillets and is approximately only 40% full by volume.

¹⁵ A study by Staffordshire County Council Trading Standards found that many boxes of cereal were only 40% - 50% full, for example.

11 Conclusions and Recommendations

The objective of this research was to inform the Local Government Association's 'War on Waste' campaign which seeks to address the amount of rubbish produced and the way in which it is thrown away. Food was analysed by food group across eight retailers to address this aim. The range of proportions of recyclable packaging ranged from 60% to 79% so there is certainly scope for improvement across all retailers in terms of reducing the amount of rubbish that is thrown away.

Within the fruit and vegetable food group, three to six of the items were available totally loose, with no packaging from each retailer. In all retailers the cherry tomatoes, strawberries and grapes came in some form of packaging, which is understandable given the size and nature of these fruits. Avocadoes and baking potatoes were available loose in all stores whilst bananas, broccoli, cucumber, and peppers varied in their level of packaging across retailers. Often packaging of fruit and vegetables comprised plastic bags, although one retailer did provide paper bags. This is an approach that could be taken on by more retailers to improve the proportion of their waste that is recyclable.

The majority of packaging on the meat products was rubbish, although Lidl's lamb chops had a cardboard sleeve providing the food and labelling information. The market provided salmon wrapped in paper, which could be recycled, and had used a paper bag as part of the packaging for the sausages. The use of paper bags for outer wrapping of meat items could be a good approach to reducing the amount of plastic waste in this area.

For the dairy produce, the milk and sunflower spread were packaged in exactly the same way for all retailers. The sunflower spread tubs were 100% rubbish, but the plastic milk bottle could be recycled (and only the lid and foil was rubbish). The cheese packaging varied from shrink-wrap to a large plastic tray with plastic lid. Whilst it would probably be difficult to package cheese in an alternative manner, attempts to keep the packaging a similar size to the product should be made by retailers (e.g. through shrink-wrapping which gives 100% volume rating). Eggs were packaged in cardboard cartons in all retailers. This waste is 100% recyclable, so there is no scope for improvement here.

The packaging on pizza varied between retailers from a simple cardboard box (for a ready to eat cooked fresh pizza), or a cardboard base and shrink-wrapping - both good approaches - to a pizza with a plastic or polystyrene base, shrink-wrapped and contained in a box. While the addition of the cardboard box contributes to the recyclable element of the packaging, the number of layers in some cases was perhaps excessive.

The sugar was packaged in paper bags in six out of the eight retailers and in plastic bags in the remaining two. The raisins were packed in plastic bags in all eight cases

although one retailer also used an outer cardboard box as well as the plastic pack. The crisps were packaged in the same way by all retailers in plastic or foil lined plastic bags in a larger plastic bag. The volume of food in relation to the size of the bags is an area which all retailers could improve to reduce the quantities of waste produced.

The cookies were packaged in plastic tubes in seven of the eight retailers and in a wax paper bag with a plastic window at the eighth retailer. The plastic tubes provide sufficient packaging for the cookies but in some cases a tray was also part of the packaging, providing further waste in a layer of packaging that could be considered unnecessary. The packaging of the cornflakes was the same in all eight retailers, in a plastic bag, packed in a cardboard box. Retailers could also focus on improving the volume of the cornflakes in relation to packaging size to improve performance on this product. Again, the market set a good example by providing a loaf of bread in a paper bag, whilst the seven other retailers had wrapped the bread in a plastic film or plastic bag.

The baked beans and jam came in the same format of packaging for all locations, a can for the beans and a glass jar for the jam. The packaging of the tea varied between locations but comprised a plastic or foil wrap either inside or surrounding a cardboard box in all cases. Three retailers had two separate foil packages for the tea within the box adding to the total waste.

12 Appendices

TOTAL WEIGHT OF FOOD & PACKAGING (g)	Asda	Lidl	Local shops	Market	M & S	Morrisons	Sainsbury	Tesco
Avocado (loose if possible)	799	735	955	745	731	938	535.5	514
Baking potatoes (loose if possible)	1201	1145	1500	1073	1045	1574	877	1650
Bananas (loose if possible)	1572	1006	1228	956	1045	1145	993	804
Broccoli (loose if possible)	367	381.5	357	454	371	359	340	422
Cherry Tomatoes (loose if possible)	209.5	257	267	263	281	317	289	205
Cucumber (loose if possible)	358	356	468	472	425	501	423.5	405
Grapes (loose if possible)	681	429	567	530	580	605	510	586
Mushrooms (any type) (loose if possible)	349	369	249	215	273	400	335	278
Peppers (loose if possible)	181	538	532	562	466	475	525	564
Strawberries (loose if possible)	498.5	460	583	224	810	417	192.5	494
Pork sausages (prepacked)	455	461	419	463	457	474	458	464
Minced Beef (prepacked)	525	961	498	495.5	521	533	539	536.5
2 Chicken Breasts (prepacked)	306	623	325	400	282	320	310	303
Lamb chops (pre packed)	173	408	292	230.5	522	255	374	372
Fresh Salmon (prepacked)	369	170	196	270	280	260	368	279
Fresh pizza	1009	594	1162	656	453	415	548	409
Semi skimmed milk	607	615	620	583	607	606	670	608.5
Sunflower spread (tub)	539.5	520	523	264	524	519	528	523
Stilton	154	217	259	149	247	233	198.5	268
Eggs	437	380	376	449	391	380	442	439
Sugar (any type)	1013	1021	1005	1008.5	1007	1004	1010	1014
Raisins	506	501	508	404	254	510	508	509
Multi pack crisps (any flavour)	140	188	166	162	167	166	148	174
Choc Chip Cookies	265	243	219	231	237	204	215	232
Cornflakes	599	603	597	314	563	593	601	584
Loaf of white bread UNSLICED e.g. bloomer	850	822	814	821	825	880	867	794
Baked Beans	472.5	480	473	473	473	469	472	470
Tea	295	294	285	299	291	289	295	305
Jam (any flavour)	660.5	480	667	522	572	670	670	670
TOTAL WEIGHT OF BASKET (food and packaging) (g)	15591.5	15257.5	16110	13688.5	14700	15511	14242	14876
TOTAL WEIGHT OF PACKAGING (g)	714	799.5	769	710.5	782	779	749	684.5
PACKAGING AS PROPORTION OF TOTAL BASKET	4.58%	5.24%	4.77%	5.19%	5.32%	5.02%	5.26%	4.60%

WEIGHT OF PACKAGING (g)	Asda	Lidl	Local shops	Market	M & S	Morrisons	Sainsbury	Tesco
Avocado (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baking potatoes (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bananas (loose if possible)	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Broccoli (loose if possible)	0.0	0.5	0.0	0.0	0.0	0.0	2.5	0.0
Cherry Tomatoes (loose if possible)	8.0	13.0	12.0	21.0	18.0	11.0	6.5	9.0
Cucumber (loose if possible)	1.0	1.0	0.0	1.0	2.0	1.0	1.0	1.5
Grapes (loose if possible)	4.0	5.0	5.0	5.0	5.0	6.0	5.0	4.5
Mushrooms (any type) (loose if possible)	1.0	27.0	5.0	5.0	2.0	3.0	1.0	22.5
Peppers (loose if possible)	0.0	5.0	0.0	0.0	0.0	2.0	0.0	0.0
Strawberries (loose if possible)	33.0	29.0	16.0	20.0	43.0	40.0	20.5	29.0
Pork sausages (prepacked)	2.0	4.0	5.0	12.0	6.0	18.0	5.0	2.0
Minced Beef (prepacked)	22.5	29.0	4.0	4.0	23.0	27.0	20.0	23.0
2 Chicken Breasts (prepacked)	17.0	26.0	2.0	5.0	27.0	17.0	22.0	15.0
Lamb chops (pre packed)	17.0	45.0	10.0	2.0	26.0	14.0	26.0	25.0
Fresh Salmon (prepacked)	23.0	21.5	17.0	20.0	35.0	19.0	28.0	21.0
Fresh pizza	55.0	22.0	177.0	77.0	76.0	89.0	83.5	36.0
Semi skimmed milk	24.0	19.0	23.0	27.0	23.0	23.0	20.0	22.0
Sunflower spread (tub)	28.5	21.0	27.0	16.5	28.0	24.0	23.0	20.0
Stilton	1.0	2.0	3.0	12.0	18.0	10.0	3.0	16.5
Eggs	31.0	31.0	25.0	26.0	27.0	29.0	26.0	29.5
Sugar (any type)	6.0	8.0	8.0	8.0	8.0	8.0	10.0	5.0
Raisins	7.5	3.5	6.0	27.0	6.0	5.0	6.0	4.0
Multi pack crisps (any flavour)	10.5	24.0	16.0	18.0	17.0	11.0	13.0	17.0
Choc Chip Cookies	2.0	11.0	11.0	7.5	9.0	2.0	3.0	6.0
Cornflakes	92.0	100.0	95.0	62.0	52.0	91.0	94.0	78.0
Loaf of white bread UNSLICED e.g. bloomer	1.0	6.0	3.0	11.0	9.0	3.0	5.0	2.0
Baked Beans	79.0	60.0	52.0	67.5	60.0	81.0	78.0	53.0
Tea	32.5	28.0	32.0	29.0	30.0	27.0	32.0	27.0
Jam (any flavour)	215.5	258.0	215.0	227.0	232.0	215.0	215.0	216.0
TOTAL WEIGHT OF PACKAGING (g)	714	799.5	769	710.5	782	779	749	684.5

WEIGHT OF RECYCLABLE PACKAGING (g)	Asda	Lidl	Local shops	Market	M & S	Morrisons	Sainsbury	Tesco
Avocado (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baking potatoes (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bananas (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Broccoli (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cherry Tomatoes (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cucumber (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grapes (loose if possible)	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0
Mushrooms (any type) (loose if possible)	0.0	0.0	5.0	5.0	0.0	0.0	0.0	0.0
Peppers (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strawberries (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pork sausages (prepacked)	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0
Minced Beef (prepacked)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 Chicken Breasts (prepacked)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lamb chops (pre packed)	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0
Fresh Salmon (prepacked)	0.0	0.0	0.0	19.0	0.0	0.0	0.0	0.0
Fresh pizza	49.0	0.0	177.0	64.5	62.0	77.0	68.0	18.0
Semi skimmed milk	22.0	17.0	21.0	25.0	21.0	21.0	18.0	20.0
Sunflower spread (tub)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stilton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eggs	31.0	31.0	25.0	26.0	27.0	29.0	26.0	29.5
Sugar (any type)	0.0	8.0	8.0	8.0	8.0	8.0	10.0	0.0
Raisins	0.0	0.0	0.0	24.0	0.0	0.0	0.0	0.0
Multi pack crisps (any flavour)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Choc Chip Cookies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cornflakes	85.0	90.0	87.0	56.5	45.0	84.0	88.0	70.0
Loaf of white bread UNSLICED e.g. bloomer	0.0	0.0	0.0	11.0	0.0	0.0	0.0	0.0
Baked Beans	79.0	60.0	52.0	67.5	60.0	81.0	78.0	53.0
Tea	30.0	26.0	29.0	27.0	26.0	23.0	30.0	24.0
Jam (any flavour)	207.0	244.0	207.0	220.0	220.0	207.0	207.0	208.0
TOTAL WEIGHT OF RECYCLABLE PACKAGING (g)	503	489	611	563.5	469	530	525	422.5
Proportion of total packaging that is recyclable	70.45%	61.16%	79.45%	79.31%	59.97%	68.04%	70.09%	61.72%

WEIGHT OF WASTE PACKAGING (RUBBISH) (g)	Asda	Lidl	Local shops	Market	M & S	Morrisons	Sainsbury	Tesco
Avocado (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baking potatoes (loose if possible)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bananas (loose if possible)	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Broccoli (loose if possible)	0.0	0.5	0.0	0.0	0.0	0.0	2.5	0.0
Cherry Tomatoes (loose if possible)	8.0	13.0	12.0	21.0	18.0	11.0	6.5	9.0
Cucumber (loose if possible)	1.0	1.0	0.0	1.0	2.0	1.0	1.0	1.5
Grapes (loose if possible)	4.0	5.0	5.0	0.0	5.0	6.0	5.0	4.5
Mushrooms (any type) (loose if possible)	1.0	27.0	0.0	0.0	2.0	3.0	1.0	22.5
Peppers (loose if possible)	0.0	5.0	0.0	0.0	0.0	2.0	0.0	0.0
Strawberries (loose if possible)	33.0	29.0	16.0	20.0	43.0	40.0	20.5	29.0
Pork sausages (prepacked)	2.0	4.0	5.0	7.0	6.0	18.0	5.0	2.0
Minced Beef (prepacked)	22.5	29.0	4.0	4.0	23.0	27.0	20.0	23.0
2 Chicken Breasts (prepacked)	17.0	26.0	2.0	5.0	27.0	17.0	22.0	15.0
Lamb chops (pre packed)	17.0	32.0	10.0	2.0	26.0	14.0	26.0	25.0
Fresh Salmon (prepacked)	23.0	21.5	17.0	1.0	35.0	19.0	28.0	21.0
Fresh pizza	6.0	22.0	0.0	12.5	14.0	12.0	15.5	18.0
Semi skimmed milk	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Sunflower spread (tub)	28.5	21.0	27.0	16.5	28.0	24.0	23.0	20.0
Stilton	1.0	2.0	3.0	12.0	18.0	10.0	3.0	16.5
Eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sugar (any type)	6.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Raisins	7.5	3.5	6.0	3.0	6.0	5.0	6.0	4.0
Multi pack crisps (any flavour)	10.5	24.0	16.0	18.0	17.0	11.0	13.0	17.0
Choc Chip Cookies	2.0	11.0	11.0	7.5	9.0	2.0	3.0	6.0
Cornflakes	7.0	10.0	8.0	5.5	7.0	7.0	6.0	8.0
Loaf of white bread UNSLICED e.g. bloomer	1.0	6.0	3.0	0.0	9.0	3.0	5.0	2.0
Baked Beans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tea	2.5	2.0	3.0	2.0	4.0	4.0	2.0	3.0
Jam (any flavour)	8.5	14.0	8.0	7.0	12.0	8.0	8.0	8.0
TOTAL WEIGHT OF WASTE PACKAGING (g)	211.0	310.5	158	147	313	249	224	262
Proportion of total packaging that is rubbish	29.55%	38.84%	20.55%	20.69%	40.03%	31.96%	29.91%	38.28%

VOLUME OF FOOD IN RELATION TO PACKAGING (%)	Asda	Lidl	Local shops	Market	M & S	Morrisons	Sainsbury	Tesco
Avocado (loose if possible)	-	-	-	-	-	-	-	-
Baking potatoes (loose if possible)	-	-	-	-	-	-	-	-
Bananas (loose if possible)	-	-	-	-	-	-	-	-
Broccoli (loose if possible)	-	N/A	-	-	-	-	95	-
Cherry Tomatoes (loose if possible)	90	80	60	70	50	80	90	80
Cucumber (loose if possible)	100	100	-	100	100	100	100	100
Grapes (loose if possible)	80	50	60	70	60	60	80	50
Mushrooms (any type) (loose if possible)	-	75	-	-	-	-	-	80
Peppers (loose if possible)	-	75	-	-	-	85	-	-
Strawberries (loose if possible)	85	67	60	50	60	50	80	85
Pork sausages (prepacked)	90	90	90	100	80	75	95	90
Minced Beef (prepacked)	85	50	100	100	70	80	60	70
2 Chicken Breasts (prepacked)	70	50	100	100	60	40	65	70
Lamb chops (pre packed)	60	60	100	100	70	40	40	50
Fresh Salmon (prepacked)	80	80	50	100	40	50	60	80
Fresh pizza	100	100	90	84	50	50	100	100
Semi skimmed milk	100	100	100	100	100	100	100	100
Sunflower spread (tub)	100	100	100	100	100	100	100	100
Stilton	100	100	100	100	90	80	100	100
Eggs	100	100	100	100	100	100	98	100
Sugar (any type)	90	90	90	90	90	90	90	90
Raisins	95	95	90	95	60	95	70	90
Multi pack crisps (any flavour)	50	50	50	60	50	50	60	60
Choc Chip Cookies	95	60	60	95	95	90	90	50
Cornflakes	80	60	75	80	65	80	65	75
Loaf of white bread UNSLICED e.g. bloomer	95	80	80	95	70	80	80	95
Baked Beans	100	100	100	100	100	100	100	100
Tea	80	80	90	90	85	90	90	95
Jam (any flavour)	100	100	100	100	100	100	100	100
AVERAGE VOLUME	88%	79.68%	83.86%	90.39%	75.87%	77.71%	83.67%	83.96%

List of items for basket

WAR ON WASTE		JN: 45106324	
WAVE 1 - MAY 2007			
Please purchase every item. Please buy the quantity stated and take note of MINIMUM weights. Use the instructions column for help with any substitutions. Please remember to shop for OWN BRAND goods where possible. More details can be found in your instructions. Any problems please ring Claire on 0208 433 4404.			
Item	Required weight/ quantity	Instructions/substitutions	COMMENTS
Avocado (loose if possible)	3	Avocadoes should be loose if possible. Packaged is acceptable if otherwise unavailable	
Baking potatoes (loose if possible)	4	Potatoes should be loose if possible. Packaged is acceptable if otherwise unavailable	
Bananas (loose if possible)	Bunch (minimum 5)	Bunch of bananas loose if possible. Packaged is acceptable if otherwise unavailable	
Broccoli (loose if possible)	300g minimum	Broccoli should be loose if possible. Packaged is acceptable if otherwise unavailable	

**WAR ON WASTE
WAVE 1 - MAY 2007**

JN: 45106324

Please purchase every item. Please buy the quantity stated and take note of MINIMUM weights. Use the instructions column for help with any substitutions. Please remember to shop for OWN BRAND goods where possible. More details can be found in your instructions. Any problems please ring Claire on 0208 433 4404.

Item	Required weight/ quantity	Instructions/substitutions	COMMENTS
Cherry Tomatoes (loose if possible)	250g	Cherry tomatoes should be loose if possible. Packaged is acceptable if otherwise unavailable. If loose, a bag provided at the counter is acceptable for this product	
Cucumber (loose if possible)	1 whole	Cucumber should be loose if possible. Packaged is acceptable if otherwise unavailable	
Grapes (loose if possible)	500g	Grapes should be loose if possible. Packaged is acceptable if otherwise unavailable. If loose a bag provided at the counter is acceptable for this product	

**WAR ON WASTE
WAVE 1 - MAY 2007**

JN: 45106324

Please purchase every item. Please buy the quantity stated and take note of MINIMUM weights. Use the instructions column for help with any substitutions. Please remember to shop for OWN BRAND goods where possible. More details can be found in your instructions. Any problems please ring Claire on 0208 433 4404.

Item	Required weight/ quantity	Instructions/substitutions	COMMENTS
Mushrooms (any type) (loose if possible)	250g	Mushrooms should be loose if possible. Packaged is acceptable if otherwise unavailable. If loose a bag provided at the counter is acceptable for this product.	
Peppers (loose if possible)	3	3 peppers should be loose if possible. Packaged is acceptable if otherwise unavailable	
Strawberries (loose if possible)	400g	Strawberries should be loose if possible. Packaged is acceptable if otherwise unavailable. If loose a bag provided at the counter is acceptable for this product.	

**WAR ON WASTE
WAVE 1 - MAY 2007**

JN: 45106324

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Item	Required weight/ quantity	Instructions/substitutions	COMMENTS
Pork sausages (prepacked)	400g minimum	Pre packed if possible, other sausages acceptable if pork are unavailable. Loose is acceptable if otherwise not available	
Minced Beef (prepacked)	500g	Pre packed if possible, other mince acceptable if beef is unavailable. Loose is acceptable if otherwise not available	
2 Chicken Breasts (prepacked)	250g minimum	Pre packed if possible. Loose is acceptable if otherwise not available	
Lamb chops (pre packed)	200g minimum	Pre packed if possible. Loose is acceptable if otherwise not available	
Fresh Salmon (prepacked)	250g minimum	Pre packed if possible, frozen salmon acceptable if fresh not available. Loose is acceptable if otherwise not available	

**WAR ON WASTE
WAVE 1 - MAY 2007**

JN: 45106324

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Item	Required weight/ quantity	Instructions/substitutions	COMMENTS
Fresh pizza	12"	Own brand if possible. Frozen is acceptable if otherwise not available. Similar size (e.g. 10"/14" acceptable if otherwise not available)	
Semi skimmed milk	1 pint	Own brand if possible. Other brand acceptable if otherwise not available	
Sunflower spread (tub)	500g	Other 500g tub margarine acceptable if sunflower spread not available	
Stilton	125g minimum	Own brand if possible. Other brand acceptable if otherwise not available	

**WAR ON WASTE
WAVE 1 - MAY 2007**

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Please purchase every item. Please buy the quantity stated and take note of MINIMUM weights. Use the instructions column for help with any substitutions. Please remember to shop for OWN BRAND goods where possible. More details can be found in your instructions. Any problems please ring Claire on 0208 433 4404.

Item	Required weight/ quantity	Instructions/substitutions	COMMENTS
Eggs	6 medium	Own brand if possible. Other brand acceptable if otherwise not available	
Sugar (any type)	1kg	Any own brand sugar 500g. Substitute with known brand if own brand not available	
Raisins	500g	Other dried fruit acceptable if raisins not available e.g. sultanas, currants, mixed dried fruits	
Multi pack crisps (any flavour)	6pack	Any own brand. Substitute with known brand if own brand not available	
Choc Chip Cookies	200g minimum	Own brand if possible. Other brand acceptable if otherwise not available	

**WAR ON WASTE
WAVE 1 - MAY 2007**

JN: 45106324

Please purchase every item. Please buy the quantity stated and take note of MINIMUM weights. Use the instructions column for help with any substitutions. Please remember to shop for OWN BRAND goods where possible. More details can be found in your instructions. Any problems please ring Claire on 0208 433 4404.

Item	Required weight/ quantity	Instructions/substitutions	COMMENTS
Cornflakes	500g	Similar cereal acceptable if cornflakes not available	
Loaf of white bread UNSLICED e.g. bloomer	800g	Any unsliced white is acceptable. Sliced will be accepted if unsliced is not available	
Baked Beans	1 can (400g minimum)	Own brand if possible. Other brand acceptable if otherwise not available	
Tea	80 tea bags	Own brand if possible. Other brand acceptable if otherwise not available	
Jam (any flavour)	minimum 400g	Own brand if possible. Other brand acceptable if otherwise not available	

War on Waste - 45106324

Pilot summary

Introduction

This report outlines the findings and recommendations from the pilot for War on Waste: Investigation into Food Packaging. This study seeks to examine the level of packaging found on common food items across a range of retailers.

The objectives of the pilot were as follows:

1. To test the content of the shopping list in three retailers.
2. To inform BMRB of any issues likely to be encountered by the shoppers when making the purchases.
3. To assess the packaging on the pilot purchases and confirm the precise nature of the analysis for the main study.

The pilot was conducted by the BMRB research team on the 17th and 18th April.

Pilot Shopping

The shopping list was developed using the list from the Total Diet Study which BMRB conduct on behalf of the Food Standards Agency. This list consists of around 120 items which represent common food purchasers made by the 'average shopper'. Using this list, BMRB and the Local Government Association (LGA) agreed a typical 'shopping basket' to use at the pilot stage. It consisted of 29 items across different food groups. The aim was to purchase 'own brand' products.

An objective of the pilot was to check the availability of the products (e.g. quantities and seasonality) and the availability across the different retailers (e.g. Does Lidl have it's own brand products? Can all the products be purchased in a street market?). It is important that the 'shopping basket' purchased in each retailer and in each wave of shopping is consistent so patterns over time may be identified across all retailers, between retailers and individually.

The shopping for the main stage will take place in Asda, Tesco, Sainsbury's, Marks and Spencer, Morrisons, Lidl, local retailers and a street market. As the first five retailers were familiar to the research team and are known to stock their own branded products, it was agreed with the LGA that the pilot would be done in Lidl, local independent retailers and a street market.

Observations - Shopping

A detailed breakdown for each store is noted in a separate document (War on Waste Shopping List – Recommendations).

Lidl, Hanwell

- Several products on the shopping list were not available in Lidl. For example – fresh salmon, lambs liver, raisins and so on. Those products that were not available were replaced with similar items.
- Lidl do not stock 'Lidl' branded food products, however they do stock brands that are only stocked in Lidl. A note was made of the brand names.

Local Retailers – Portobello Road, Shepherds Bush and Ealing

- Probably the most difficult shop as encountered several practical issues that will need to be included in the shopper briefings:
 - Local retailers are not always easily identified and time was spent during the pilot discussing whether or not stores were eligible or part of a chain.
 - It was very difficult in local retailers to identify 'own brand' products. Several small supermarket style stores stocked unrecognisable brands (e.g. Best Buy peanut butter) and there was indecision about whether or not the products were 'own brand'.
- Could not find several products on the shopping list. Rather than buying replacement products, a note was made of possible substitutions.

Street Market – Shepherds Bush and Portobello Road

The aim in the pilot was to find a suitable street market in the London area to use for the main study. We needed to find a market that was open daily and that sold a range of products (not just fruit or vegetables). This is critical as during the main stage the shopper will only have time to visit one market. For the pilot we visited Portobello Road and Shepherd Bush.

- Portobello Road market - This street market is open daily. However, after a brief walk through the market we found that the market only stocked a limited number of items on the shopping list – fruit, vegetables and bread. It is therefore not suitable for this study.
- Shepherd's Bush market – this market is set between Goldhawk Road and Shepherd's Bush underground stations, is one of West London's busier markets. It was very different to the market in Portobello Road. It is a permanent market, selling a variety of goods including foods and other household items. Inside the market there are also several shops that are an integral part of the market. During the pilot we did not purchase anything from the shops within the market.
 - The market stalls stocked a variety of food, however it proved difficult to purchase everything on the shopping list. We were able to buy many of the fresh products - meat (although not pre-packed as specified on the shopping list), fish, fruit and vegetables.

- The branding of the products was not a major issue at the street market as the majority of products purchased were sold loose. Tea and cookies were purchased however both were unrecognisable brands. Would these count as 'own brand'?

Analysis

The pilot was used to test the assessment of the packaging.

A table was used to record the following about each product:

1. Total weight
2. Weight of packaging
3. Weight recyclable packaging
4. Estimate of volume taken up by food
5. Any other comments

The packaging was weighed using a set of kitchen scales which measured in 1g units. For the main stage a more accurate set of scales will be used that weigh in 0.002g units and the kitchen scales will only be used for packaging over 20g.

Analysis observations

- Generally weighing the product and packaging was straightforward, however assessing the volume of packaging taken up by food was problematic. It will be difficult to keep this consistent over time.
- Categorising the packaging according to whether or not it is recyclable was also problematic. Some of the packaging had the recyclable logo, however it was disputable whether or not the packaging could be recycled e.g. Crisp packets which were lined with foil.

Questions / Recommendations arising from the pilot

- A detailed breakdown of the products purchased and comments regarding availability have been noted on the shopping list (War on Waste Shopping List – Recommendations).
- To track the packaging over the 4 waves of the study we need each shopping basket to be the same each wave. The pilot has demonstrated that some food items are not available in Lidl, the street market and local retailers. Rather than purchasing substitutions we recommend the following:
 1. Purchasing a core 'shopping basket' consisting of products available in all retailers
 2. Purchasing a secondary 'shopping basket' consisting of products available in the five main supermarkets

- Before confirming the shopping list we will conduct a product check in Asda, Sainsbury's, Morrisons, Marks and Spencer and Tesco.

- The briefing instructions for shoppers needs to cover the following points:
 1. What is a local retailer?
 2. Branding – need to provide a definition of 'own brand' products, particularly for those shoppers visiting Lidl, the street market and local retailers. The brands purchased in Lidl at the pilot can be added to the Lidl shopping list.
 3. Street market – can shopping be purchased from shops inside a market or only market stalls?

- At this stage we recommend that Shepherd's Bush market is used for the main stage however before we confirm this we will visit several other markets in the London area to check their suitability.

- At the analysis stage it will be useful to have a list of recycling symbols (UK and worldwide) and a list of materials that can be recycled (e.g. types of plastic). Advice on recycling can be found on <http://www.recycle-more.co.uk>.

- Assessing the volume taken up by food in the packaging is problematic and it will be difficult to keep it consistent over the 4 waves of the study. For quality purposes we recommend that at the first wave we take a photo of all products where we assess the volume – the photo can then be referred to at future waves to try and keep the estimates consistent.

- BMRB would like to discuss plans for using the food collected during the study. We have discussed donating the food to a local charity, however this may not be practical. It may be easier to try and sell the food to BMRB staff with all proceeds being donated to a charity of the LGA's choice.

Following the pilot:

A meeting was held with LGA following the pilot study where it was decided it was better to use a large market (not necessarily in London) in order to increase the chances of being able to purchase all items. Bury market with 370 stalls was chosen for the wide range of products it stocks.

Each interviewer was to visit two locations so we paired the retailers together taking into account the ease of shopping (it was perceived from the pilot that shopping in the market, and on the high street would be more difficult than supermarkets) and cost of shopping, taking into account that some stores were likely to be more expensive than others. The market was paired with Tesco, and the high street paired with Asda, the shopper who visited Sainsbury's also shopped at Lidl, and the final pair was Morrisons with Marks and Spencer.

The four areas of England for the shopping were chosen based on proximity of particular retailers to interviewers with experience of this type of job, and to gain a spread across the country. The four areas sampled were Birmingham, Bury, Surrey and Essex.

The charity chosen by LGA for donations resulting from the sale of the left over food was the Woodland Trust, and £50.63 was raised at wave 1.

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