
Market Basket Survey | Sydney | June 2006

Report Prepared on Behalf of the Sydney Food Fairness Alliance (SFFA)

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Sydney West Area Health Service (SWAHS)**

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Abbreviations

ABS	Australian Bureau of Statistics
CBD	Central Business District
CPI	Consumer Price Index
LGA	Local Government Area
MBS	Market Basket Survey
RDI	Recommended Daily Intake
SEIFA	Socio-Economic Indicators for Areas
SFFA	Sydney Food Fairness Alliance
SWAHS	Sydney West Area Health Service

Definitions

Socio-Economic Indicators for Areas (SEIFA)

Measured by the Australian Bureau of Statistics (ABS) these are estimates of aspects of socio economic status of residents in particular localities based on census information. Lowest SEIFA refers to localities with a SEIFA of disadvantage below 849. Highest SEIFA refers to localities with a SEIFA of disadvantage above 1100. The SEIFA groupings are those used in Meedeniya, Smith, and Carter, 2000.

Total Food Basket

The sum cost of all food items surveyed (Breads and cereals, Fruit, Vegetables, Dairy, Meat and alternatives, and Non-core Food Groups).

Food Groups

Groups of foods are defined by The Australian Government Department of Health and Ageing, Australian Guide to Healthy Eating. The five food groups are: Breads & cereals; Fruit; Vegetables; Dairy; Meat & alternatives and Non-core foods.

Generic Items

Supermarket own brand items e.g. Home Brand, Savings, No Frills.

Executive Summary

Poverty is a strong factor influencing health. Often the most disadvantaged people experience the poorest health. Those who could benefit the most from a healthy diet are increasingly unable to afford, find or use fresh healthy food.

Studies have found the cost of food in remote areas of Western Australia, Queensland, Northern Territory and South Australia to be higher than in capital cities and larger rural centers (Meedeniya, Smith & Carter, 2000). The quality of fruit and vegetables in these areas was also found to be poorer and the variety available to be more limited. A study in South Western Sydney has also previously found that supermarkets were less expensive than corner stores (Lowry, 2003).

The Market Basket Survey was designed to examine two major factors influencing food security, those being *food supply* and *food access*. The survey focused upon the price and quality of foods available in two major supermarket chains across Sydney and its surrounding suburbs.

A total of 37 supermarkets were surveyed, 19 of Chain 1 and 18 of Chain 2. The two supermarket chains were classified for analysis by suburb and level of social disadvantage.

The results of the survey indicate that the average price for the *Total Food Basket* has increased by \$41 in the past four years. This increase was contributed to by increased petrol prices, the drought and Cyclone Larry.

The results of the survey indicate that the price for the *Total Food Basket* was not consistent across Sydney with up to \$43 difference. The most expensive area was Sydney CBD and the least expensive was Roselands. There was little difference between mean prices for the supermarket chains.

The price also differed in areas of different socio-economic status. Stores in areas with higher socio-economic index for areas (SEIFA) and the store in the lowest SEIFA area were found to be the most expensive. Excluding the store in the area with the lowest SEIFA, a possible trend towards increasing price with increasing SEIFA was observed.

Analysis showed that a number of items were found to be unavailable in stores. The “meat & alternatives” food group was found to be the food group most likely to have items missing. This is consistent with previous studies by Meedeniya, Smith & Carter in 2000 and Lowry in 2003. Results also indicated that higher socio-economic areas had a higher percentage of overall items missing.

Overall the quality of fruit and vegetable generally rated poorly. Only 5 / 37 stores rated 80-85% for fruit and vegetables in the “all good” category. These results are poorer than those in previous studies (Meedeniya, Smith & Carter, 2000; Lowry, 2003). This finding may be due to a general decline in quality over time or be impacted by the subjectivity inherent in the tool used.

Results showed that the quality of fruit and vegetables differed in areas of different socio-economic status. The cheapest store with the lowest SEIFA rated higher in the fruit and vegetable quality than the most expensive store. However, there was a possible trend towards poorer fruit and vegetable quality with increasing disadvantage with exception to the store with the lowest SEIFA.

Survey results highlighted:

- a substantial increase in the cost of food,
- considerable variation in the price and availability of food, and
- considerable variation in the quality of fruit and vegetables provided in supermarkets across Sydney.

This could significantly impact on the food security of some of the most disadvantaged people in Sydney. Supermarkets need to take into consideration the socio-economic status of the area when determining pricing policy and provide consistently high quality fruit and vegetables across all stores.

1. Background

1.1 Sydney Food Fairness Alliance (SFFA)

This project was completed on behalf of the Sydney Food Fairness Alliance (SFFA). The SFFA was formed after the first Sydney Food Fairness Forum in May 2005. The Alliance enables continued contact and collaboration between a diverse range of people, all working on local food issues, with a common interest in achieving their goals of promoting community food security and sustainable food systems.

1.2 Food Security

Poverty is a strong factor influencing health. Often the most disadvantaged people experience the poorest health. Those who could benefit the most from a healthy diet are increasingly unable to afford, find or use fresh healthy food. Food security is a basic human right. Healthy choices should be easier choices for everyone.

In the 1995 National Nutrition Survey 5.2% of adults indicated that there were times in the last 12 months when they had run out of food. *Eat Well NSW, Strategic Directions for Public Health Nutrition 2002-2007* identified food security as a priority issue for health.

Food security refers to “access by all people at all times to the food needed for a healthy life, regardless of financial status” (Wood, 2001). Food supply and food access are two major components of food security. These issues present different problems to the community. Food supply refers to the aspects that affect food security within a community such as the location of food outlets, the availability of food within those stores, the price, quality and variety of food available and the promotion of such food. Food access refers to the resources and abilities that exist in order to acquire and use food. These resources include financial resources, distance and transport to shops, knowledge and skills, storage facilities and preparation and cooking facilities (Rychetnik, Webb, et al, 2002).

Previous work has shown that there are specific groups within the community, which are more at risk of becoming food insecure. These groups include people with low incomes, Aboriginal and Torres Strait Islanders, recent migrants, people with drug and alcohol addictions and single parent families. Studies have shown that being food insecure over a long period of time results in poor nutritional health. This in turn affects a person’s long-term health, lifestyle, ability to look for work and lifespan (Wood, 2001).

In Australia studies have found, in remote areas of Western Australia, Queensland, Northern Territory and South Australia:

- the cost of food is higher than in capital cities and larger rural centres
- the quality of fruit and vegetables were poorer
- the variety available was more limited

(Meedeniya, Smith & Carter, 2000)

Previous studies in this area have also shown that Corner Stores are significantly more expensive than supermarkets and the quality and variety of foods found in Corner Stores are significantly lower than supermarkets or even fruit and vegetable shops (Lowry, 2003).

Areas of concern are the price differences between staple items such as dairy products and breads & cereals. Meat and breads & cereals were the most commonly missing food items on the store shelves and therefore from the basket (Lowry, 2003).

In Sydney, where food is seemingly abundant and varied, there are significant numbers of people who don't regularly have enough sufficient nutritious food. Previous studies have produced evidence that show that access to fresh and healthy foods is not equal across South Western Sydney, in terms of availability, quality and price (Lowry, 2003).

In the Sydney Basin, productive and viable local agriculture is being undermined by a combination of development pressure and cheap imports by global companies. This is unnecessary and ultimately unsustainable. Food production today should not undermine the rights of future generations to access fresh and nutritious food.

1.3 The Market Basket Survey

A Market Basket Survey (MBS) is a useful tool for determining the food supply within a community. A Market Basket Survey is designed to evaluate the cost, availability, variety and quality of the local food supply. However it can also be used to assess if there are adequate modes of transport and the availability of a home delivery service (USDA, 2002).

A MBS is a commonly used tool. There have been previous MBS's in:

- South Australia (Meedeniya, Smith & Carter, 2000)
- the Northern Territory (Northern Territory Government, 2003)
- Queensland (Leonard, Zlotkowski, Harrison and Bonehill, 1997)
- South Western Sydney (Lowry, 2003)

1.4 Goal

To determine whether there are inequalities in the price and quality of food across Sydney and the likely impact on the food security of people living in disadvantaged areas of Sydney.

1.5 Objectives

To determine:

- whether the cost of a standard basket varied
- whether the quality of some fruits and vegetables varied
- whether the availability of foods in a standard basket varied

2. Method

A standard food basket tool (Appendix 1) was created based upon food items from a similar survey conducted in South Australia (Meedeniya, Smith & Carter, 2000) and the South Western Sydney study (Lowry, 2003). Minor modifications were made to the food items to capture some cultural differences, new products and product sizes available. The category of "other" was excluded from this tool as it contained some non-food items including cigarettes.

The food basket was designed to contain an adequate amount of food to feed a family of six people. The quantities of food items were designed to feed the family over a long period of time and would suit rural areas as well as urban. It was also designed to meet the nutritional requirements of a wide range of age groups. The food basket was based on the serves of each food group recommended by the *Australian Guide to Healthy Eating* (Smith, Kellet & Schmerlaib, 1998). The foods within each food group were based on the foods actually eaten in Australia as measured in the *National Nutrition Survey* (ABS, 1999). These particular foods were chosen as they met most of the *recommended dietary intake* (RDI).

No generic items were included in the survey. Generic items are the supermarket's own brand product. Generics were left out to maintain consistency with previous studies where they had been excluded (Meedeniya, Smith & Carter, 2000; Lowry, 2003). It was also considered unlikely that many people would choose a basket made up of mainly generic brands, which might have been the consequence of permitting generic brands. In addition, generic brands are less likely to be available in all store types e.g. Corner Stores.

The survey also examined the quality of the fruits and vegetables. Quality was assessed using a visual assessment method (Appendix 1). The number of varieties of fruits and vegetables were again based on the list created in the South Australian survey (Meedeniya, Smith & Carter, 2000) and the South Western Sydney study (Lowry, 2003). Some of the items were not used in this survey due to the seasonal availability of certain fruits. There were 19 types of fruit and vegetables evaluated as to whether or not the selection available was of "all good" quality. An "all good" quality fruit and vegetable rating was given if none of the produce on display was aged, bruised or mouldy. A percentage was then calculated as well as a ranking of 'all good' fruit and vegetable quality.

2.1 Selecting the Shops / Areas

Stores were chosen across the Sydney region. The study area was also extended to include Lithgow and the Blue Mountains by Sydney West Area Health Service (SWAHS). In exchange for coordinating the survey, stores in each local government area (LGA) in SWAHS were included. The other areas surveyed across Sydney depended on where SFFA volunteers agreed to survey.

The survey coordinator sought to ensure that suburbs with varying levels of socio-economic status were included in the study. Socio-economic status of a suburb was determined by socio-economic index of disadvantage for areas (SEIFA). High unemployment, single parent families, low incomes and high levels of public housing are common in areas with lower SEIFA (Epidemiology Unit, SWAHS, 2001). Each of these issues contributes to the risk of food insecurity among the people living in these suburbs.

Two supermarket chains were selected to survey. Both these chains were surveyed in each area where possible. These two chains were selected because they are the major supermarkets in Sydney and are the most accessible. This also allowed a comparison to be made between the price and availability of food items within the various areas and within each chain.

2.2 Conducting the Survey

The survey was conducted on Thursday 22 June 2006. Surveys were completed on that day only. This reduced the risk of variation of prices and specials on different days.

Informing the Stores

A decision was made not to contact the storeowners and gain their permission before conducting the survey. This replicated the methodology of the South Western Sydney study (Lowry, 2003). This study did not to contact the store owners because:

- the survey was not deemed intrusive into any of the store policies
- the information that was required was public knowledge
- informing the store owners prior to the survey could influence the survey results

Recording the Information

Data was recorded by volunteers from Sydney West Area Health Service (SWAHS) and volunteer members of the Sydney Food Fairness Alliance (SFFA). Volunteers were coordinated by a university student on student placement with SWAHS. All communication with volunteers was via email. Survey tools were distributed via email. Volunteers did not receive any training in conducting the survey. The data was recorded onto a survey tool (refer to Appendix 1) by the volunteers.

It was decided that a Market Basket Survey would be a suitable tool to determine what foods are available and the subsequent price and quality of such foods across the Sydney Region.

When costing the individual food items the cheapest non-generic item was selected. However, when only generic items were available these were included. When items were on special, the regular price was recorded. However, when only special prices were available these were included. If the specified size was not available then the next available size was substituted and noted in the survey under size found. On average, it took 1 – 1 ½ hours to complete the survey.

2.3 Analysing the Data

On completion of the data collection results were compiled into an excel spreadsheet and the information analysed. Items analysed included:

- the total cost of the food basket for each store
- total number and percentage of missing items from each store
- total cost for each food group
- the fruit and vegetable quality

The stores were grouped into two different categories - Chain 1 and Chain 2. They were also categorised by SEIFA ranking. This was done so that a comparison could be made between the various shops and across the different sites. To replicate the methodology of previous studies, the SEIFA was grouped. The quality and variety of the fruit and vegetables was compared across the different categories of shops, as well as the sites.

Throughout all of the food categories, there were missing items. To overcome this and so that comparisons could be made, the *average price* for Chain 1 and Chain 2 for that particular item was calculated and this price was then substituted into the sections where items were missing. This replicated the methodology of previous studies (Meedeniya, Smith & Carter, 2000; Lowry, 2003).

A further challenge to analysis of the items was that in various supermarkets there were different sized products. Surveyors found that it was not always possible to get the correct size from the standardised list. This then has an effect on the overall results for the total sum of basket. To combat these differences when comparing the cost of items across different stores, the *unit price* for each item, for each store, were calculated.

3. Results

3.1 Participation of the Shops

A total of 37 supermarkets were surveyed across Sydney and in surrounding suburbs - 19 stores from Chain 1 and 18 stores from Chain 2. The SEIFA index of disadvantage for suburbs surveyed ranged from 804.8 – 1158.93. There were 2 supermarkets with no data recorded for entire categories. These were excluded from the analysis for the *total food basket*. The complete categories from these stores were included in the analysis for the category e.g. breads & cereals.

3.2 The Cost of the Food Basket in Sydney

Cost Across Sydney

The results of the survey indicated that prices were not consistent across Sydney. The overall cost of the basket was found to vary significantly from shop to shop. The average price was \$216.80. Total cost ranged from \$200.40 to \$243.76, a difference of \$43. The most expensive area was Sydney CBD and the least expensive was Roselands. Lithgow, which could be classified as a rural centre, had a total basket cost of \$219.52.

Total Food Basket

- Highest cost = \$243.76 (Sydney CBD)
- Rural Centre = \$219.52
- Average cost = \$216.80
- Lowest Cost = \$200.40 (Roselands)
- Range = \$43.36

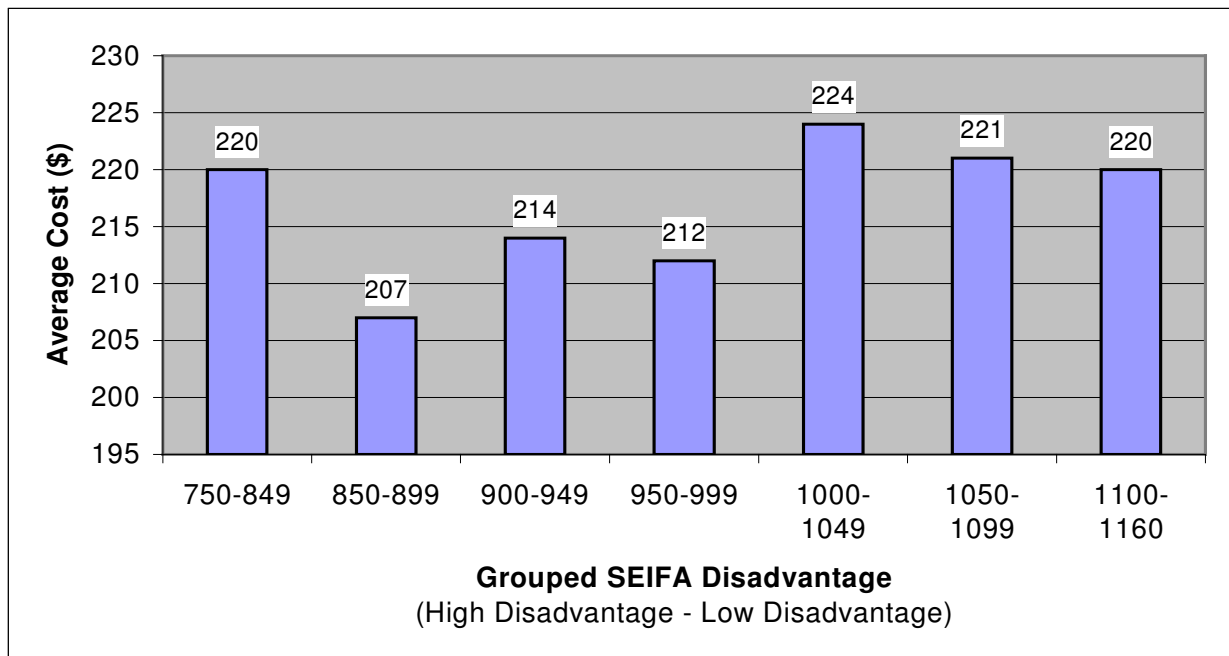
Results showed that prices also differed with socio-economic disadvantage (SEIFA). Table 1 shows the cost of the food basket in grouped SEIFA with the standard deviation. The results show that the most expensive and highest standard deviation was areas with a SEIFA score of 1000-1049, which was the 3rd most advantaged group. The lowest SEIFA and the highest SEIFA groups were similarly priced. The cheapest was areas with a SEIFA score of 850-899, which were the second most disadvantaged areas.

Table 1: The Average Cost of the Food Basket by Grouped SEIFA

Grouped SEIFA	Price (\$) (standard deviation)	No. of stores
750-849	220.35	1
850-899	206.80 (±2.7)	4
900-949	214.06 (±4.9)	7
950-999	212.37 (±9.7)	11
1000-1049	224.20 (±14.0)	4
1050-1099	220.95 (±2.6)	2
1100-1160	220.54 (±9.4)	6
Total (average)	217.04	35

Figure 1 shows a possible trend towards higher prices with increasing SEIFA, excluding the data for the store in the lowest SEIFA group. The result for the lowest SEIFA group was based on a single store (Fairfield) and therefore may not reflect the average pricing of stores in areas with this SEIFA ranking.

Figure 1: Average Cost of the Food Basket with Increasing Socio-economic Advantage



Comparison of Supermarket Chains

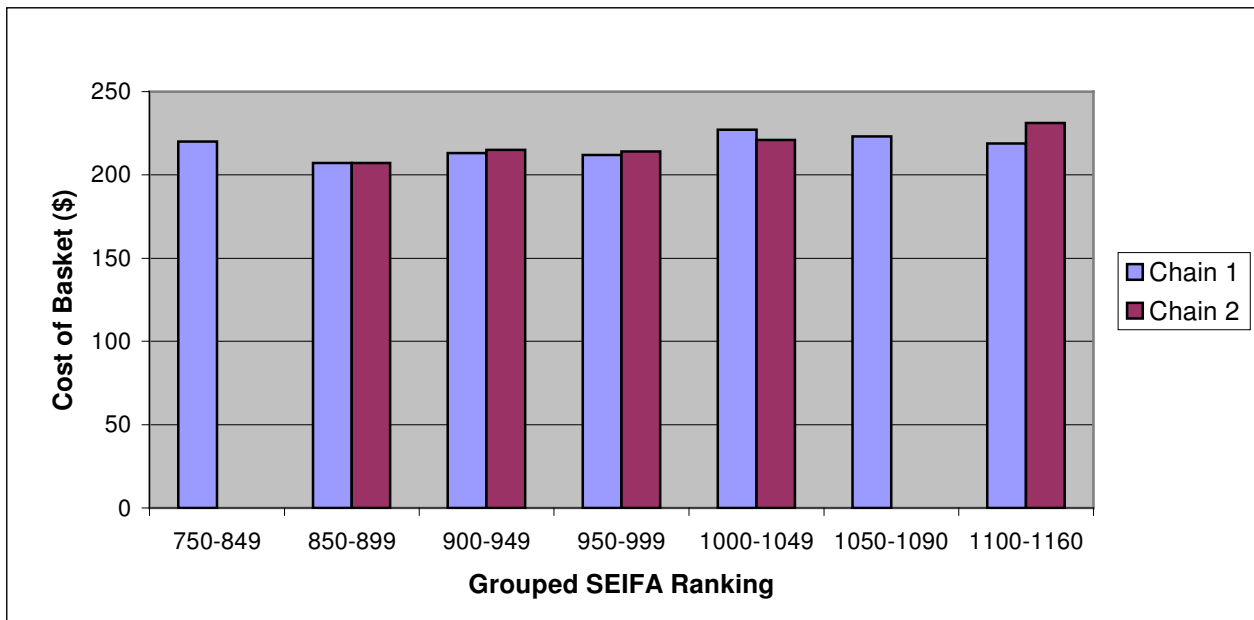
The average price and standard deviation of the *total food basket* was very similar between the two chains. Average price of Chain 1 = \$214.85 (± 7.90), average price of Chain 2 = \$216.92 (± 11.62). The possible trend towards increasing price with increasing SEIFA was also seen within the chains (Figure 2). The results from Figure 2 have been rounded up to make it easier to see trends.

In some suburbs however prices were seen to differ between each supermarket chain in the same suburb. In Richmond for example Chain 1 = \$201 and Chain 2 = \$216.

Across the two chains surveyed the most expensive suburb to purchase food was Sydney CBD Chain 2 followed by Neutral Bay Chain 2. The most expensive suburb for Chain 1 was also Neutral Bay.

Roselands Chain 2 was the least expensive suburb followed by Richmond Chain 1.

Figure 2: The Average Cost of the Food Basket Across Chain 1 & 2 - According to SEIFA



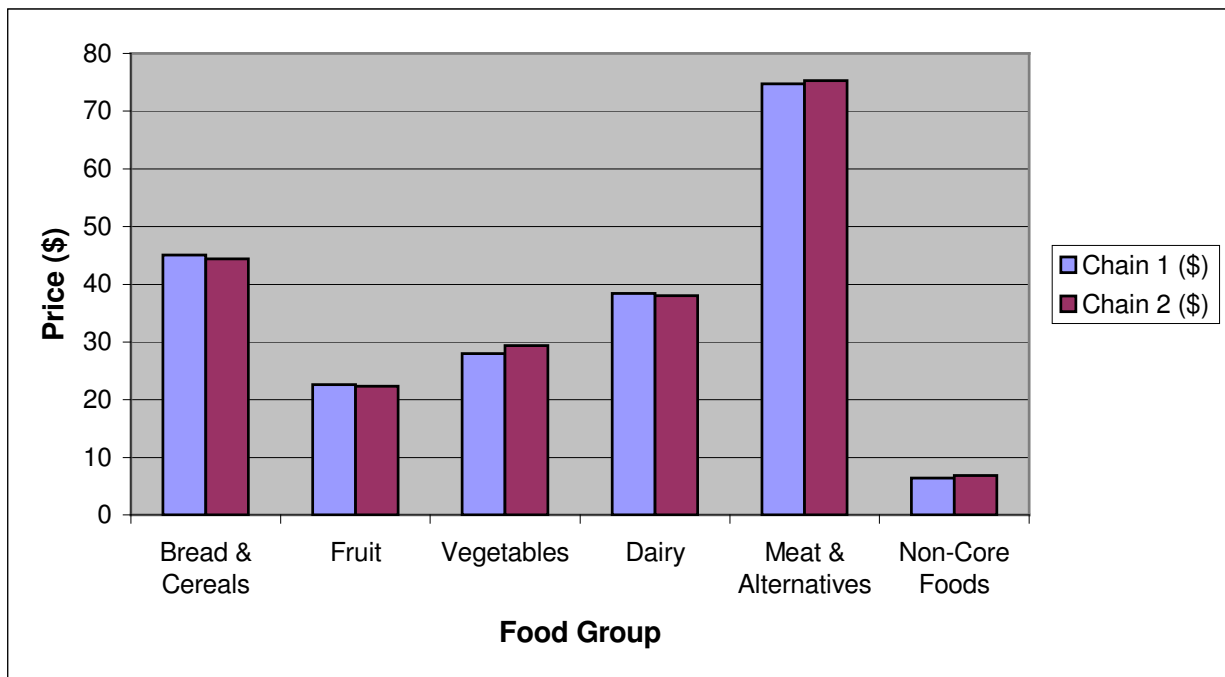
Cost of the Components of the Food Basket

A comparison was made between the different stores to determine if there were any significant prices or differences to be found across the food categories. Table 2 and Figure 3 show that for each food group both Chain 1 and 2 were similar in price.

Table 2: A Comparison Between the Costs of Food Groups in Different Chains

Food Group	Chain 1 (\$)	Chain 2 (\$)
Bread & cereals	45.06	44.41
Fruit	22.64	22.32
Vegetables	27.98	29.36
Dairy	38.39	38.03
Meat & alternatives	74.71	75.30
Non-Core foods	6.41	6.86

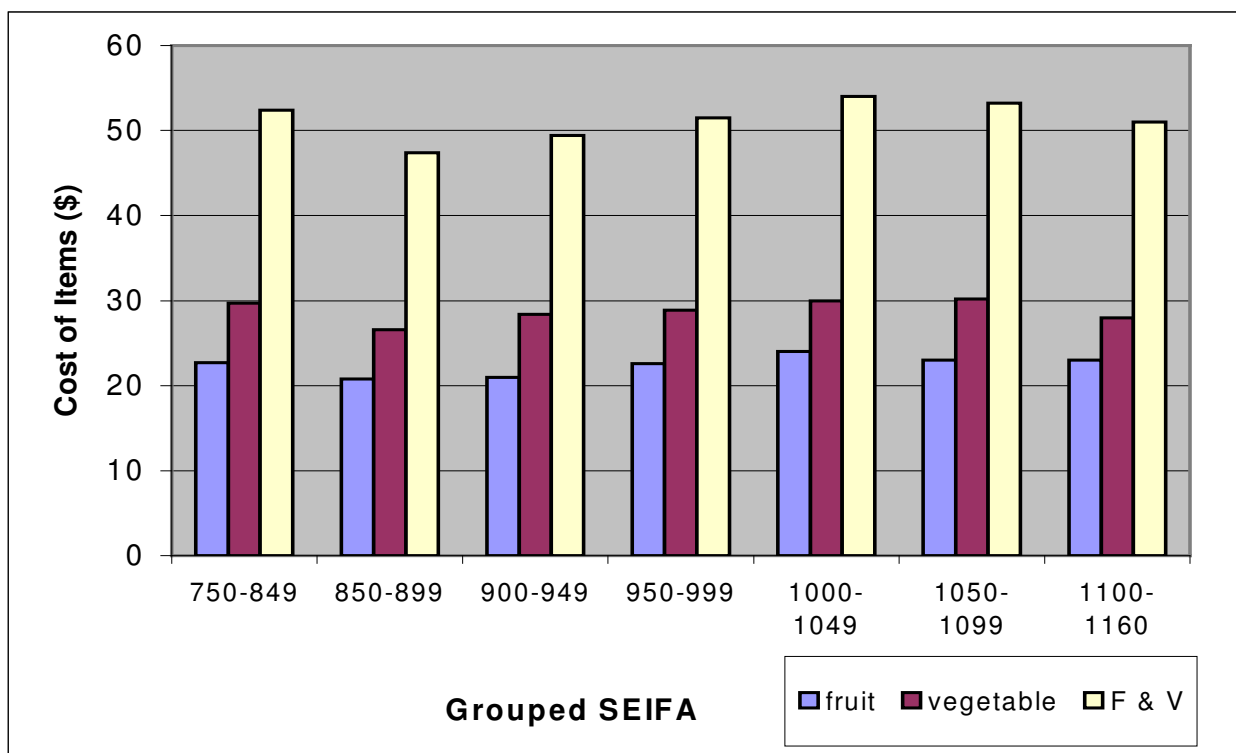
Figure 3: A Comparison Between the Cost of the Food Groups Across the Chains



Pricing of Fruit and Vegetables

The price of fruit and vegetables (Figure 4) shows the same trend as seen with the price of the *total food basket*. SEIFA grouping 1000-1049 has the highest fruit and vegetable prices and 850-899 has the lowest prices.

Figure 4: Fruit and Vegetable Prices According to Grouped SEIFA



Availability

The results in this section are based on all 37 stores, including those with entire sections not completed.

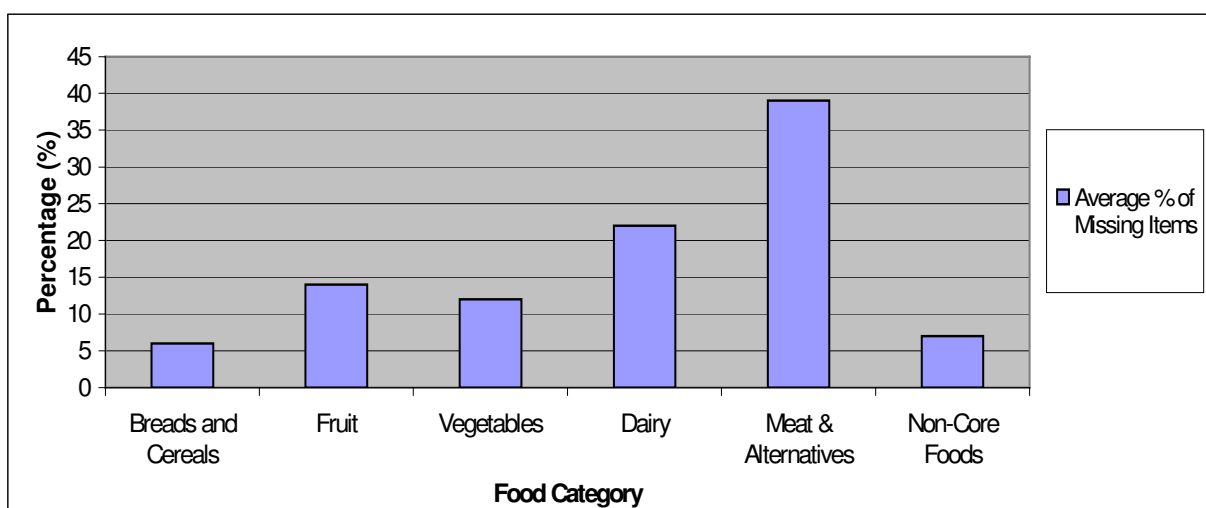
Across most of the stores there were missing items from each food group. Table 3 indicates the percentage of available items from each area (by grouped SEIFA). It was found that the percentage of products missing was higher in higher SEIFA areas.

As mentioned previously all food groups had some products missing. The food groups that were most likely to be missing were "meat & alternatives" and "dairy", as shown in Figure 5. All fruits and vegetables were generally available across both chains. The only fruit that was sometimes not available was bananas. This was due to a recent cyclone in Queensland meaning it had been hard to get bananas ever since.

Table 3: Availability of Items in the Food Basket

Grouped SEIFA	750-849	850-899	900-949	950-999	1000-1049	1050-1099	1100-1160
Average availability of items in the food basket (%)	98%	98%	99%	99%	96.5%	84%	92.5%
Range (Lowest - highest)	98%	95-100%	95-100%	97-100%	86-100%	57-100%	57-100
Total stores surveyed	1	4	7	11	4	3	7

Figure 5: Percentage of Missing Items by Food Category



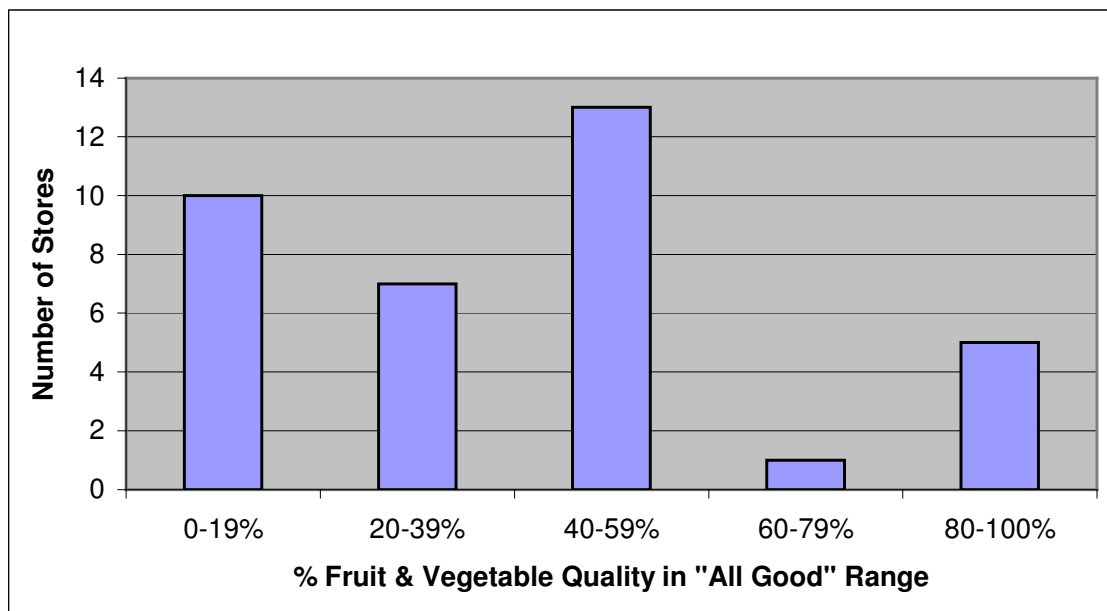
3.3 The Quality of Fruit and Vegetables

Quality

Fruit and vegetable quality was found to vary across Sydney. For detailed information on fruit and vegetable quality refer to Appendix 2 - Tables 6 and 7. Only fruit and vegetable classified as “all good” (A) and “most good” (M) are reflected in the tables because the other categories rated too insignificantly.

Figure 6 shows that for many stores only 40 –59% of fruits and vegetables were rated “all good”. St Ives and Lithgow rated the highest in quality for fruit and vegetables with 100% rated “all good”. Windsor, Sydney CBD and Glenmore Park all rated the worst with 0% in this category.

Figure 6: Visual Fruit and Vegetable Quality in Supermarkets Surveyed



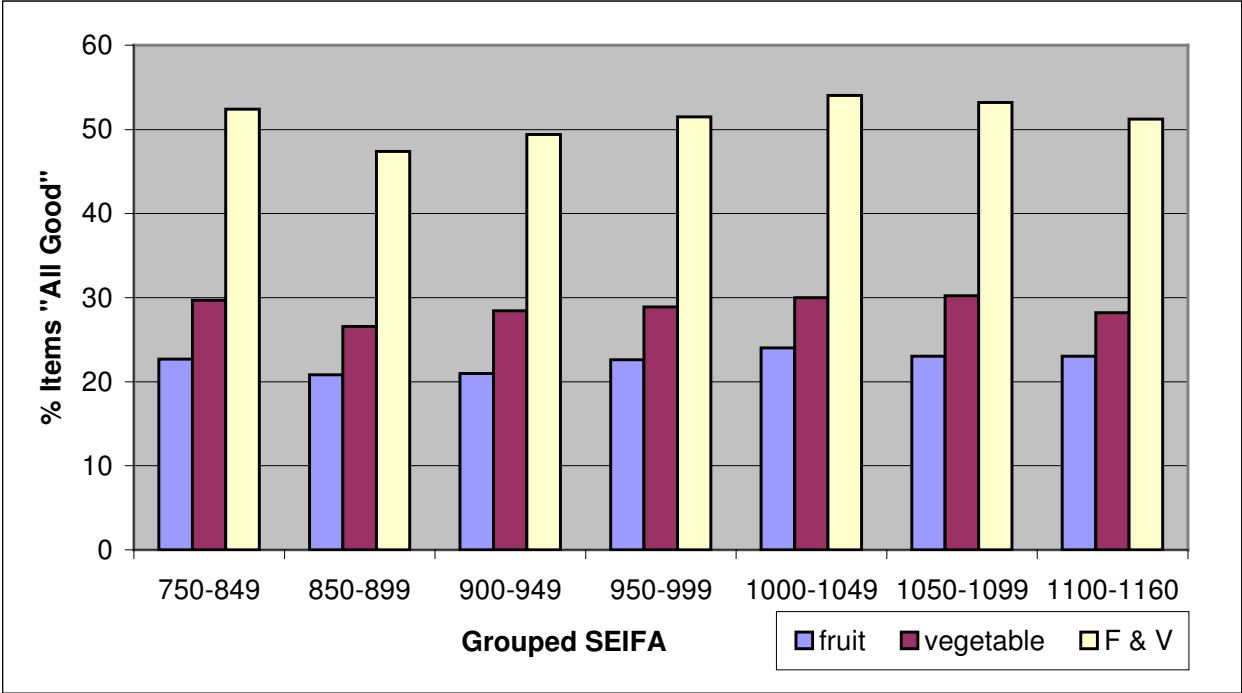
Results showed variability in quality between types of fruits and vegetables.

- Kiwifruit rated the highest in quality followed by bananas
- No fruit was rated mouldy
- Apples, mushrooms and tomatoes were most likely to be reported as aged, bruised or mouldy
- Celery and potato rated the highest in good quality vegetables
- Mushroom rated high in aged vegetables and tomatoes rated the highest in bruised vegetables
- There were only some or few vegetables that were rated as mouldy which were pumpkin, onion and mushroom.

Figure 7 shows the more advantaged groups (SEIFA 1000-1049 and 1050-1099) and the least advantaged group rated the highest overall for both fruit and vegetable quality. The lowest "All Good" ranking was in SEIFA group 850-899.

The results for the lowest SEIFA group was, as mentioned previously based on one store (Fairfield) and may not be a true reflection of stores in areas with this level of disadvantage. Excluding this result, there was a possible trend towards higher quality fruit and vegetables at higher SEIFA.

Figure 7: Fruit and Vegetable Quality Rating by Grouped SEIFA



4. Discussion

4.1 Food Cost

The results of the survey indicate that prices were not consistent across Sydney. The *total food basket* price was found to range from \$200.40 - \$243.76, a difference of over \$43.00. The average price of food basket was \$216.80. This average price was higher than that in South Western Sydney supermarkets (\$175.69 - excluding "other" category). This indicates that the average cost of a food basket has increased by about \$40.00 since September 2002. This increase in food costs would have a significant impact on the food security of the residents of Sydney.

Average Cost of Food Basket

- 2002 = \$175.69
- 2006 = \$216.80
- Difference = \$41.11

The *Financial Review Smart Investor Magazine* reports an \$11.04 increase in the cost of a typical food basket in Sydney the past two years. The Consumer Price Index (CPI) number for food in Sydney has also consistently increased from September 2002 to June 2006 (144.8, 156.4 respectively) (ABS, 2006). This increase has been mainly attributed to increased petrol prices and the drought.

The cost of food has risen significantly through 2006 to June quarter 2006 at a rate of 8.3%. This rise was largely due to fruit (ABS, 2006). The rise in fruit prices was mainly due to an increase of approximately 250% in the price of bananas (+52.0) during the June quarter 2006 because of shortages created by Cyclone Larry in March 2006. Prices also increased for citrus fruit, apples, melons and strawberries. This was due to an increase in demand for alternative fruit as consumers looked for a substitute for bananas (ABS, 2006).

While much of the price changes in 2006 can be attributed to fruit, price increases were observed across all core food groups, as illustrated in Table 4. As the table shows Fruit has seen the greatest increase while the impact on the non-core foods appears to be minimal.

Table 4: Change in Cost of Food Groups

Food Category	2002 (Lowry)(\$)	2006 (\$)	Difference (\$)
Bread & Cereals	34.96	44.74	+9.78
Fruit	10.33	22.48	+12.15
Vegetables	23.28	28.65	+5.37
Dairy	33.69	38.21	+4.52
Meat & Alternatives	67.95	75.01	+7.06
Non-Core Foods	5.44	6.64	+1.20

The variation in total basket price observed in this study was less than found in the South Western Sydney Study (\$179.59 to \$255.64¹, ie. \$76.05; Lowry, 2003). The lower variability could potentially be attributed to the fact that only supermarkets were included in this study, whereas Lowry included a range of store types including corner stores, fruit & vegetable shops and supermarkets.

Lowry indicated that corner stores are significantly more expensive than supermarkets. It also found that supermarket prices showed less variability (\$211.73 - \$236.99¹), than in this study. However, Lowry surveyed a smaller number of supermarkets (n=9), they were located in a smaller geographical area and the prices quoted are the average of each suburb and may not reflect the true range.

In regards to the overall price of the *total food basket*, the most expensive area was Sydney CBD and least expensive was Roselands. It is of concern that Sydney CBD was the most expensive area, given the number of homeless people, who are at high risk of food insecurity, living in the area.

Also of concern is the high cost of the *total food basket* in the least advantaged suburb, Fairfield. High unemployment, single parent families, low incomes and high levels of public housing are common in areas with lower SEIFA (Epidemiology Unit, SWAHS, 2001). Each of these issues contributes to the risk of food insecurity among the people living in these suburbs. The study conducted in South Australia also found stores in the 750-849 SEIFA range to be relatively expensive (Meedeniya, Smith & Carter, 2000).

Excluding the data for the store in the lowest SEIFA group, a trend towards higher prices with increasing SEIFA can be observed. This trend was not found in the South Australian study. However, the South Australian study focused on the differences between rural towns, with Adelaide grouped as one area. The price of a basket in Adelaide was considerably less than that for any of the rural areas. Interestingly Lithgow, which could be classified as a rural town, was not significantly higher than the other suburbs which were closer to Sydney.

Within and Between Chains

The average price per chain didn't vary significantly with Chain 1 = \$214.84 and Chain 2 = \$216.92. This shows that both chains have a similar price value for each item and are maintained throughout each area. The standard deviation for Chain 1 and 2 did vary slightly, Chain 1 = ± 7.90 and Chain 2 = ± 11.62 .

While the average prices were quite similar between the chains there was, in some cases, inconsistency between prices in different chains in the same suburbs. For example in Richmond (SEIFA 967.15) Chain 1 = \$201.20 and Chain 2 = \$216.002. No comparisons were made between chains in other studies.

Results like this may however have an impact on food security because some residents may have greater access to one store over another depending on the location of stores and transport routes, among other factors.

¹ Prices quoted include the "other" category.

The cost of components in the food basket, across the two chains, also didn't vary significantly. Each category (ie. breads & cereals, fruit, vegetables, dairy, meat & alternatives and non-core foods) all received similar values between the two chains. As expected "meat & alternatives" was the highest price of all food components.

4.2 Availability of Foods

Some supermarkets had a significant number of items missing from the store shelves. The South Western Sydney study also showed items missing from their surveys. Both studies found that the most common items that were missing from the shelves were the "meat & alternatives" food group followed by the "breads & cereals" and the "dairy products" group. This study found 14% more items missing from the "meat & alternatives" group, than the South Western Sydney study.

From the "meat & alternatives" food group, tinned meat and vegetables/onion and 500g beef stir-fry strips were found to be the most commonly missing item. This could be an area of concern as the tinned meat could be mostly missing due to the position located on shelves and this could have an affect of the availability of this product. The 500g beef was the most commonly missing item as well due to the sizing of the package.

Breads and cereals were 17% more likely to be available than in the South Western Sydney study. The other items we found to be similar in both studies.

All fruit and vegetables were available in all stores, excluding bananas. This was due to a cyclone in the Queensland region prior to the survey being conducted. There have been no problems with the availability of fruit and vegetables in previous studies. There has however been a link with greater variety of fruit and vegetables being available in larger shops, less remote locations, towns of larger population size, towns with greater socio-economic advantage, as well as shops with a more recent fruit and vegetable delivery (Meedeniya, Smith & Carter, 2000). In previous studies fruit and vegetable shops were shown to contain the most varieties of fruits and vegetables although supermarkets do have a wide variety also (Lowry, 2003).

Interestingly perhaps this study showed that the higher socio economic areas had a higher percentage of overall items missing. The "meat & alternatives" group followed by the "dairy products" group had the highest percentage missing in these areas. When foods that are key sources of nutrients are difficult to find, it is of concern, however residents in higher socio-economic areas would probably have the means to source these foods from other places. If this were a lower socio-economic area there would be a greater concern about access because residents may be less able to travel or pay a higher price to access these foods elsewhere.

The researchers in this study suggest that some of the missing items may in fact have been the result of volunteers being unable to find items in the supermarket. Volunteers selected

the store/s they were able to visit and it was assumed that they had a familiarity with the store and the layout. This may not have been the case for all volunteers.

In addition, some volunteers ran out of time to complete the survey. In future surveys it would be beneficial to suggest that volunteers have a practice run to familiarise themselves with the list and store location of items. This may result in reduced numbers of items being found to be unavailable.

4.3 Fruit and Vegetable Quality

Fruits and vegetables were generally found not to be of the highest quality. Only five supermarkets (14%) rated in the 80-85% "all good" ranking. In the South Australia study, fruit and vegetable quality was generally rated "all good" amongst all the shops (Meedeniya, Smith & Carter, 2000).

In the South Western Sydney study, fruit and vegetable shops were found to provide the best overall quality of fruits and vegetables when compared with supermarket chains and corner stores (Lowry 2003). The 2003 Lowry study also found better quality fruit and vegetables, than the current study, in supermarkets with 60% (9) of supermarkets rated "all good" for fruit and vegetable quality.

This could indicate that there has been a decline of fresh fruit and vegetable quality over time. This could also indicate a difference in time from fruit and vegetable delivery. In the South Australian study, time from delivery was the primary indicator of fruit and vegetable quality (Meedeniya, Smith & Carter, 2000). No attempt to determine the time of delivery was made in this study and this should be considered for any future studies.

The difference in quality could also indicate differences in standards between the volunteer surveyors. While a standardised tool was used to assess quality, it was still a subjective measure and some variability between surveyors would exist. Again a practice run through or training would be beneficial for more accurate results.

Survey results showed that fruit and vegetable quality did vary across Sydney. The fruit and vegetable quality at Roselands, the cheapest store, had three fruits rated as "all good" and five vegetables rating "all good". However, Sydney CBD, the most expensive shop, didn't receive any ratings in the "all good" category for either fruit or vegetables. It is positive to note however that, from the findings of the survey, supermarkets can provide high quality fruit and vegetables at inexpensive prices.

Also interesting to note was that Lithgow, which could be classified as a rural town, had 100% of fruit and vegetables rated as "all good". In Queensland and the Northern Territory, a trend towards poorer quality fruit and vegetables in more rural and remote areas was observed (Leonard, Zlotkowski, Harrison and Bonehill, 1997; Northern Territory Government, 2003). The higher quality in Lithgow could be due to the store being part of a large supermarket chain and its close proximity to Sydney.

Findings did indicate that quality varied across areas of different socio-economic status. Again, a possible trend towards poorer fruit and vegetable quality with increasing disadvantage was observed.

The exception being the store with the lowest SEIFA having high quality fruit and vegetables. The poor quality of fruit and vegetables in areas with low SES could potentially have a significant impact in these areas. Poor quality could lead to a decline of fruit and vegetable consumption, which will lead to further complications regarding overall health.

4.4 Limitations

Several limitations were found when conducting the survey:

- Special prices were not listed, only regular prices. In some cases the only price available was the special.
- There were no generic brands chosen when conducting the survey, but sometimes generic brands were the only items available.
- There were a number of incomplete surveys. This was probably because of the time taken to complete the survey. Previous studies had indicated that surveys would take 30min-1 hr (Lowry, 2003). The time taken per store was 1 – 1.5 hours. This resulted in volunteers running out of time and doing fewer supermarkets than originally planned. However, those volunteers completing a number of stores found the time taken decreased to about 30 minutes / store, due to the similar layouts of stores in the same chain. In the future it would be wise to recommend a practice survey so the volunteers are familiar with the process and not rushed or do not forget certain items.
- There was an issue with different sizes of products particularly with the meat; it should be to nearest kilogram instead of 500g as not all meat comes in exactly 500 grams. Therefore because of the various sizes the meat was averaged out with their corresponding supermarket at average retail price so prices were not skewed.
- While cost and variety were easy to measure, the measure of quality was more subjective due to the fruit and vegetable tool. The quality score was based on a visual measure of quality and did not include eating quality.
- There were no recordings of fruit and vegetable delivery days. This may cause differences in the quality of the fruit and vegetable according to the days delivered.

4.5 Recommendations

1. Future surveys should address the limitations outlined in this survey report.
2. Data to be made available for individual sites as well as grouped SEIFA data.
3. Survey to be completed in a few years time to see if any changes have been made to the food security status of the local communities.
4. Further research into generic foods; compare if there is a difference in price, quality and variety.
5. Compare fruit and vegetable quality from all different store types, eg. corner store, fruit and vegetable shop, as the supermarket fruit and vegetables generally rated quite poorly.
6. Undertake advocacy regarding the possible decline in the quality of fruit and vegetables in supermarkets in areas of increasing disadvantage.
7. Conduct further research into prices in suburbs with the lowest SEIFA scores (750 –849).

5. Conclusions

There has been a substantial increase in the price of food in Sydney since 2002. This would have a significant impact on the food security of vulnerable groups in Sydney. Price, availability of food and the quality of fruit and vegetables provided in supermarkets do vary considerably across Sydney. The pricing of foods does impact on the food security of people living Sydney, especially those in the most disadvantaged areas (lowest SEIFA) and homeless people living in the Sydney CBD. The quality of fruit and vegetables would also impact, especially on people living in generally less advantaged areas. Supermarkets need to consider the development of policies which take into consideration the socio-economic status of the area when determining pricing policy and provide consistently high quality fruit and vegetables across all stores.

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7. Appendices

Appendix 1: The Market Basket Survey Tool

MARKET BASKET SURVEY

Purpose

To assess the difference between cost of staples and other food products at the same supermarket at different locations. Also to look at the difference in quality of some fruit and vegetables.

Basket

Based on previous MBS, based on feeding a family of 6 for 2 weeks.

Plan

- All to complete on same day (Thursday evening)
- Need to have standardisation for product brands to be able to compare
- Cost of regular price / don't record any sale prices
- If designated brand is not available, note cheapest price of non-generic brand and note brand

Quality

- Collation of a small list of fruit and vegetables to compare quality between stores.
- Good, Aged, Bruised, Mouldy
- All, Most, Half, Some, Few

MARKET BASKET SURVEY

Store Details

Date: _____

Store: _____

Location: _____

Item	Size To Look For	Size Found	Cost	Comments
BREADS, CEREALS				
Loaf of white bread	750g			
Loaf of wholemeal bread	750g			
Loaf of wholegrain bread	750g			
White Lebanese Bread	500-550g			
White flour, plain	2kg			
Wholemeal flour, plain	1kg			
Weetbix	750g			
Traditional/Rolled oats	750g			
White rice	1kg			
Basmati rice	1 kg			
Brown rice	1kg			
Tinned spaghetti	420g			
Instant noodles (5 pk)	425g			
Sao biscuits	250g			
Pasta	500g			
Crumpets	300g			
Untoasted muesli	750g			
FRUIT				
Apples	Per kg			
Oranges	Per kg			
Bananas	Per kg			
Tinned fruit salad, in natural juice	440g			
Orange juice, 100%, no added sugar, non-refrigerated	2 litre			
VEGETABLES				
Onion	1kg			
Potato	1kg			
Pumpkin	1kg			
Cabbage	1ea			

Item	Size To Look For	Size Found	Cost	Comments
Tomato	1kg			
Lettuce	Per			
Carrot	1kg			
Tinned peas	420g			
Tinned beetroot	450g			
Frozen peas	1kg			
Tinned tomatoes	400g			
Tinned Kidney beans	400g			
Tinned baked beans	425g			
Tinned lentils	400g			
DAIRY				
Fresh full cream milk	2 litres			
Fresh reduced fat milk	2 litres			
Cheese, Cheddar	500g			
Skim milk powder	1kg			
Full cream milk powder	750g			
Longlife (UHT) milk, full cream	1 litre			
Yoghurt – regular	1kg			
Yoghurt – reduced fat	1kg			
Soy Milk	1 litre			
MEAT & ALTERNATIVES				
Lean beef stir-fry strips	500g			
Tinned corn beef	340g			
Tinned meat & vegetables/onion	450g			
Sliced ham	1kg			
Mince (beef) fresh or frozen	1kg			
Rump steak, fresh or frozen	1kg			
Sausages	1kg			
Frozen chicken (or chicken pieces)	1.5 Kg			
Eggs, large (1 doz.)	660g			
Tinned tuna	425g			
NON-CORE FOODS				
Margarine (mono or polyunsaturated)	500g			
Oil, Canola only	750ml			
Sugar, white	1kg			

Quality of Fruits and Vegetables

	Good					Aged					Bruised					Mouldy					
	A	M	H	S	F	A	M	H	S	F	A	M	H	S	F	A	M	H	S	F	
<i>Fruit</i>																					
Apple																					
Banana																					
Kiwifruit																					
Melon																					
Orange																					
Pear																					
Other																					
<i>Vegetable</i>																					
Broccoli																					
Cabbage																					
Capsicums																					
Carrot																					
Celery																					
Cucumber																					
Green beans																					
Lettuce																					
Mushroom																					
Onion																					
Potato																					
Pumpkin																					
Tomato																					
Other																					

KEY

Good: None of the characteristics listed below are present

Aged: Softness, discolouration, wilting, limpness, skin wrinkling (generally fruit still edible)

Bruised: Bruising, breakage of skin (only portions of fruit still edible)

Mouldy: Mould present, rotting (fruit not edible)

KEY

A = All

M = Most

H = Half

S = Some

F = Few

Appendix 2: Table 5 and 6 Fruit and Vegetable Quality

Table 5: Total Sum of Good Fruit Quality

Apple	
A	9
M	20
Banana	
A	18
M	8
Kiwifruit	
A	21
M	11
Melon	
A	14
M	11
Orange	
A	17
M	15
Pear	
A	13
M	12

Table 6: Total Sum of Good Vegetable Quality

Broccoli	
A	20
M	11
Cabbage	
A	19
M	14
Capsicums	
A	14
M	14
Carrot	
A	18
M	12
Celery	
A	22
M	9
Cucumber	
A	22
M	5
Green beans	
A	13
M	11
Lettuce	
A	18
M	10
Mushroom	
A	13
M	11
Onion	
A	18
M	15
Potato	
A	22
M	9
Pumpkin	
A	19
M	11
Tomato	
A	13
M	15

