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# Growing Farmers' Markets: Measuring the Competitiveness of the Byron Farmers' Market With Other Local Food Sources

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**Growing Farmers' Markets: Measuring the competitiveness of the Byron Farmers'  
Market with other local food sources**

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Submitted in partial fulfillment of the requirements for Australia: Sustainability and  
Environmental Action, SIT Study Abroad, Spring 2011

## ISP Ethics Review

This ISP paper by \_\_\_\_\_Audrey Gross\_\_\_\_\_ (student) has  
been reviewed by \_Peter Brennan\_\_\_\_\_ (Academic Director)  
and does/does not\* conform to the ethical standards of the local community and the  
ethical and academic standards outlined in the SIT student and AD handbooks.

\*This paper does not conform to standards for the following reasons:

Academic Director: Peter Brennan

Signature:

Program: Australia: Sustainability and Environmental Action

Date: May 14<sup>th</sup> 2011

## **Abstract**

Farmers' markets are growing across the world at an exponential rate. However, there is little research that challenges the competitiveness of these farmers' markets in competing with other food distribution locations, including supermarkets and local food stores. The following report focuses on using the principles of perfect competition to evaluate the competitiveness of the Byron Farmers' Market with other local food sources in Byron Bay, NSW.

Data was collected through 120 consumer surveys (60 from the Farmers' Market, 30 from Woolworths, and 30 from local food stores: Santos, Fundamentals, and Green Garage), 31 stallholder surveys from the Farmers' Market, price information on 17 products at stores in the area, and 4 interviews with individuals from food distribution locations. The data was then analyzed, with results looking into a variety of topics, including the important factors that influence consumers in their purchasing decisions, how consumers view products from different stores, and the perceptions of competitiveness in the market by local food sources. The main conclusion from the data is that while the Farmers' Market is a vital part of the local food system, the Farmers' Market faces a variety of barriers that it needs to overcome in order to become more directly competitive with the other food distribution locations.

Through increased consumer education and eliminating some of the common barriers that prevent producers and consumers from getting involved in the farmers' market, the market can continue to grow and become more competitive with the larger food stores in Byron. In addition, the research finds that competitiveness in the marketplace may not be the best quantifier of success for a farmers' market. However, measuring the competitiveness of the market and analyzing the benefits and barriers of such a market, produces vital information that can assist other farmers' markets as they continue to grow and evaluate their role in the community.

## **ISP Topic Codes**

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## **Keywords**

farmers' market, local food, market competition, agriculture, environmental economics

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### **Abbreviations**

BFMA: Byron Farmers' Market Association

FM: Farmers' Market

SM: Supermarket

LF: Local food store

Fundies: Fundamentals Food Store

Woolies: Woolworths supermarket

### **3. Introduction**

#### **3.1 Background of Farmers' Markets**

According to the Australian Farmers' Markets Association, a farmers' market is defined as "a predominantly fresh food market that operates regularly within a community, at a focal public location that provides a suitable environment for farmers and food producers to sell farm-origin and associated value-added processed food products directly to customers" (Australian Farmers' Market Association 2010).

Farmers' markets have been around for almost 10,000 years, where farmers would sell their excess produce to other farmers at the end of the growing season (Farmers' Markets 2011). As farming became more intensive and urbanization took place, many farmers' markets disappeared. In particular, after the industrial revolution and World War II, agriculture became more industrialized, resulting in the distancing of consumers from farmers. Additionally, stricter health codes, increased processing of food, and the increase of retail supermarkets (which are now the primary source of food for households), led to a separation of consumers from their food and its direct source (Coster & Kennon 2005, p. 1). However, there has recently been an increasing demand from some consumers, much as a result of distrust in the current system, to know where their food comes from, to guarantee its freshness and quality (Coster & Kennon 2005, p. 1). As a result, farmers' markets have sprouted across the country and the globe, growing at an exponential rate. Jane Black, a writer for the Washington Post, describes results that found that "over the past year, the number [of markets in the U.S.] has grown by 589 markets, or 12.6 percent, from 4,685 in 2008 to 5,274 in 2009" (Black 2009). Although farmers' markets in Australia were virtually unknown into the early-1990s, they have grown at a similar rate since then (Singer & Mason 2006, p. 125). In 2005, the Australian Farmers' Market Association recorded 76 markets in Australia, and as of 2010, they estimated that there were over 150 (Australian Farmers' Market Association 2010). With the growth of farmers' markets, many opinions have developed regarding the success of these markets and their role in the community.

#### **3.2 Benefits of Farmers' Markets**

The benefits of farmers' markets are described as being very wide-spread with few detrimental effects. The benefits can be split into three different categories: environmental, economic, and social. These three categories are often analyzed together as the triple-bottom line, which refers to the factors that offer a base for sustainability and its practices.

### **3.2.1 Environmental Benefits**

There are a large number of environmental benefits of farmers' markets. Firstly, "Studies have shown that the average shopping basket of food in Australia travels over 70,000 kilometers, or nearly twice the circumference of the Earth before it is purchased" (Singer & Mason 2006). Farmers' markets are able to reduce the amount of fossil fuels used in transportation and can shorten the food supply chain between producer and consumer. In addition to reducing the number of miles that the food travels between the farm and the plate, farmers' markets also reduce the amount of fossil fuels used to process, package, and sell the food: In the U.S., 4 quadrillion Btus of fossil fuel are consumed each year to complete these processes (Bomford 2010, p. 122). Finally, farmers' markets support small-scale farming versus large farms, many of which grow organic products, which have a variety of benefits for the soil and the products (Byron Shire Council 2007).

### **3.2.2 Economic Benefits**

There are a variety of economic benefits for the farmers, consumers, and the general community in which a farmers' market resides. Firstly, farmers are able to receive a larger proportion of the money that shoppers spend on food at the market. For example, one study titled 'Farmers' Markets: The small business counter-revolution in food processing and retailing' found that farmers today only receive around 10 percent of the money that consumers spend on food due to the power of supermarkets, while fifty years ago farmers received 45-60 percent (Guthrie, Guthrie, & Lawson 2006). At the farmers' markets, with farmers selling their own products, the money travels directly from the consumer to the producer. In addition, the study completed in New Zealand found that farmers' markets provide farmers with an additional outlet to sell their products at and are able to provide them with a fairly consistent cash-flow (Guthrie, Guthrie, & Lawson 2006). Farmers' markets are also able to help the local economy, because money from the markets stays within the local economy, becoming reinvested in the community and resulting in the multiplier effect. In fact, research completed at the Otago Farmers' Market found that "circulated as local wages or spent on local products, every \$10 spent on locally produced food is worth \$24 to the local area. In contrast, \$10 spent at a supermarket generates just \$14" (Guthrie, Guthrie, & Lawson 2006). Finally, a report done on three farmers' markets in Victoria found that when customers visit town for the farmers' market, they actually end up supporting other businesses in the area, including other food stores; on average, 23% of consumers did other food shopping within the area while in town (Coster & Kennon 2005, p.27).

### **3.2.3 Social Benefits**

Farmers' Markets have an array of social benefits, particularly benefiting the community in which they reside. One study found that consumers have ten times as many conversations at a farmers' market versus at a supermarket (Singer & Mason 2006, p. 125). The market also creates relationships between the grower and the consumer, and raises awareness and educates citizens regarding many important environmental problems (Byron Shire Council 2007). Additionally, Jan Adams, president of the Australian Farmers' Market Association, argues that "farmers' markets can revitalize town and public space, regenerate the community spirit of the host community, make rural and urban links, and benefit health" (Coster & Kennon 2005).

### **3.3 The Byron Farmers' Market**

The first Byron Farmers' Market (BFM) took place in Byron on December 5<sup>th</sup>, 2002. Since then, the market has grown, resulting in the addition of another market in the Shire in Bangalow in 2004 (Byron Shire Council 2007). The Byron Farmers' Market is currently made up of 59 stands, ranging from cane juice, to fresh veggies, to bakery items, and fresh-cut flowers (Byron Farmers' Market 2011). Although the market is not an organic market, a large proportion of the stalls provide certified organic produce and many others use organic processes but are not certified. The market runs every Thursday morning from 7AM-11AM and several thousand people make their way through the market each week (Byron Farmers' Market, 2011). The Byron Farmers' Market Association (BMFA) believes that markets are fueled by consumers making well-educated choices to purchase local foods (Byron Farmers' Market 2010). The association also states that it "guarantees product integrity and strives to supply a balanced market place for its customers while creating a sustainable, viable business venture for the members" (Byron Farmers' Market, 2010). However, there has been little research completed on how well the farmers' market is completing these goals. Two reports have been written on the market, but neither of these reports focuses on quantifying the success of the market through analyzing data both from within the market and outside of the market (at other shopping locations). There is also a lack of research on improvements to the market and future directions for the market so as to secure its position in the marketplace.

The two reports released by the Byron Shire Sustainability Office in 2007 focus on the performance of the current market and the potential for expansion or addition of farmers' markets in the Shire, both of which collected raw data from consumers and farmers at the market. The first report concluded that the markets are highly successful and that based on increase patronage, an increasing number of stalls at the market, and general support from the

community, there was demand for an additional market (Byron Shire Council 2007). The second report, focused on the potential addition of markets in the Shire found that “Though it appears that farmers’ markets are competitors to supermarkets and other outlets, many retailers agree that they complement each other by increasing total sale volumes on market days” (Byron Shire Council 2007). Although these two reports were able to gather important information on the market, the report fails to address how competitive the farmers’ market is with ‘supermarkets and other outlets’ and the role that the market plays in the community food system. The report mentions that it appears that the market is competitive, but with little factual evidence to back up such a claim, the argument is not well-rooted, which will make it difficult to illustrate the need for the growth of the current market or the potential expansion of the market (and may help to explain why an additional market was never formed after the reports were released).

In addition, a previous research project, titled “The Importance of Organic Agriculture and Local Food in the Battle against Climate Change: A Case Study of the Northern Rivers Region, New South Wales” began some of the research into general improvements needed at the Byron Farmers’ Market to increase their success. The recommendations from the study include increasing the convenience for consumers, diversity of food, marketing, and consumer education regarding organic agriculture (Newman 2009, p.31-33). However, specific research on the competitiveness of the Farmers’ Market has not previously been conducted, making this research necessary to evaluate the Market’s success and potential in the food marketplace.

### **3.4 Perfect Competition in a Market**

Perfect competition is defined as “an idealized market structure in which there are large numbers of both buyers and sellers, all of them small, so that they act as price takers” (Jackson, McIver, McConnell, & Brue 1998, p. 26:1). The properties of perfect competition are:

- Infinite buyers in the market: No entry/exit barriers for more consumers and all consumers are able to participate in the market
  - Infinite sellers in the market: no cap on the number of sellers at the market/no entry or exit barriers for new sellers who want to join the market
  - Availability of products: the products are available at all stores in the market
  - Homogeneous products: the products are substitutes for one another and are viewed by consumers as being the same products
  - Perfect information: consumers are aware of costs and can easily compare them between the markets
- (Jackson, McIver, McConnell, & Brue 1998, p. 26:1).

Although perfect competition is virtually impossible in the actual marketplace, its standards are used to help determine the competitiveness of a marketplace and how different sellers interact within the marketplace. However, there has been very little research completed on farmers' markets and perfect competition, which could be used as a way to identify how competitive such markets can be, and the place that they hold, in the food market.

### **3.5 Application of Competition to Farmers' Markets**

Several of the principles of perfect competition have been applied to previous research on farmers' markets, which are analyzed and described below.

#### **3.5.1 Consumer Behavior and Perceptions of Farmers' Markets**

Several previous studies have looked at consumer behavior and the perceptions of farmers' markets. For example, a study done in San Luis Obispo County, California, compared consumer opinions of farmers' market products with supermarket products and found that,

Consumers perceive that farmers' market produce is fresher looking, a higher-quality product, a better value for the money, more reasonably priced, more likely to be grown in their country, more likely to be locally grown, and more likely to be good for the environment when compared to supermarket produce. However, many consumers do not shop at farmers' markets due to a lack of convenience (Wolf, Spittler & Ahern 2005).

It is important to understand consumers' perceptions of how farmers' market products compare with other products, as if consumers do not view the products as being perfect substitutes, then the products are not homogenous, which is one of the principles of perfect competition. Therefore, understanding the Byron Farmers' Market and how consumers perceive its products is critical to determining if the Market is competitive.

A study has been completed in the Northern Rivers area, titled "Consumer awareness and behaviour survey relating to production, distribution, and consumption of local foods" (Parker 2010). The research was completed in the Northern Rivers area through 500 phone surveys with local consumers. One of the key findings from this study was that over 63% of respondents bought their fresh fruit and vegetables from an area supermarket, compared with 43% at their greengrocer, and 32% at farmers' markets (Parker 2010). In addition, consumers identified freshness and quality as the two most important factors in determining where they bought their fresh food from, while convenience, price, and opening hours were considered to be fairly unimportant (Parker 2010). However, the research states that the importance of convenience and price were likely downplayed by consumers (Parker 2010). This research is relevant, because it is important for the Market to understand where consumers are purchasing various products from and what factors are the most influential in

determining where they go grocery shopping at. This is critical, because the Farmers' Market must understand the barriers and benefits for consumers and producers of the Farmers' Market, so that such barriers can be overcome and benefits promoted. If such can be determined, then there is the opportunity to create a new consumer base for a farmers' market, shifting consumers from more traditional grocery stores to the market.

### **3.5.2 The Impact of Pricing**

In addition, previous research has been conducted on pricing differences between farmers' markets and local supermarkets. For example, at 15 difference certified markets in California, price savings were found among consumers at all of the markets (Sommer, Wing & Aitkens 1980). Additionally, one study was completed in New Zealand that found that at the Whangarei farmers' market in New Zealand, prices were typically 50-75% lower than those at supermarkets (Guthrie, Guthrie, & Lawson 2006). Yet, these results should not be transferred to the Byron Farmers' Market, due to differences in crops and their seasons, the availability of products, and the supermarkets and local food stores in which the market competes with, resulting in the need for research on the price differences between food sources. This research is necessary, because understanding how prices compare across the marketplace, is important to understand how the market can compete in the food market. Currently, many believe that Woolworths and Coles have a duopoly on the food market in Australia. In fact, according to IBIS, "25 cents out of every \$1 spent in Australian retailers is spent in either Woolworths or Coles" (Lee 2009). Additionally, Coles and Woolworths are currently in a price war, with Coles recently dropping its prices on over 5000 store items (Carswell 2011). With Woolworths already beginning to follow suit, will farmers' markets be able to stay competitive with the supermarkets as prices fall?

In relation to food prices, some argue that prices in the supermarkets and local food stores are irrelevant, because the main competition at the farmers' market is within the market itself. For example, research completed at three farmers' markets in Victoria found that the main competition for farmers' market was with other markets, for both customers and vendors (Coster & Kennon 2005, p. 13). Additionally, at the Whangarei farmers' market, research found that "the market retailers ignore supermarket prices, because the competition within the market itself is enough to set fair prices" (Guthrie, Guthrie, & Lawson 2006). However, similar to the above, extrapolating to the Byron Farmers' Market is not appropriate, as markets can have a very different role in the food distribution system (and potentially be more competitive), based on the size of the market, the type of products sold at the market,

the market's history, and its consumer base. Therefore, there is the need for data collection on the competitiveness of the Byron Farmers' Market with other local food sources.

### **3.6 Study Goal and Justification of Research**

The concept sustainability means the capacity to continue the use of something so that it can be continually used at a safe level and never depleted. Although it is impossible for an action to be entirely sustainable, as human use of resources results in its consumption, sustainability is consuming at a level in which a resource can continue to thrive and maintain its presence at a continuous level. Sustainability does not just refer to the use of resources though—it refers to lifestyles, politics, development, and the economy—all systems that require homeostasis, to maintain a healthy balance. The competitiveness of farmers' markets fits very closely into this definition. Farmers' markets encourage the sustainability of the natural environment, the community, and the consumers and producers that participate in them. Analyzing the competitiveness of the Byron Farmers' Market will help to determine how sustainable the farmers' market is and how the Market can continue to work towards transferring our current food system and the culture that it creates.

The study goal of this research is to determine the factors that influence consumers and producers to contribute to the Byron Farmers' Market system versus other food sources in the Byron area so as to measure the competitiveness of the market. This research is justified, because understanding the competitiveness of the farmers' market is an excellent measure of the current success of the market. Further, in the case that the Market is not competitive with other food options, it is critical that the Market understands the potential barriers that prevent consumers and producers from seeing the Farmers' Market as a direct competitor. Such information can then also be passed on to other farmers' markets to ensure their longevity as food providers in their local communities.

## **4. Methodology**

### **4.1 Research Location**

This study was conducted within the Byron Shire of the Northern Rivers Region of New South Wales. The Byron Shire is a particularly fertile area, with a large amount at stake in the agricultural sector. According to the Byron Shire Council, “one in twelve working people in this region are employed in the agriculture sector” (BSC 2009). In addition, according to the Byron Shire Agricultural Census, between 1999 and 2000, the gross value of agricultural commodities produced was \$57.5 million and there are currently over 184 producers within Byron Shire, with 2827 Ha of crops being cultivated (BSC 2009, p. 49). As the above facts illustrate, the Byron Shire is very reliant on the agricultural industry, which makes it a very appropriate area to study the competitiveness of the farmers’ market.

To focus on food sources within the Byron area, I chose to focus my data collection on the three major types of food stores in Byron: the supermarket, local food stores, and the farmers’ market. In these categories, Woolworths served as the area’s supermarket; Santos Food store, Green Garage, and Fundamentals Food store served as the area’s local food stores; and the Byron Farmers’ Market served as the area’s farmers’ market. These different categories represent the main options that consumers have to choose from when purchasing fresh food within the area.

### **4.2 Survey Collection**

Surveys were conducted in order to collect both quantitative and qualitative data on the various food distribution locations and the consumers who shop at their stores. As the main focus of the research is on the Farmers’ Market and its competitiveness, data collection was slanted towards information directly from the Farmers’ Market. Two different surveys were created which aimed to gain information from both the producers and the consumers.

#### **4.2.1 Stallholder Survey**

The survey was created in order to gather information on the farmers who sell at the Farmers’ Market, their pricing and competition, and perceptions of products from the Farmers’ Market. Overall, the goal was to gain information on the products that make up the Market and the farmers who sell them, so as to better understand how the Market fits into the food system. The same survey (in appendices) was distributed to all farmers at each of their stalls on April 14<sup>th</sup> between 7-8AM (the beginning of the market). The stallholders either had the option of filling it out during the market that week before they were collected at 11AM or taking them home to complete them and then bringing them back to the market the following

week. Overall, 59 surveys were handed out (as there are 59 stalls at the market), and 31 surveys were collected.

#### **4.2.2 Consumer Survey**

The survey was formulated to identify current purchasing behaviors by consumers, what influences these behaviors, and to identify barriers that may prevent consumers from purchasing more products from the Farmers' Market. Overall, the survey's purpose was to gather data from consumers that could help to analyze perceptions of the Farmers' Market in relation to other food sources in order to determine its competitiveness. The survey also asked for a range of demographic data in order to better understand the various consumer bases and their personal needs for purchasing food. The same survey (in appendices) was distributed at each of the selected locations.

As the study's emphasis was on analyzing the competitiveness of farmers' markets with other food sources, 120 total surveys were collected, with 60 from the Farmers' Market and 60 from other food sources. In order to gain an accurate portrayal of consumers, 10 surveys were collected from each of the three major local food stores in the area (Santos Food store, Fundamentals Food store, and Green Garage) for a total of 30 surveys, and 30 surveys were collected from Woolworth's, the supermarket in the Byron area. Before survey collection began, all of the stores were contacted and their permission was gained to survey consumers in the entrance area to their stores. Surveys were conducted orally when possible, although many consumers preferred to fill out the one-sided survey individually on a clipboard. Survey participants were selected at random; with new targets being selected after the previous survey was completed or after a target declined participation in the survey. This method of data collection was chosen so as to provide unbiased information on consumers from each location and the different surveying locations helped to create an overview of purchasing behaviors within the Byron area.

Survey data was collected on a variety of days and times in order to provide an unbiased perspective of area consumers, as customer demographics often change based on the time period in which data is collected; dates and times of surveying locations are included in Table 1. In addition, with the Byron Bay Bluesfest Festival running from Thursday, April 21<sup>st</sup> to Tuesday, April 26<sup>th</sup>, surveys were gathered predominately before and after the festival (when possible) in order to reduce the tourists' affect on the survey results.

**Table 1: Surveying Schedule**

<b>Supermarket</b>	<b>Local Food Stores</b>			<b>Farmers' Market</b>
<b>Woolworths, Byron Bay</b>	<b>Santos Food store, Byron Bay</b>	<b>Green Garage, Byron Bay</b>	<b>Fundamentals Food store, Byron Bay</b>	<b>Byron Farmers' Market</b>
Monday, April 18 (am)— <b>10 surveys</b>	Monday, April 18 (pm)— <b>5 surveys</b>	Tuesday, April 19 (am)— <b>5 surveys</b>	Tuesday, April 19 (pm)— <b>5 surveys</b>	Thursday, April 14— <b>20 Surveys</b>
Wednesday, April 20 (am)— <b>5 surveys</b>	Wednesday, April 20 (am)— <b>5 surveys</b>	Thursday, April 28 (pm)— <b>5 surveys</b>	Wednesday, April 27 (am)— <b>5 surveys</b>	Thursday, April 21— <b>20 surveys</b>
Friday, April 29 (pm)— <b>15 surveys</b>				Thursday, April 28— <b>20 surveys</b>
<b>Total: 30 surveys</b>	<b>Total: 30 surveys</b>			<b>Total: 60 surveys</b>

\*Byron Farmers' Market only held on Thursday mornings

Survey data was analyzed by inputting all of the results into Microsoft Excel and running correlation tests, t-tests, regressions, and calculating means and standard deviations in order to find the most critical results from the research collected.

#### **4.3 Interview Collection**

In order to collect qualitative data for this study, four interviews were conducted with individuals who are closely involved in the food sources of the area. Those interviewed include:

**Table 2: Interviewees and Schedule of Interviews**

<b>Interviewee</b>	<b>Title of individual and date of interview</b>
Nick Inlay	Santos Produce Manager (April 27, 2011)
Cole Kennedy	Woolworths Produce Manager (May 2, 2011)
Bob Walker	Fundamentals Produce Manager (April 29, 2011)
Mike Stack	Farmers' Market Manager (March 31 and April 28, 2011)

In order to gain a better understanding of the production and sale side of the competition of the farmers' market, it was necessary to complete several interviews that would allow the research to have a better grounding in the overall nature of the competition in the food market. Since farmers serve as the sellers of their products at the Farmers' Market, it seemed appropriate to survey them, especially considering the large range of sellers. However, to understand the nature and sale of products at the supermarket and local food stores, interviews needed to be conducted with managers in the stores that would be able to provide information on their products. A representative from all of the stores was contacted and an

interview was requested. All of the survey locations granted an interview except for Green Garage, who denied after three scheduled attempts.

The goal of these interviews was to gain information from the store or organizational perspective on the competition between local food providers. The interviews were also a way to gain general information on each location's variety of products, types of products, and general philosophy, especially in relation to its consumers. In addition, the interviews sought to gain information on pricing and how this affected their consumer base and their interests. The interview questions (in appendices) were identical for all interviews, to allow comparative analysis to be conducted. All of the interviews were conducted in-person at the store, which allowed for more interactive discussions and gave the interviewees additional resources. Notes were taken during the interview and then transcribed into Microsoft Word documents to allow for easier analysis.

Analyzing the interviews involved finding the major themes between the four interviews and comparing the major points in each interview to find overlapping viewpoints and conflicting thoughts.

#### **4.4 Price Collection**

One of the important factors in determining the competitiveness of the farmers' market is by analyzing prices between the different competitors. In order to do this, prices were collected of a variety of products on April 12<sup>th</sup> at Woolworths, Santos Food store, Green Garage, and Fundamentals Food store. Products were selected based on there being a similar product sold at the farmers' market, whose price could then be compared. When it became evident that prices were changing little over the three-week collection period, prices were collected again on Thursday, April 21<sup>st</sup> at all of the above locations and the Farmers' Market. When there were multiple varieties of a product available (for example, different brands of apple), the cheapest option was chosen and described to try to find an appropriate alternative.

To compare the prices, the cheapest price given for a product at the farmers' market was chosen (which assumes that consumers are aware of prices and look for the cheapest option, versus higher quality, etc.) and then compared this price to comparable products at the other food stores in the Byron shire. All prices were recorded into Microsoft Excel to allow for easier analysis and comparison.

#### **4.5 Limitations and Shortcomings of Data**

There are several limitations and shortcomings to the data collected for this research project. Firstly, the results collected from the surveys were based on those willing to fill a survey out, which means that the opinions of those who were rushed, have small children, or

were just unwilling to fill out surveys, were not accounted for in the survey results. In addition, Bluesfest was in the middle of the research collection period, so although surveys were not handed out on the days of Bluesfest, there was still a large population of tourists in Byron before and after for Easter break, leading to tourists constituting a large portion of the results. Additionally, some survey and interview questions may have been confusing for individuals, allowing them to incorrectly answer questions. Also, the price comparison disregards organic products as being in a separate category, which means that the research is assuming that consumers only look for the cheapest product and are not as concerned with mode of transportation, type of product, or growing methods, which is a large assumption to make. Moreover, Santos and Fundamentals provide predominately organic produce, which required that their organic produce be compared with Woolies, Green Garage, and the Farmers' Markets conventional products. The survey for consumer also could produce confusing results in that there is a large population of vegetarian/vegan/gluten-free consumers in the Byron area, which was not provided as an option on the survey. Finally, the data does not show what percentage of products consumers bought from different locations. For example, some people circled that they bought some products from all of the locations, but since there is no way to know what percentage they buy from each location, the data may be somewhat skewed.

## 5. Results

The following sections will summarize the data collected and analyzed, providing relevant information to the study.

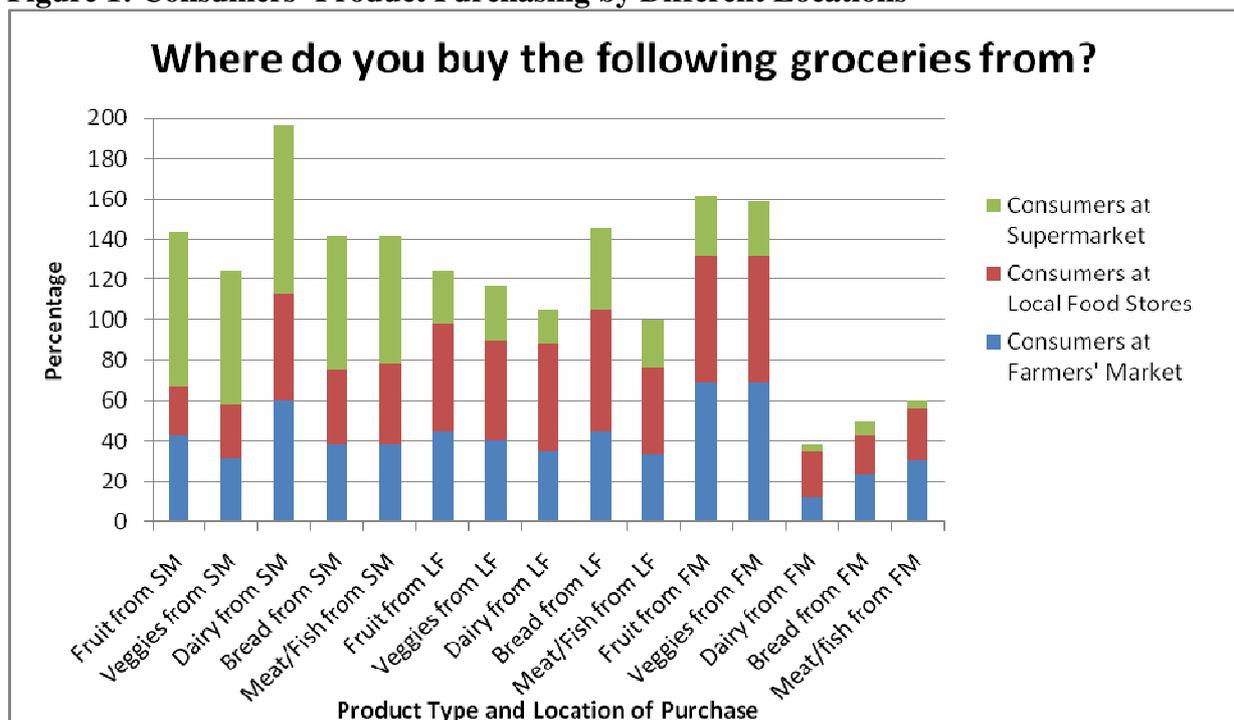
### 5.1 Consumer Purchasing Locations for Products

The graph below demonstrates where consumers purchase different food products from, based on where they were surveyed at. In the surveys, consumers were able to select all of the locations that applied, hence the percentages for many categories being over 100%. These graphs demonstrate the consumers from all shopping locations purchase their products from a variety of different stores. Fruit and vegetables were most commonly purchased at the farmers' market, with few consumers buying meat/fish, dairy, or bread from the market. In fact, not a single consumer only shops at the Farmers' Market for all of their groceries. The following facts illustrate how many consumers (in each type of product) buy all of their products from the Farmers' Market:

- 30 of the 120 consumers buy all of their fruit from the farmers' market
- 33 of 120 buy all of their vegetables from the farmers' market
- 3 of 114 buy all of their dairy from the farmers' market (6 don't eat dairy)
- 11 of 113 buy all of their bread from the farmers' market (7 don't buy bread)
- 12 of 102 buy all of their meat/fish from the farmers' market (18 don't buy meat/fish)

These facts demonstrate that the large majority of consumers buy some products from the Farmers' Market, but then buy additional products in the same category from other stores as well.

**Figure 1: Consumers' Product Purchasing by Different Locations**



These results demonstrated that the original coding scheme for consumers (in which they were divided based on where they filled out the survey) would not accurately split consumers up based on where they purchase their food from since consumers buy products from such a variety of locations. In fact, in many situations, the location where they filled the survey out was not necessarily conducive to where the consumers did most of their shopping. Therefore, a new coding scheme was created that divided consumers based on the number of products they purchased from the Farmers' Market. Consumers were split evenly in half between buying 0-1 categories of products from the FM, and buying 2-5 categories of products from the Farmers' Market (categories are fruit, vegetables, dairy, bread, meat/fish).

## 5.2 Overview of Important Factors in Determining Grocery Shopping Location

In order to determine the barriers and benefits of the Farmers' Market, it is important to understand the factors that influence consumers' decision-making and to analyze what attracts consumers to other locations.

Freshness and quality of products are the most important factors for consumers when deciding where to purchase food products from. For consumers who purchase a lot of products from the Farmers' Market, health is the third most important factor, followed by local/organic options, then variety, and then convenience, atmosphere, and price, all of which are only moderately influential. For consumers who purchase fewer products from the Farmers' Market, convenience, variety, and price are significantly more important factors in making shopping location decisions, while atmosphere, health, and local/organic options are significantly less important.

**Table 3: Important Factors that influence consumer grocery shopping location**

	Consumers who purchase 0-1 products from the FM	Consumers who purchase 2-5 products from the FM	One-tailed t-test
Price	3.883	3.450	p<0.05
Convenience	4.083	3.550	p<0.05
Variety	4.083	3.850	p<0.08
Quality	4.417	4.767	p<0.05
Freshness	4.417	4.750	p<0.05
Atmosphere	3.067	3.517	p<0.05
Health	3.833	4.350	p<0.05
Local/Organic	3.400	4.200	P<0.05
Consumers ranked the categories on a scale from 1 to 5, with 1 being very little and 5 being a lot			

### **5.3 The Importance of Convenience, Atmosphere, and Health**

Convenience is an important barrier for the Farmers' Market to understand. The significant difference in means between consumers who buy few products from the Farmers' Market versus a large proportion of products from the Farmers' Market, illustrates that convenience is a barrier for some consumers who may otherwise be interested in shopping at the Farmers' Market. This statement is supported by the manager at Woolworths who affirms that the largest appeal of Woolworths to consumers is the convenience of the shopping experience, offering consumers a "one-stop shop" in which they can buy all of their groceries at one location (Kennedy, C. 2011, pers. comm.). For consumers who choose to shop at the Farmers' Market, they have decided that convenience is not as important of a factor.

On the other hand, the variable atmosphere is clearly a variable that plays in favor of the Farmers' Market, providing a benefit to the Farmers' Market for consumers. According to the manager of the Byron Farmers' Market, consumers are attracted to the Farmers' Market due to their personal experiences at the market (Stack, M. 2011, pers. comm.). They attend, because it is a better shopping experience and they can develop personal relationships with the farmers (Stack, M. 2011, pers. comm.). The managers of Fundamentals and Santos agreed with this point, both describing the atmosphere and social benefits of the market as a benefit that the Market is able to provide to consumers that other stores struggle to compete with (Walker, B., & Inlay, N. 2011, pers. comm.). However, atmosphere is significantly more important to consumers who buy more products from the Farmers' Market, illustrating that one of the main benefits of the Market is lost on consumers who are uninterested in atmosphere as an important factor in determining where they purchase products from.

Additionally, health is a fairly unimportant variable to consumers who purchase few products from the Farmers' Markets, and a very important variable to consumers who purchase a large proportion of products from the Farmers' Market, with a significant difference in importance between the two types of consumers. However, health is also an important variable for consumers who buy products from two local food stores. At Santos and Fundamentals, both managers expressed their consumer base's need for healthy products, specifically ones that are both GMO-free and organic. The manager at Santos described that "the consumers' priorities are on their personal health and the health of the world" (Inlay, N. 2011, pers. comm.). As such, the consumer base who considers health to be a top priority has the choice between purchasing products from the local food stores or the Farmers' Market.

## 5.4 Product Comparison

When asked to compare products from the supermarket to products from farmers' markets, consumers' opinions differed based on how many types of products they buy from farmers' markets. As shown in Table 4, while all consumers believe that products from the farmers' market are of higher quality, are more fresh, and have more local/organic options, consumers who purchase more products from the Farmers' Market had significantly higher averages than consumers who purchase fewer products from the FM. Differences between consumers for the variety and expensive questions were not significant, but consumers agreed that products from the farmers' market have slightly more variety of products available and have slightly more expensive products. On the other hand, stall holders perceive farmers' market products to be significantly fresher than both types of consumers. Stall holders also perceive farmers' market to be less expensive than supermarket products, which is significantly different in comparison with consumers who perceive farmers' market products to be slightly more expensive than supermarket products. Finally, stall holders, on average, believe that farmers' markets have slightly less variety than supermarkets, while consumers rated variety as slightly higher at farmers' markets, with a significant difference between the two.

**Table 4: Comparing Farmers' Market Products to Supermarket Products**

<b>In comparison with supermarket products, farmers' market products are:</b>				
	Consumers who purchase 0-1 products from the FM	Consumers who purchase 2-5 products from the FM	One-tailed t-test between consumer types	Stallholders
Freshness	4.483	4.733	p<0.05	4.897
Quality	4.383	4.617	p<0.08	4.536
Variety	3.567	3.367	not sig.	2.857
Expensive	3.633	3.517	not sig.	2.885
Local/organic options	4.317	4.617	p<0.05	4.071
Consumers ranked the categories from a scale of 1 to 5, with 1 being less, 3 being same, and 5 being more.				

As shown in Table 5, in comparison with local food store products, consumers ranked farmers' market products as more fresh and of higher-quality, although consumers that purchase more products from the farmers' market had significantly higher averages than consumers who purchased fewer products from the FM. The differences in opinion between variety, expensive, and local/organic options were not significant between the two different types of consumers. Consumers considered the freshness, quality, and local/organic options to be higher than local food store products, and slightly higher for variety and expensiveness. Stall holders at the Farmers' Market perceive products at the farmers' market to have less

variety and be less expensive than local food store products, with means significantly less than consumers' perceptions of the same comparison.

**Table 5: Comparing Farmers' Market Products to Local Food Store Products**

<b>In comparison with local food store products, farmers' market products are:</b>				
	Consumers who purchase 0-1 products from the FM	Consumers who purchase 2-5 products from the FM	One-tailed t-test between consumer types	Stallholders
Freshness	4.083	4.417	p<0.05	4.440
Quality	3.950	4.367	p<0.05	4.200
Variety	3.533	3.517	not sig.	3.280
Expensive	3.433	3.217	not sig.	2.875
local/organic	3.917	3.983	not sig.	3.880
Consumers ranked the categories from a scale of 1 to 5, with 1 being less, 3 being same, and 5 being more.				

In comparison between supermarket products and local food products, consumers considered the difference between the freshness and quality of FM products and supermarket products to be larger than that between local food store products and FM products. Besides that though, the differences were fairly comparable between the two, although FM products were considered to be a little more expensive in comparison with supermarket products, but fairly comparable to local food store products, which means that consumers consider farmers' market products to be the most expensive, followed by local food store products, and then supermarket products.

### **5.5 Local/Organic Options as a Factor**

Local/organic products are both products that the Farmers' Market is able to easily provide consumers in large quantities. As provided in earlier sections, in comparing the two types of consumers based on purchasing behavior, consumers who purchase more products from the Farmers' Market rank local/organic options as significantly more important factor in determining grocery shopping location than consumers who purchase few products from the Farmers' Market. In addition, in comparison with supermarket products, consumers who purchase more products from the Farmers' Market view local/organic options as being a significantly more important factor in determining their grocery shopping location than consumers who purchase few products from the Farmers' Market. This illustrates that while the Farmers' Market is able to provide interested consumers with local and organic products, if consumers are not interested in local or organic products, then they may not see the benefits of the Farmers' Market as easily. In reality, local/organic options are two variables

that should likely have been separated as two variables, as they are two very different factors in which consumers may have very different preferences.

In terms of organic products, a large proportion of stands at the Farmers' Market provide organic products and recently the market has placed flags outside of all stalls with organic products, so as to make it simpler for consumers to find such stalls (Stack, M., 2011, pers. comm.) Additionally, Santos and Fundamentals primary goal is to provide organic and GMO-free products, so both of these stores are also a good outlet for consumers interested in organic products (Walker, B., & Inlay, N. 2011, pers. comm.). This is important, because it means that consumers may not see the Farmers' Market as the ideal choice for purchasing organic products, as they may rank the convenience or availability of products at Santos/Fundamentals as more important factors. In terms of local products, the different food sources have different amounts of local products available in their store:

- Santos: currently about 25% of fruit/vegetable products are local
- Fundamentals: currently, about 15% of fruit/vegetable products are local
- Woolworths: almost none of the fruit/vegetable products are local (all products have to go to the distribution center and then travel back to Byron)
- Farmers' Market: almost all of the fruit/vegetable products are local (the furthest products travel from northern NSW/southern Queensland (Walker, B., Kennedy, C., Stack, M., & Inlay, N. 2011, pers. comm.).

While the Farmers' Market has the largest amount of local products, if consumers do not rank local products as an important factor for their decision-making, then other stores will rule out due to other factors being more important to consumers.

### **5.6 Freshness of Products as a Factor**

As shown earlier in the results, freshness was ranked by all consumers as one of the most important factors in determining where they purchase their groceries from. However, freshness was ranked as a significantly more important factor to consumers who purchase more products from the Farmers' Market. With the distribution center for Woolworths being 100s of km away, and many of the products from the other stores not being local, it is clear that the Farmers' Market has products traveling the shortest distance and therefore the products are the freshest, in comparison with other stores (Walker, B., Kennedy, C., Stack, M., & Inlay, N. 2011, pers. comm.).

From the consumer's perspective, while all consumers perceive that farmers' market products are fresher than supermarket products, consumers who purchase more products from the Farmers' Market ranked the difference to be significantly more than those who purchase less products from the market. These facts demonstrate that those who purchase more

products from the Farmers' Market are more concerned regarding freshness of products and view the Farmers' Market products as being much fresher to other products. Moreover, consumers who buy fewer products from the market may perceive that while farmers' market products are fresher, the difference in freshness is not enough, or important enough, to warrant purchasing products from the Farmers' Market.

### **5.8 Quality of Products as a Factor**

As one of the most important factors that all consumers consider when deciding where to purchase their products from, quality holds a lot of weight at food product locations. However, some would argue that while the emphasis placed on quality is well-placed, consumers may misunderstand what quality means. When store managers were asked if consumers were willing to pay more money for superior quality, there was a fairly strong consensus that while consumers were willing to pay more if they perceived the product to be of superior quality, consumers currently have a fairly skewed sense of what superior quality means (Kennedy, C., Walker, B., & Inlay, N. 2011, pers. comm.). In fact, the manager from Woolworths describes the importance of presentation in that “when consumers think the product is better quality, you can increase sales ten-fold. Presentation is so important—consumers want bigger and brighter products and taste has actually fallen by the way side” (Kennedy, C. 2011, pers. comm.). This data is noteworthy, because if consumers are misinformed regarding the quality of products available at different locations, then they may be shopping at certain locations for all the wrong reasons.

### **5.8 Variety and Availability of Products as Factors**

The variety and availability of products is one of the main differences between the different food providers in Byron. As provided previously, no consumers surveyed purchase all of their groceries from the farmers' market and very few rely on purchasing their dairy, bread, and meat/fish from the market. This is largely due to the availability and variety of products available. For example, Santos currently stocks 68 different fruit and vegetable varieties, while Fundamentals stocks 30-40 different types of fruits and vegetables. Woolworths currently stock 282 different types of fruit and vegetables, and at times, this reaches up to 312. The Farmers' Market also stocks a large variety of products, although it is unable to often provide specialty items and many of the products are seasonal.

Variety was ranked by both types of consumers as a fairly important factor in making decisions of where to purchase products from, although consumers who purchase less products from the market consider it to be a significantly more important factor than consumers who purchase more products from the Farmers' Market ( $p < 0.08$ ). The stallholders

at the Market perceive variety at the Farmers’ Market, in comparison to that at other stores, as significantly lower than both sets of consumers; stallholders perceive the Farmers’ Market has slightly less variety than supermarkets, while consumers, on average, believe the Farmers’ Market has slightly more variety.

### 5.9 Pricing of Products

The results of the stallholder survey at the Byron Farmers’ Market and interviews with managers at the food stores in Byron provide important information on how products are priced at different stores. The three largest factors in helping stallholders decide what to price their products at are described below (27 responded to the question):

- 9 of the 27 mentioned the importance of providing a fair price for consumers and one that would make the market an attractive choice for them
- 6 of the 27 described that the prices of their competition (wholesalers, supermarket, other stalls, etc.) helped them to determine what to set prices at
- 12 of the 27 stated that the costs of production were very important in determining the prices of their products (with an additional margin in order to make a profit)

It is important to note that only one person of the 31 surveyed said that their stall was not profitable at the market, which illustrates that the large majority of stallholders are making a profit at the market. In comparison to prices set at the Farmers’ Market, food stores in Byron all have certain mark-ups in addition to the production cost of products. However, while at Fundamentals, Green Garage, and Santos prices change usually only on a weekly basis, Woolworths changes prices for about 40 products each day, with about half going up and half going down in price (Kennedy, C., Walker, B., & Inlay, N. 2011, pers. comm.). In addition, since Santos and Fundamentals are fairly small stores that are not large chains, they have the ability to change prices in the case of competitors offering significantly lower prices on certain items (Walker, B., & Inlay, N. 2011, pers. comm.). On the other hand, Woolworths’ prices are downloaded each day on market value from the distribution center and even in the case of large price differences with competitors, prices will rarely be changed to meet these prices, especially at the Byron store (Kennedy, C. 2011, pers. comm.).

In addition, there was a range of responses from stallholders in terms of their awareness of prices of similar products in the marketplace, with the results shown below.

**Table 6: Stallholders’ Awareness and Comparison of Prices Between Locations**

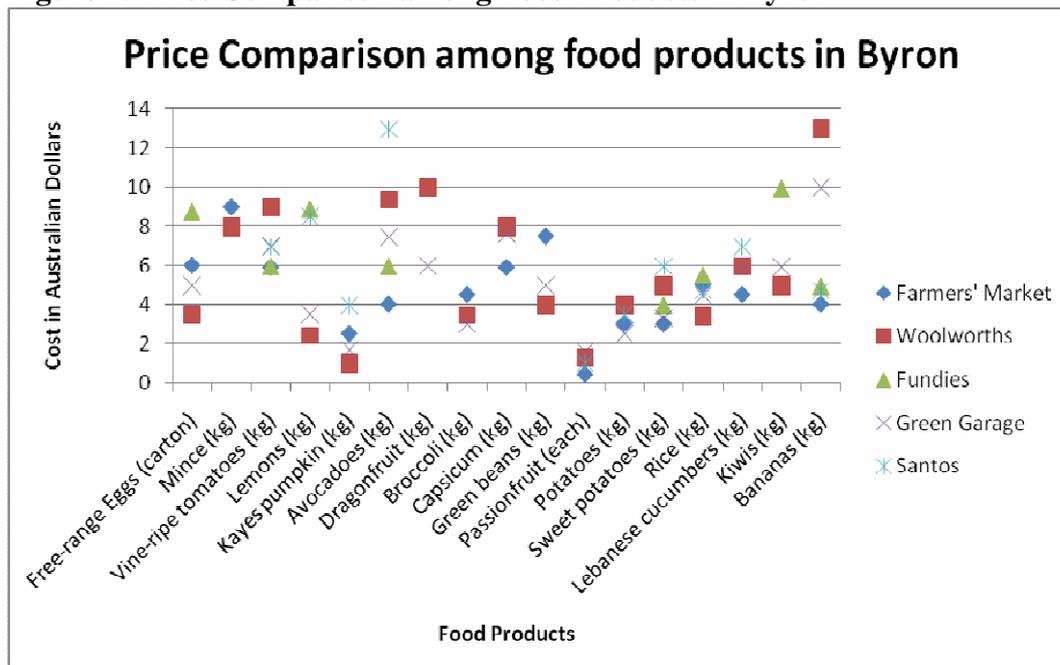
	<b>Stallholders</b>	
<b>Aware of product prices at other stalls</b>	<b>Yes: 66%</b>	
<b>If aware, have you ever changed your prices as a result</b>	<b>Yes: 30%</b>	<b>No: 70%</b>
<b>Aware of product prices at supermarket/local food store</b>	<b>Yes: 80%</b>	

<b>If aware, have you ever changed your prices as a result</b>	<b>Yes: 21%</b>	<b>No: 79%</b>
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In comparison with stallholders at the Farmers’ Market, food stores in Byron are fairly aware of competitor’s prices. Representatives from Fundamentals, Santos, and Woolworths all stated that they were aware of prices of similar products at different stores in Byron (Kennedy, C., Walker, B., & Inlay, N. 2011, pers. comm.). However, they all described that they were mostly aware of the prices of who they consider to be their main competitors, and usually do not change their prices as a result. A manager from Fundamentals explained that they only look at prices at Santos, because the other locations do not sell similar enough products to those at Fundamentals (Walker, B. 2011, pers. comm.). Similarly, a manger from Santos expressed that although they are aware of prices, it is hard to compare these prices, because the products are often very different (Inlay, N. 2011, pers. comm.). Finally, a representative from Woolworths expressed that in Byron there is not really big competition with other stores (like there is for example in Ballina, where there is a Coles, IGA, and Woolworths) so differences in price are not as big of a deal, because there is not concern over losing a large proportion of the consumers to a competitor (Kennedy, C. 2011, pers. comm.).

The graph below shows the price comparison from the price collection of specific items from the differrent food stores in Byron. As the graph demonstrates, the Farmers’ Market’s prices are fairly comparable to prices of other products, with many of the prices being cheaper than those at other shopping locations.

**Figure 2: Price Comparison among Food Products in Byron**



### 5.10 Consumer Awareness of Pricing

On the other side of the equation, consumers were asked if they are aware of prices of products at different locations and make decisions based on these price comparisons. The results are shown below.

**Table 7: Consumer Awareness and Comparison of Prices Between Locations**

	Buy few products (0-1) from the Farmers' Market	Buy a lot of products (2-5) from the Farmers' Market
Aware of product prices at other stalls	52%	65%
If aware, do you compare product prices at other stalls	68%	81%
Aware of product prices at supermarket/local food store	63%	65%
If aware, do you compare product prices at supermarket/local food store	82%	93%

### 5.11 Importance and Perceptions of Prices

In terms of how much price influences consumers' grocery shopping location, the mean value was ranked as moderately important among all consumers. Comparing the purchasing behavior of consumers based on how many products they buy from the Farmers' Market, consumers who purchase fewer products from the Farmers' Market ranked price's importance as significantly higher ( $p < 0.05$ ) in comparison with those consumers who purchase more products from the FM.

When consumers were asked to compare farmers' market products to supermarket products and local food store products, the overall mean between all consumers set farmers' market products as slightly more expensive. As provided previously, there was not a significant difference in opinion on the expense of farmers' market products between consumers who purchase different amounts of products from the market. However, when comparing stallholders perceptions of expensiveness to consumers, stallholders ranked the Farmers' Market products, on average, as significantly less expensive than consumers ( $p < 0.05$ ). In fact, stallholders ranked the Farmers' Market products, as being slightly less expensive than supermarket products and local food store products, while consumers ranked the Farmers' Market products as being slightly more expensive.

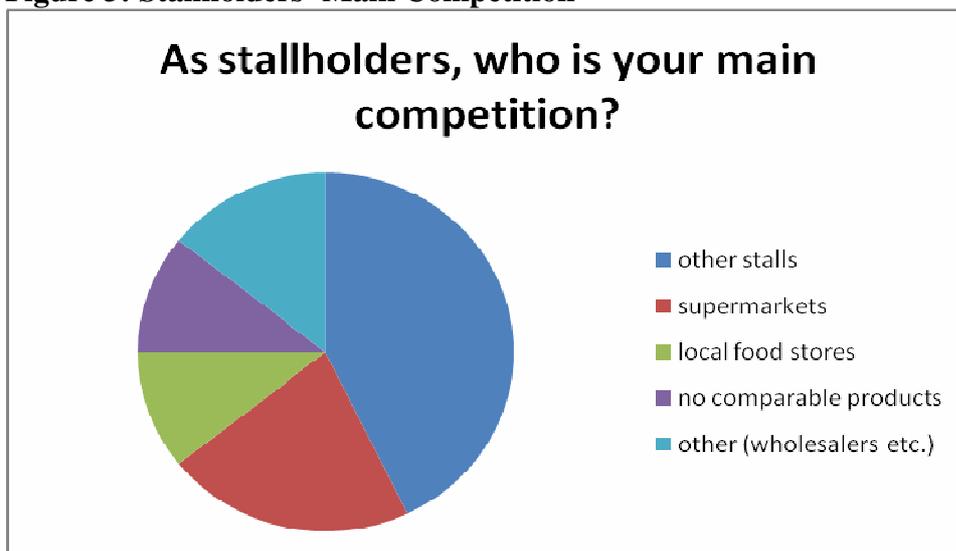
Consumers often assume that the pricing of products is directly correlated with distance traveled. Previous research demonstrates that consumers often perceive that local foods should be cheaper than products from further away. However, when managers at the area's food stores were questioned about the pricing of local products versus non-local products, it

appears that the differences are really product-dependent. A representative from Santos expressed that while wholesalers have a mark-up to cover freight costs, the store will often pay a local farm a little extra for providing local products, so although local products often tend to be less, they are not always cheaper (Inlay, N. 2011, pers. comm.). The manager at Fundamentals Food Store agreed with this, with the assertion that it just really depends on the product and the season (Walker, B. 2011, pers. comm.).

### 5.12 Perceived Competition among Food Sources

When stallholders were asked who they considered to be their main competition:

**Figure 3: Stallholders' Main Competition**



When store managers were asked who they considered to be their main competition, there was a variety of responses. The Farmers' Market manager, Mike Stack, believes that the market is very competitive with other food sources in the Byron area, because stallholders are able to keep steady prices in a fluctuating market (2011, pers. comm.). Managers from Fundamentals and Santos both affirm that they are each other's main competition, because of their similar consumer base, in that there is a fairly small similar proportion of the population interested in the type of food that they sell (Walker, B., Inlay, N. 2011, pers. comm.). The manager of Woolworths, on the other hand, believes that their main competition is likely the Farmers' Market, as the market has the ability to change prices more easily, while Woolworths is bound by contracts with suppliers and they need a certain supply size in order to supply a product to the market, which means that the product may end up being more expensive (Kennedy, C. 2011, pers. comm.). However, the manager also mentioned that consumers place a huge value on the appearance of products and the Market is often not able to provide those standards to consumers, which is why a huge percentage are still attracted to Woolies (Kennedy, C. 2011, pers. comm.).

While Woolworths' finds the Farmers' Market to be a main competitor in the industry, other stores see the Farmers' Market having a different role. The manager of Fundamentals described that while the market is able to provide consumers with a larger availability of in-season crops and a place to socialize and buy products, consumers cannot get all of their products from the Farmers' Market, which means that they will have to get these products from somewhere else (Walker, B. 2011, pers. comm.). The manager of Santos stated that the Farmers' Market is a good distribution point for local food and has a great atmosphere, but that it wouldn't be considered a main competitor, because people still have to fill in the gaps in their grocery list (Inlay, N. 2011, pers. comm.). Santos can also serve as a food distribution location for people who cannot get to the Farmers' Market, whether because they are full-time workers or are unable to find transport on Thursday mornings (Inlay, N. 2011, pers. comm.).

### **5.13 Additional Barriers to Joining the Farmers' Market as a Consumer**

Several of the barriers that prevent consumers from purchasing more products from the Farmers' Market have already been described (i.e. pricing of products, variety of products available, and the convenience of the market). However, when consumers were asked to list the barriers that prevent them from buying more products from the Farmers' Market, the timing and frequency of the market were two additional variables that were expressed by consumers. In particular, many consumers communicated their interest in attending the Market, but found that with their work schedule conflicted with the hours of the Market. In addition, the frequency of markets was a large concern, with many consumers voicing that they wanted to be able to purchase fresh products more than once a week.

Overall, the Farmers' Market requires consumers to perceive the benefits of the Farmers' Market as outweighing the barriers that prevent them from buying products from the Market. This type of shopping, especially when it seems that the costs outweigh the advantages, requires a commitment from consumers. As so eloquently described by the fruit and vegetables manager at Santos,

The difference for consumers is spending \$200 on groceries versus \$50 on groceries [if they shop at Santos] but the difference is in quality. If people change can change their values in terms of what is the most important way to spend their money and instead of spending it on cigarettes/alcohol/TV, they spend it on good food, then they would be able to purchase all of their groceries from here on a tight budget. It is definitely not easy and it must be a choice important to the consumer, but you can make it possible, it is just about the decisions you make (Inlay, N. 2011, pers. comm.). Although shopping at the Farmers' Market is not always easy, consumers who purchase products from the Farmers' Market are always happy that they do.

Stall holders were asked what the best way to increase consumer demand at the market would be and the recommendations are:

- Increased advertising of the market and its benefits
- Better educating consumers of the benefits of farmers' market products
- Selling products at the Market at a price that can be competitive in the marketplace by keeping prices low for consumers
- Specifically marketing the Farmers' Market towards attracting the ordinary shopper (those who are not only committed to farmers markets)
- Maintaining high-quality products
- Telling the 'story' of the market to consumers
- Providing a broader diversity/variety of products
- Providing a more consistent supply of products

#### **5.14 Barriers to Joining the Farmers' Market as a Seller**

According to market coordinator Mike Stack, in order to become a stall owner at the Byron Farmers' Market, there are fairly stringent regulations in place to ensure that the market is a genuine marketplace in which consumers can access fresh, local food (2011, pers. comm.). The application is fairly long and requires very specific information on the products grown and the growing methods, which are analyzed by the Byron Farmers' Market Committee (Stack, M. 2011, pers. comm.). One of the most difficult regulations is that in order to sell products at the market, the vendors who sell the products at the market must also be the producers who grow the food, including at stands where fresh food is being made (Stack, M. 2011, pers. comm.). In fact, the committee has an auditing system that visits the farms to ensure that farmers are producing their own products (Stack, M. 2011, pers. comm.). Additionally, the Byron Farmers' Market Committee considers the number of sellers of particular products in relation to consumer demand for the products, as variety is very important and if demand is not great enough for a certain product, then the applicant is turned down, so as to reduce competition and price issues between stalls (Stack, M. 2011, pers. comm.). Since there is currently a long list of applicants, the committee is able to be very selective in deciding who is invited to join the Market (Stack, M. 2011, pers. comm.).

Some of the barriers that may prevent farmers from joining the Market can be transferred from current challenges that stallholders face. In particular, surveys with current stallholders have shown that the main challenges that they face are:

- the time investment required to bring products to the market (selling the product versus producing the product)
- the effect of wet weather on the number of customers that turn out for the market and their sales (not always a steady customer base/very weather dependent as there is no permanent structure for the market)

- return for effort expended to sell products at the market is not sustainable
- being able to keep with the quantity demanded

In fact, when stallholders were asked if they would be able to produce more products on their current land if consumer demand increased, 24 stallholders said that they could produce more, 2 were unsure of their land's capacity, and 1 found that it was already producing at capacity (of the 27 that responded). However, it is important to note that of the 31 stallholders surveyed, only one stall found that their stall was not profitable at the market.

### **5.15 Demographics of Consumers**

The overall means for the demographics of consumers surveyed were:

- Frequency of grocery shopping: approximately 5% of consumers shop less than once a week, 40% shop once a week, 30% shop twice a week, and 25% shop more than twice a week.
- Normally spend on a grocery shopping trip: approximately 5% of consumers spend less than \$20, 35% spend \$20-\$50, 20% spend \$50-\$80, 15% spend \$80-\$110, and 25% spend more than \$110.
- Number of people you are grocery shopping for: approximately 35% were shopping for themselves, 35% shopping for two people, 10% shopping for three people, and 20% shopping for more than three people
- Distance travelled to get groceries: approximately 85% were traveling less than 10km, 10% were traveling between 10-30km, 3% were traveling between 30-50km, and 2% were traveling from further than 50km away.
- Age of consumer: approximately 20% of consumers are between 18-25, 35% are between 26-40, 40% are between 41-60, and 5% are over 61.
- Gender: approximately 40% male and 60% female
- Local resident vs. traveler: approximately 50% local resident and 50% traveler  
\*See the appendices for graphs that demonstrate the spread of consumers based on how many products they purchase from the Farmers' Market.

Demographics were compared between consumers that purchase a large proportion of their groceries from the Farmers' Market and consumers who purchase few to no products from the Farmers' Market. There were no significant differences in the frequency of grocery shopping, amounts spent while shopping, the number of people consumers were shopping for, the distance travelled to get groceries, nor the gender of the consumers. There was a significant difference in age between the consumers and their purchasing locations, with the mean age of consumers who buy more products from the Farmers' Market being higher. Additionally, there was a significantly larger number of consumers that are local residents who bought more products from the FM, while more travelers bought fewer products from the Farmers' Market (means at 1.35 and 1.633,  $p < 0.05$ ).

## **6. Discussion**

In order to analyze how competitive the Farmers' Market is with other local food sources, each category of perfect competition has been split up and each will be analyzed based on the survey data, interviews, and price collection. Then the factors will all be pulled together to analyze, overall, how competitive the Farmers' Market is and its role in the market for food products. Finally, the importance of this information will be discussed, in terms of what this means for the Farmers' Market and its potential in the marketplace in the future.

### **6.1 Producers act as Price-Takers in the Marketplace**

Perfect competition is based on the idea that there are so many buyers and sellers in a market that no one seller has the ability to set the prices and instead everyone acts as price takers. As evident by interviews with key individuals involved in product pricing at the food stores in Byron, this is currently not the case in Byron. In fact, as provided in the results, most of the prices are set either by wholesale distributor, a larger corporation, or based on costs of production. In fact, all of the stores mentioned that while they are aware of prices at other stores in Byron, rarely are prices changed or decisions made based on others' prices. In fact, stall owners at the Farmers' Market were the only producers who mentioned the importance of setting a price that was reasonable for consumers. As a result, it is easy for prices to become inflated when the competition is not great enough to keep the prices fair for consumers while providing farmers with reasonable mark-ups. Currently, a classic example of a company taking advantage of its consumers is banana prices, which are up to \$13/kg at some stores, because with the Brisbane flooding, there is a shortage of suppliers. Therefore the price has risen, and while some competitors are keeping their prices low, there is a proportion of consumers that will continue to shop at certain locations despite unreasonable prices. However, the fact that prices are set outside of the market demonstrates that one of the key principles of perfect competition is not satisfied.

### **6.2 Infinite Buyers**

From the results, it is evident that there are certain barriers that prevent consumers from buying at the Farmers' Market which the market must address to become more competitive with other food sources in Byron. The first such barrier is the price barrier, in which all consumers perceive products from the Farmers' Market as being slightly more expensive than other products available at stores in Byron. In fact, as evidenced by the price comparison conducted in the study, prices vary by product, and the majority of products at the Farmers' Market are priced similarly as other products, or cheaper than other products available. The most common difference in prices, which was explained by the managers at

food distribution locations and which consumers often do not understand, is that prices are based on the availability of products, which is largely dependent on seasonality and weather patterns. A previous study described the perception that consumers believe that local foods should always be cheaper. However, as the data demonstrates, prices of local products are not always cheaper than those from further away, because there are costs of production that can make smaller local supply chains more expensive than large corporations from further away and again, it all falls back on the availability of products. If consumers were educated by the Market on price fluctuations and where to buy the best products from for the most manageable prices, then the market would be able to attract a wider range of consumers.

Another barrier that prevents consumers from purchasing products from the Farmers' Market, as described in the consumer surveys, is the convenience of the Market. Until the Market is set in a convenient location at an appropriate time in which all consumers can attend (especially those who work full-time during the weekdays), the Market will be unable to attract a large proportion of Byron consumers.

In general, the barriers are all based on consumer preferences. If the most important factors for consumers are convenience and price, then the Farmers' Market will have a difficult time always being the perfect location, as price varies based on seasonality and availability, and the Market is not extremely convenient for grocery shopping. However, if consumers decide (which many already have) that the freshness and quality of products, the atmosphere of the shopping location, and their health and well-being are the most important factors, then shopping at the Farmers' Market will be an easy decision. As displayed by the results, consumers who buy more products from the Farmers' Market, list all of these factors as being significantly more important in choosing where to purchase products from, than consumers who purchase fewer products from the Farmers' Market. One of the challenges for the Farmers' Market will be to make the barriers that face many consumers small in comparison to the benefits of shopping at the market. As the market for food distribution locations is now, there are significant barriers that prevent many consumers from shopping at the Farmers' Market, which means that there will not be infinite buyers until the market can overcome these challenges.

### **6.3 Infinite sellers**

In order for there to be infinite sellers in the market of food sources in Byron, sellers have to be able to easily enter and exit the marketplace. There are therefore not infinite sellers in the market, as there are entry/exit barriers for producers trying to join the market. Firstly, as provided in the data collected, in order to become a new stallholder at the market, the

farmer has to receive permission from the BFMA, which has very strict regulations on the types of stalls allowed at the market. In addition, the BFMA limits sellers by products, as to prevent there from being too many competitors of one product in the market. As a result, it is fairly difficult to become a new stallholder at the market and current stallholders have found that there are many challenges to having a stall at the market, including time and input required to prepare for the market each week.

In addition, outside of the Farmers' Market, it is also very difficult for new producers to enter the general food market in Byron. As demonstrated in the results, most of the food stores have contracts with food providers and find it difficult to source products from local sources due to the small supply that such producers can provide.

#### **6.4 Availability of products**

The availability of products is not comparable across the marketplace. The fact that none of the consumers surveyed purchase all of their products from the Farmers' Market illustrates that the Farmers' Market cannot serve as the only grocery shopping location for consumers currently. In particular, the fewest consumers purchase meat/fish, dairy, or bread from the Farmers' Market, which makes sense because of all categories of products, the Farmers' Market provides consumers with the fewest options in these categories at the Market. Consumers have to supplement their groceries with products from other food stores, demonstrating that variety of products available at the Farmers' Market is a challenge for the market when competing with other food providers. In fact, the representatives from several food stores in the area stated that the Farmers' Market is not considered as a main competitor, because it is unable to provide consumers with all of the necessary products from their grocery lists, requiring consumers to supplement their groceries with products from the stores in Byron.

In relation to this, while the market has a large variety of products available, many of the products are seasonal and therefore consumers are not able to rely on them year-around. On the other hand, most of the food stores in Byron continue to supply products year-around, sourcing the products from further away when they are out of season. The remarks by the managers at several of the food stores contribute to the conclusion that consumers will have to become more flexible with their shopping and change their values in terms of the needed products, in order for the Farmers' Market to be able to serve as a complete grocery store for consumers. For example, when Woolworths stocks 282 different varieties of fruits and vegetables, it is difficult for the Farmers' Market to easily compete unless consumers can change their perceptions of what is necessary for their grocery lists and consider local and

seasonal products to be the priority in deciding where to purchase products from.

Additionally, the fact that consumers who purchase fewer products from the Farmers' Market ranked variety as being a significantly more important factor for them than consumers who purchase more products from the Farmers' Market, demonstrates that variety is a barrier for the Farmers' Market in attracting consumers.

It is also interesting to note that while the data collection demonstrated that the Farmers' Market had less variety of products than the supermarket and local food stores, consumers, on average, perceive that the Farmers' Market has slightly more variety, while stallholders perceive that it has slightly less variety. This may have been the result of a misleading question, in which variety was perceived in different ways by different individuals. For example, while the Farmers' Market may have a larger variety of different types of pumpkin, the overall produce available is smaller in comparison with that of the supermarket or local food stores. In addition, there is also a big difference between the variety of products available at Fundies vs. Green Garage, which also may have been confusing for some of the individuals surveyed. In conclusion, the variety and availability of products varies between food distribution locations, meaning that the competitiveness of the Farmers' Market is unclear.

### **6.5 Homogeneous Products**

From the survey data, it is apparent that consumers do not view the products in the marketplace as homogenous products. For example, the consumer surveys demonstrate that all consumers perceive Farmers' Market produce to be fresher and of superior quality than both supermarket and local food store products. In addition, consumers believe that there are more local/organic options at the Farmers' Market than supermarkets and local food stores, which also makes the products different. As such, if the products are not considered homogenous by consumers then the market cannot be perfectly competitive because some locations are therefore considered to have superior products than other stores. One interesting point related to this, is that in many of the interviews, managers described the fact that although they are unable to compete with the farmers' market in terms of the freshness and quality of products, this is not a huge concern for them. The stores believe that although freshness and quality are important to consumers, in the end, convenience and pricing will end up being the factors that help them to make their shopping decisions. Moreover, all of the managers agreed that there is a skewed perspective of what high-quality products are among consumers, with the look and size of the product being more important than the taste. As a result, consumer decisions are based on multiple factors, all of which the Farmers' Market

needs to understand so as to be able to appeal to all of consumers' needs. However, if homogenous products are not available at all of the stores, then perfect competition cannot exist, meaning that the Farmers' Market role in the local food system is not clearly defined.

## **6.6 Perfect Information**

While all prices are available to consumers for comparison, there are interesting results from the surveys collected as to who is aware and compares these costs when grocery shopping, which is a requirement for perfect information for purchasers. As provided by the results section, on average, the majority of consumers are aware of prices at stalls at the Farmers' Market and at the supermarket/local food store. In addition, if consumers are aware of prices at other food sources, then they are very likely to compare these prices when grocery shopping. However, consumers who purchase fewer products from the Farmers' Market are less aware of prices and compare prices less than those who buy more products from the Farmers' Market. This data points to the fact that there may be a lack of awareness from people who buy fewer products from the Farmers' Market. They may assume that certain food sources (supermarkets in particular) have cheaper products and therefore are less aware of prices at other locations and do not compare these prices, because they assume that the supermarket will always be their cheapest option. This argument is supported by the consumers surveys, which show that those who purchase less products from the Farmers' Markets place Farmers' Market prices as significantly higher, in comparison with stallholders, than prices at supermarkets and local food stores.

Another interesting piece of data from the surveys is that consumers who purchase more products from the Farmers' Market are just as aware of both supermarket prices and prices at other stalls, but they are more likely to compare prices with the supermarket prices than the stall prices. Further, consumers who buy more products from the Farmers' Market consider price to be a less significant factor in determining where they buy products from than consumers who purchase less products from the Farmers' Market. These facts illustrate that consumers who purchase more products from the Farmers' Market are less concerned with comparing costs at the market, because they consider other comparisons (such as freshness/quality of product) to be more important than price, while when comparing products to the supermarket, prices are one of the main attractions to shopping at the supermarket over other locations.

In conclusion, perfect information does not exist between the Farmers' Market and other food sources. Consumers are biased in terms of whether or not they are aware of or compare prices and there is a lack of information among consumers regarding the prices of

items and how they compare between food sources. This furthers the argument that perfect competition does not exist in the Byron marketplace and that the Farmers' Market is not directly competitive with other food sources.

## 7. Conclusions

As evident by the previous sections' analysis of the different principles of perfect competition and their applicability to the food distribution locations, perfect competition in the Byron area between food source providers does not exist. However, as provided previously, very few real-life cases satisfy perfect competition, and it is most commonly used as a measure of competitiveness in the marketplace. Translating the lack of perfect competition in the marketplace to the overall competitiveness of the Byron Farmers' Market to other local food sources in Byron is complicated. To some, it may appear that the Farmers' Market is clearly not competitive with other food providers, as there are a variety of barriers that make it difficult for consumers and producers to become involved in the Farmers' Market system. However, there are also a variety of benefits to the Farmers' Market that make it not easily comparable to other food sources in the area, including the freshness and quality of products, as well as the social atmosphere that the Market provides to consumers.

Going by the official definition of perfect competition and its application to the food system in Byron, the Farmers' Market is likely not competitive with other food sources in the area. Perfect competition though may not be the best measure of success for the Farmers' Market. If many of the stalls sell out of all of their products at the Market every week and a steady group of consumers continues to come to the Market weekly even when it is pouring rain, then maybe the principles of perfect competition cannot accurately represent the success of a farmers' market.

Either way, it is clear that there is the potential for the Farmers' Market to attract a broader range of both consumers and producers to its marketplace. By broadening the array of individuals involved in the system, the Farmers' Market will be able to increase its impact on the environment and the community by encouraging a closed food cycle that instills certain values with the Byron area. Overall, there must be a shift in values among consumers regarding the importance of different factors in food purchasing decisions. In order for such a shift to take place, there needs to be a push for increased education on the Farmers' Market and the benefits that it provides, so the barriers that consumers face seem less significant in comparison. This research is significant, because it is able to critically analyze the Farmers' Market and its role in the food system and how this role can be expanded and improved. The information collected for this research can hopefully be used for rationalizing the impact and need for growth of other farmers' markets in Australia. While this report attempts to provide a comprehensive analysis of the competitiveness of the Farmers' Market, there are several areas for further study. Future research should look into the value of the Farmers' Market to

consumers and monetizing the benefits that the Market provides to the community. In addition, it is important to understand the role of local products in the food system and how the Farmers' Market can continue to support the farmers that supply products to the market.

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## 9. Appendices

### 9.1 Survey: Stall owners at the Byron Farmers' Market

1. How long have you been selling products at the Byron Farmers' Market? (circle one)  
 <1 year                      Between 1-2 years                      Between 3-5 years                      >5 years
2. What motivated you to begin selling products at the Byron farmers' market?
  
3. What products do you sell at your stall?
  
4. How far do you travel to sell at the market? (circle one)  
 <10km                      10-30km                      30-50km                      >50km
5. Is the farmers' market a profitable venue to sell your products at?                      Yes                      or                      No
6. Do you sell your products anywhere else? (circle all that apply)  
 Supermarket                      Local food store                      Other Farmers' Markets                      Other:  
 If not, would you be interested in any of these other distribution locations?  
 Supermarket                      Local food store                      Other Farmers' Markets                      Other:
7. Are you aware of prices of similar products at other stalls?                      Yes                      or                      No  
 If yes, do you ever change your prices as a result?                      Yes                      or                      No
8. Are you aware of prices of similar products at supermarkets/other food stores?  
 Yes                      or                      No  
 If yes, do you ever change your prices as a result?                      Yes                      or                      No
9. Who do you consider to be your main competition?  
 Other stalls at the market                      supermarket                      local food store                      other:
10. How do you decide what to price your products at? Please explain.
  
11. Are you producing at capacity on your land or could you produce more products, if consumer demand increased? (circle one)  
 Producing at capacity                      Could produce more                      Unsure of capacity
12. In your opinion, would increased consumer demand be positive for the market? If so, what is the best way to increase consumer demand at the market?
  
13. In comparison with supermarket products, farmers' market products are: (circle one)  

	Less	Same	More		
Freshness	1	2	3	4	5
Quality	1	2	3	4	5
Variety/Availability of products	1	2	3	4	5
Expensive	1	2	3	4	5
Organic options	1	2	3	4	5
14. In comparison with local food store products, farmers' market products are: (circle one)  

	Less	Same	More		
Freshness	1	2	3	4	5
Quality	1	2	3	4	5
Variety/Availability of products	1	2	3	4	5
Expensive	1	2	3	4	5
Organic options	1	2	3	4	5

15. What are your main challenges in having a stall at the market? Please explain.

## 9.2 Survey: Purchasing Food in the Byron Shire

1. Where do you buy the following groceries from? (circle all that apply)

Fruit:	Supermarket	Local food store	Farmers' Market	Other:
Veggies:	Supermarket	Local food store	Farmers' Market	Other:
Dairy/Milk:	Supermarket	Local food store	Farmers' Market	Other:
Bread:	Supermarket	Local food store	Farmers' Market	Other:
Meat/ Fish:	Supermarket	Local food store	Farmers' Market	Other:

2. To what extent do the following factors influence your grocery shopping location?

	Very Little	Some	A lot
Atmosphere	1	2	3
Freshness of products	1	2	3
Quality of products	1	2	3
Health Benefits	1	2	3
Variety/Availability of products	1	2	3
Convenience	1	2	3
Pricing	1	2	3
Local/organic options	1	2	3

3. In comparison with supermarket products, farmers' market products are:(circle one)

	Less	Same	More
Freshness	1	2	3
Quality	1	2	3
Variety/Availability of products	1	2	3
Expensive	1	2	3
Organic options	1	2	3

4. In comparison with local food store products, farmers' market products are: (circle one)

	Less	Same	More
Freshness	1	2	3
Quality	1	2	3
Variety/Availability of products	1	2	3
Expensive	1	2	3
Organic options	1	2	3

5. Are there barriers that prevent you from buying more products from the farmers' market?

If so, explain.

6. Are you aware of prices of similar products at various stalls at the market? Yes or No

If yes, do you ever compare these prices? Yes or No

7. Are you aware of prices of similar products at supermarkets/local food stores?

Yes or No

If yes, do you ever compare these prices? Yes or No

8. How often do you go grocery shopping? (circle one)

<Once a week      Once a week      Twice a week      >Twice a week

9. How much do you normally spend when you go grocery shopping? (circle one)

<\$20      \$20-\$50      \$50-\$80      \$80-\$110      >\$110

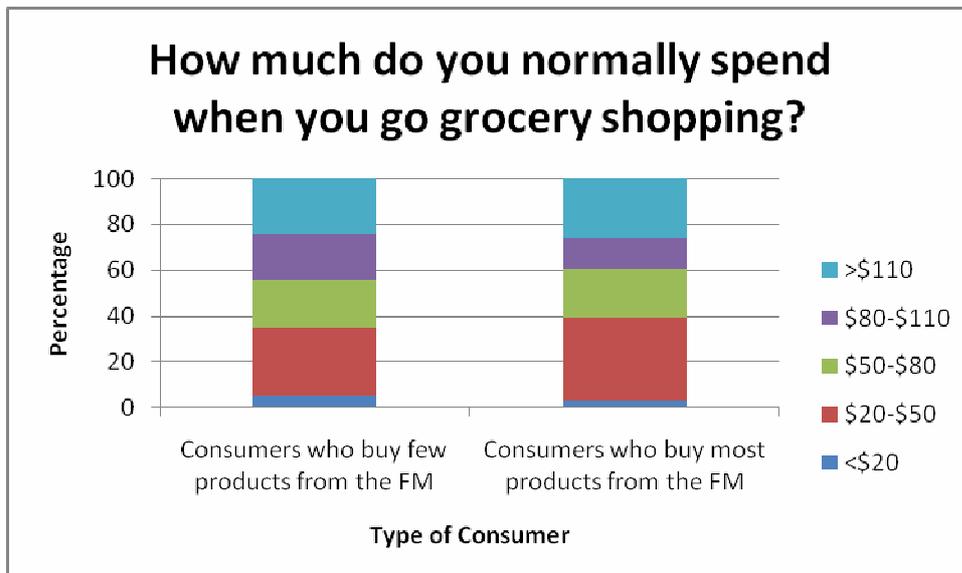
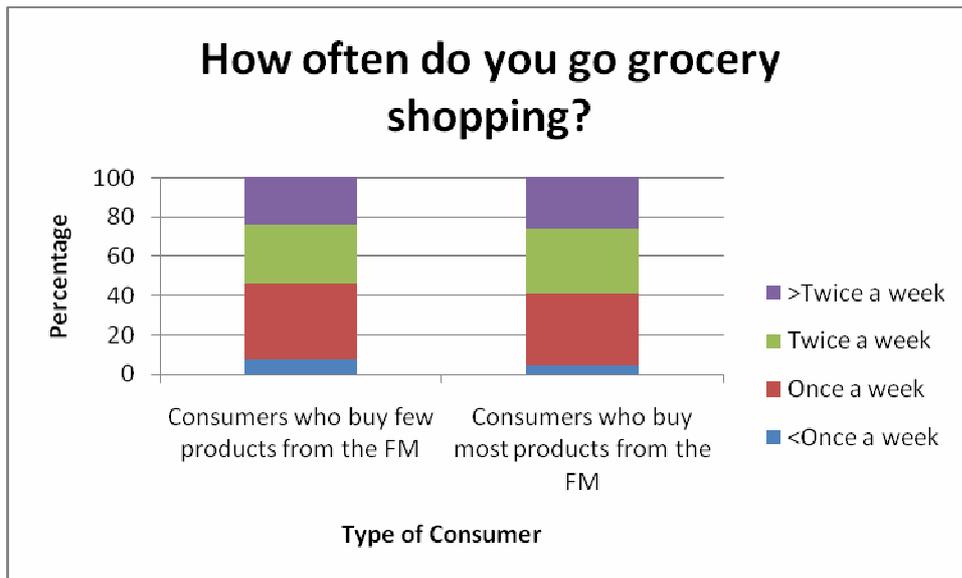
10. How many people are you shopping for today?

Myself	Two people	Three people	>Three people	Other:
11. How far have you traveled to get your groceries today? (circle one)				
<10km	10-30km	30-50km	>50km	
12. Age (circle one):				
<25	26-40	41-60	61+	
13. Gender (circle one):				
Male	or	Female		
Are you a (circle one):				
		Local resident (within Byron Shire)		Traveler

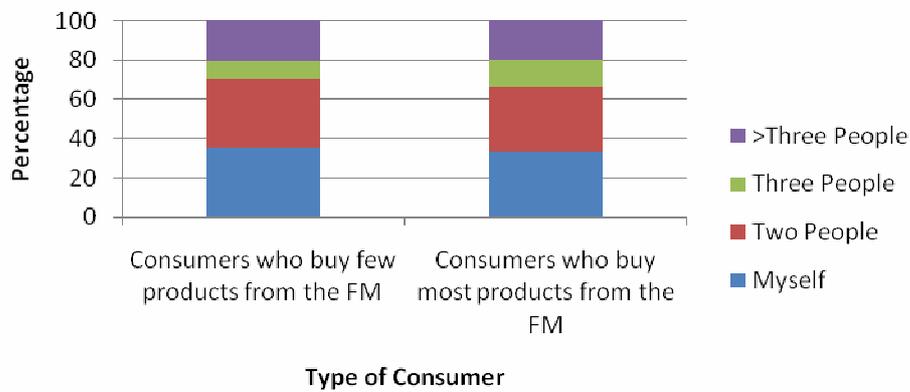
### 9.3 Interview Questions

1. How would you define local, in terms of food production?
2. With this definition, what percentage of fruit and vegetables that you stock, are locally grown?
3. How many different products do you stock (variety question)?
4. What percentage of these products are seasonal? Or do you make an effort to stock all products year-around?
5. How do you determine the prices at which fruits and vegetables are sold at the store?
6. Do you think your prices make it possible for all consumers to purchase products from your store?
7. Who do you view as being your main competition in the fruits and vegetables division?
8. What do you believe the farmers' market's role is in the food sector in Byron Shire? Do they cover a niche market or are they a main competitor for consumers?
9. Are you aware of prices of similar products at other stores and do you actively compare these costs/potentially change prices based on this information? (ask as two questions)
10. How do you think your produce compares with that of other food sources? In terms of freshness, quality?
11. How do prices compare between locally grown products and nonlocal products?
12. Do you think consumers are willing to pay more money for products if they view the products to be of superior quality?
13. Recently, have you seen an increased interest from consumers for local options? What do you think this is the result of?
14. Has the business changed any of its practices, if you see their being an increased interest?
15. How do you determine where to stock your produce from? Are decisions made at a more corporate level, or is stocking different in each store?
16. Do you stock any produce from farmers who also supply to the farmers' market?
17. How could new farmers become involved in the supply system?
18. What do you think of the price wars currently taking place, which many farmers complain is causing them to be unable to stay afloat as big retailers reduce prices on products?
19. How would you describe your typical consumer? What draws them to your store?

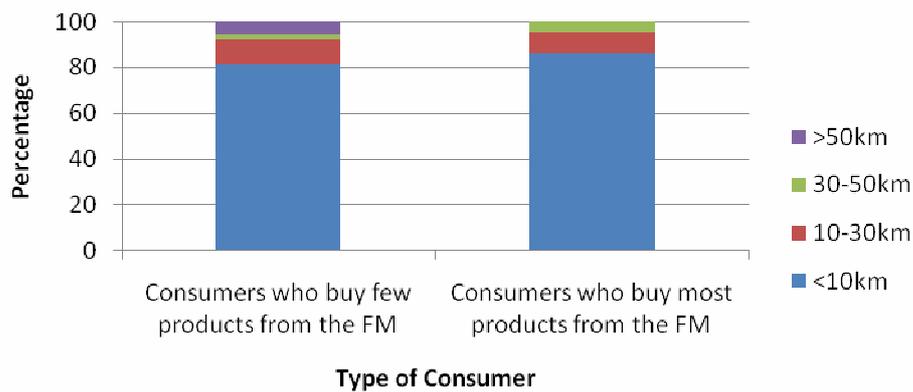
## 9.4 Consumer Demographic Comparisons



## How many people are you shopping for today?



## How far have you traveled to get your groceries today?



## Age of Consumers

