

Investigating the Market for Organic Food: Dunedin, New Zealand and the World

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Introduction

Late last year, the November/December issue of *Soil and Health* carried an article relaying what turned out to be somewhat dated research results on the size of the organic food market in Dunedin, and by implication, New Zealand (Campbell, 1999). After considerable feedback, we decided to update our research. The *Soil and Health* article carried the results of a survey of the retail value of food bought in Dunedin that was carried out in 1997. The findings of the 1997 survey suggested that Dunedin people were buying \$350-380,000 worth of organic food (retail value). We repeated the survey in January 2000, and the results suggest that people in Dunedin spent just over \$1 million on organic food over the previous year. Thus the market has more than doubled in three years. This paper will discuss these new survey results, and briefly review how the changes that are occurring in Dunedin relate to the national organic market and to trends in the international organic food market.

The Dunedin Retail Survey

Since the reason for conducting the 1999 survey was to be able compare it with the one carried out in 1997, we attempted to replicate the methods as accurately as possible. First, the Greater Dunedin area was searched for producers, wholesalers and retailers of organic food. This search was extensive and comprehensive (and carried out by the same researcher as in 1997 in order to assist in replicating the 1997 search pattern). These included businesses that added value to organic products such as bakeries and restaurants. We were interested in retail value; the price that the ultimate consumer paid for an organic food item. We ignored products like soap and wool that were not foodstuffs. We also ignored produce that was not certified, or was sold by uncertified growers through gate sales. The managers of all the businesses involved were contacted by phone and asked about their previous year's sales under a promise of absolute confidentiality. One refinement of the 1997 methods were that respondents were asked to calculate how much money was spent on different types of organic products (eg. dry goods, fruit and vegetables etc...).

The numbers obtained from the business people tended to be patchy depending on the way they kept their records and on the manager's or company's policy with regard to releasing figures. Some people were exceptionally helpful, others less so. However, the response to the questioning was in each of the surveys sufficient to build up a picture of the sales of most of, and especially of the big volume products, in the market. We concentrated on including real retail values that were reported to us, and were very conservative in any estimate of goods that we could not track down. Consequently, these figures represent the *lowest possible* figure for the market. The real value is likely to be higher as, despite our best efforts, there will be organic products that will reach the Dunedin market without our knowledge of their point of sale.

Table 1. Total Value of Organic Retail in the Dunedin Market

1996/1997	1999/2000
\$350-380,000	\$1,009,767

While there is no possible way to be completely accurate in calculating the movement of a group of products through multiple outlets (including direct sales from growers), our intention was to reproduce the methods from 1997 as accurately as possible in 2000. Therefore, the *relative* size of the market is quite accurate even if the *absolute* size of the market is likely to be slightly larger than these figures represent. Therefore, our most accurate finding is that the Dunedin market has grown by 165% over the three year time period.

Table 2. Organic Food Purchasing by Product Category

Type of product	All Food (\$ Retail)	Organic Food (\$ Retail)	Percentage Organic (% of All Food)
Dry Goods	118,573,554	373,654	0.31
Dairy	26,526,015	96,089	0.36
Fresh Fruit & Veges	28,113,041	270,052	0.96
Grains	2,040,463	47,738	2.30
Meat	31,513,813	38,537	0.12
Alcoholic Beverages	65,294,806	96,335	0.15
Bakery	18,817,600	87,362	0.46
Total	290,879,292	1,009,767	0.35

Table 2 shows how the total organic market in Dunedin is built up from the money spent on different categories of food. Table 2 gives an overview of the proportions of each type of food in relation to the total purchases. The total food figures were obtained by calculation on a population basis from the lists of average household expenditure and retail sales published by Statistics New Zealand (Statistics New Zealand 1997/98). It is interesting to note that while the anecdotal evidence from around New Zealand suggests a preponderance of fruit and vegetables in organic purchasing, Dunedin's distance from suppliers of these goods has meant that it is actually dry goods that are the most common

category of purchase. A second item worth noting is the strong presence of organic alcoholic beverage purchasing – representing sales of organic beers and wines.

Table 3. Organic Food Purchasing by Type and Outlet

	Dry goods (\$)	Dairy (\$)	Fresh Fruit & Veg (\$)	Grains (\$)	Meat (\$)	Alcoholic beverages (\$)	Bakery (\$)	Total (\$)
Dedicated Shops	161431	7780	124446	11909	5237	--	50221	361025
Healthfood Shops	178811	2472	6519	11275	--	--	--	199077
Supermarkets	33412	85837	139087	16973	--	--	--	275310
Direct Sales	--	--	--	7580	33300	--	--	40880
Bakeries	--	--	--	--	--	--	14833	14833
Cafes & Liquor Stores	--	--	--	--	--	96334	22308	118642
Total	373654	96089	270052	47737	38537	96334	87362	1009767

Table 3 shows the distribution between different types of outlet. While the preponderance of organic food is still sold through dedicated organic shops or health food shops, there is a significant proportion through supermarkets. These findings will prove most useful as a future benchmark against which future surveys can calculate potential changes in the proportion of organic food sold through outlets like supermarkets. They will also be compared later in this paper to European trends in supermarket sales. It is also interesting to note that direct sales from certified organic growers made up only a small proportion of overall sales (3%). This reflects the very low level of organic production around Otago, and is undoubtedly lower than in other urban centres where there are greater numbers of organic growers in surrounding areas.

Calculating the National Domestic Market.

The 1997 results were used to attempt an extrapolation of the total New Zealand domestic market (Campbell, 1999). This exercise was repeated for the 2000 data with the results being displayed in Table 4.

The total market figure of \$32.5 million was reached by extrapolating the per capita expenditure in Dunedin by the total New Zealand population. The population of greater Dunedin is 118143, therefore a total organic market of \$1,010,000 in 1999 can be represented as \$8.50 per capita. If, on average, people are eating the same amount of organic food in other parts of New Zealand - and the country's population is 3.8 million - then \$32.5 million worth of organic food will have been sold in the country in 1999.

Table 4. Extrapolations of the Total New Zealand Market for Organic Foods.

Per capita expenditure on organic food in the Dunedin Market	Extrapolation to total New Zealand market ¹
1997 - \$3.00	\$10.5 million
2000 - \$8.50	\$32.5 million

It needs to be pointed out that whereas the figures for the Dunedin organic market are relatively good ones; those for the whole country extrapolated from Dunedin are less secure. The key issue is whether Dunedin is representative of overall organic purchasing patterns. There are four points that can be made in relation to this issue:

- organic distributors consider Dunedin to experience low demand for organic produce relative to more northern urban areas, or regions like Nelson.
- organic retailing was in disarray in the mid-nineties, and the rapid increase we observed may be partly due to Dunedin recovering lost ground on the other urban markets.
- premiums for fresh produce in Dunedin are high relative to other urban markets which are more proximal to organic suppliers.
- nevertheless, Dunedin does have organic food available, and is therefore likely to have a higher level of consumption than some rural areas which still don't have access to much organic food.

Some of these reasons may cancel each other out. We would be even more hesitant about extrapolating a national figure based on the per capita consumption in one of New Zealand's more active organic markets like Auckland or Nelson. With this in mind, we can suggest that the New Zealand domestic market through 1999 was likely to have been greater than the \$32.5 million value calculated above. Therefore, our national figure, like our retail figures for Dunedin itself, is likely to provide an absolute bottom limit for the size of the New Zealand market, with the real figure likely to be higher.

The International Organic Market

These tentative figures for Dunedin and New Zealand give us some data which can be usefully compared to wider trends in the world market. At the time when the original survey was done, Saunders et al. (1997) commented that the quality of international data on organic food was dismal. Since that time, increasing interest in organic agriculture within the USA, and a responding move by the USDA to quantify the global organic

¹ Keen eyed readers will note that the extrapolation was undertaken differently in 2000 compared to 1997. In 1997, per capita expenditure was extrapolated by the total *urban* population of New Zealand assuming that organic food outlets were not prevalent in rural areas. However, this was not correct, and certainly in the ensuing three years a number of rural organic food outlets have become established. Thus, the 2000 figure is extrapolated by the *total* New Zealand population. A second change is that the Dept of Statistics has produced a revised estimate of the New Zealand population since 1997.

market, have resulted in new bodies of data which give some relatively more reliable data. The USDA has requested that the Foreign Agricultural Service (FAS) - operating through US embassies – provide data on local organic food consumption. The following data are a compilation of these FAS reports.² There are currently 20 FAS reports, to which we have added our own research on the New Zealand market. The following statistics are notable in that they:

- only use FAS (or other data) which is less than 2 years old. This is important when the state of the world organic market is rapidly changing. Even the UK figures in the FAS report are now probably outdated.
- provide aggregate figures for these 21 countries. This does not provide data on the *total* world market, however, most of the main organic markets are present (with significant absences in the data for Scandinavian countries).

Table 5. shows the value of organic products bought, corresponding per capita expenditures, the annual growth of organic markets and the premiums paid in a number of countries. For this group of 21 countries, the organic market presently exceeds US\$14 billion and is growing annually at an average rate of 35%. The biggest organic markets are in the United States, Europe and Japan. Organic imports to Japan are currently less than 4% of the total sales of organic food. This suggests that even if a substantial amount of the food producing land in Japan is converted to organic there will still be a significant demand for organic imports which New Zealand might be in a position to fulfil. The same scenario will probably apply in a number of other countries like the European countries and South Korea (Brehm, 2000), as their organic markets grow. Taiwan (Senger, 2000) and Hong Kong (Wetzel & Ferris, 2000) will be among these with growing organic demand and small or minimal land area.

² We would like to thank the Organic Products Exporters Group, and particularly Samira Wohlfart, for providing this source of data.

Table 5. Compilation of FAS Global Data on Organic Food Purchasing.

Country	Value of organic market (US\$ millions)	Per capita consumption of organic products (US\$)	Annual growth in organic market	Average premiums
Argentina	\$3	\$0.08	25%	N/A
Australia	\$132	\$6.95	60%	35%
Austria	\$152	\$19.00	N/A	10-50%
Brazil	\$150	\$0.87	20%	25-35%
Canada	\$571	\$18.42	25%	10-50%
Denmark	N/A	N/A	N/A	30-50%
France	\$610	\$10.34	25%	25-50%
Germany	\$1,800	\$21.95	10%	30%
Hong Kong	N/A	N/A	15%	15%
Italy	\$900	\$15.79	20%	20-200%
Japan	\$3,000	\$23.81	N/A	10-30%
Korea	\$61	\$1.30	N/A	50%
Mexico	\$15	\$0.15	N/A	30-40%
New Zealand	\$16	\$4.44	50%	10-100%
Philippines	N/A	N/A	10-20%	20-30%
Poland	N/A	N/A	N/A	10-30%
Portugal	N/A	N/A	N/A	10-15%
Slovakia	N/A	N/A	N/A	15%
Spain	N/A	N/A	N/A	20-50%
Taiwan	\$9.5	\$0.43	30%	Up to 400%
UK	\$650	\$11.02	100%	25-100%
USA	\$6,000	\$21.98	20%	10-20%
Total:	\$14.07 billion			
Average:		US \$10.44	35%	35%

Land Area in Organic Production

While the above table lists much of the information on organic consumption, there is also an amount of data on land area in organic production. Most of the European Countries have an established but still growing demand for organic food. They also have expanding numbers of organic producers. Growers are encouraged to convert to organic methods by being offered subsidies by both individual governments and the European Union (Higgiston, 1999; Schneller, 1999; U.S. Embassy, 1999; Ramos, 2000). In Austria 10% (U.S. Embassy, 1998) of the agricultural area is organic. In Germany the figure is 2% (Saunders et al., 1997); in Italy 5.7% (Berry, 1999), in Denmark 3.6% (Letarte, 1999), in France 0.7% (Piason, 1999), in the United Kingdom it is 1% but increasing rapidly (Knight et al, 1999), and in Poland it is 0.3% (Higgiston, 1999). All of these countries

export some organic products but must also import organic products. The United Kingdom imports the greater part - 70% - of its organic food (Atkinson, 1998). Denmark (Letarte, 1999), Poland (Higgiston, 1999), Slovakia (Mustard, 1998), Hungary ((Schneller, 1999) and Spain (U.S. Embassy, 1999) however, currently have smaller internal organic markets and export most of what they grow on their expanding numbers of organic farms. Most of this organic exporting is to other European countries.

Outside Europe, in the Americas: in Canada about 2% of the food eaten is organic and the country is a net importer of organic food. The greater part of this comes from the U.S.A. The organic market in the U.S.A (Tradenz, 1999), which seems enormous, in fact represents less than 1% of the total food market (Klonsky, 1999). Most of the organic food that is grown there is eaten within the U.S.A. but some lines are exported. Mexico (Russell, 2000), Brazil (O'Connor, 1999) and Argentina (Hagar, 2000) which are traditional food exporters have expanding numbers of organic growers and most of their production is for export. They represent direct competition for New Zealand's organic growers – particularly in the US market.

Analysis of the Organic Consumer

The FAS reports, supplemented by other recent publications, also attempt to profile the organic consumer. These findings tend to confirm the long term evaluations of organic food consumers which is one of the more thoroughly researched aspects of the industry.

Internationally, the three main motivations for buying organic food relate to concerns about the *environment*, *personal health*, and *food safety* -- although many consumers also associate organic foods with *enhanced flavour and freshness* (Saunders et al., 1997; Atkinson, 1998; Greuff, 1998; Sharpless, 1998; Higgiston, 1999; U.S. Embassy, 1999). Ethical concerns regarding animal welfare, farmers' health, employment in impoverished rural communities, and local purchasing (both to encourage local growers and to reduce the environmental effects associated with transport) are also important for some buyers (Betteridge, 1997; Aitchison, 1998). Environmental considerations are the highest priority for organic buyers in Europe, to the extent that German consumers will often go beyond questioning how the product was grown and query aspects of production such as manufacturing inputs, energy consumption, packaging and retail practices (Greuff, 1998). In contrast to European consumers, New Zealanders, like Americans and the British, seem to be more interested in the effects of food upon their personal health or the health of their families (Squires, 1999; Aitchison, 1998; di Matteo et al., 1999). The rapidly increasing demand for, and availability of, organic babyfoods (Knight et al., 1999; U.S. Embassy, 1999) is indicative of this trend towards concern for family members. A heightened interest in the healthiness of foods is also spreading via expatriates to local inhabitants of Hong Kong (Wetzel & Ferris, 2000), the Philippines (Canono, 2000), and Taiwan (Senger, 2000), and is argued to be responsible for the emerging interest in organics in these countries.

Food safety issues are also responsible for the growing demand for organic food. Food quality and safety has long been important to Japanese consumers (Betteridge, 1997),

with 80% of buyers in 1996 citing assured safety as the prime reason for their purchasing of organic foods (Naka, 1996). However, concern about food safety is increasing throughout the affluent world as a result of recent food scares. Worries about the health effects of herbicides and pesticides on food is paling in comparison to worries about dubious production and processing technologies and outbreaks of food-related diseases. The latter include salmonella, listeria, E. coli, and BSE (mad cow disease), while the former include food irradiation technology, the use of animal hormones such as BST (bovine somatotropin), and most recently, the genetic engineering of food products. However, this has provided a market opportunity as organics represent the one food source that is guaranteed to be GE free. One recent study in the UK found that 30% of consumers purchased organic foods primarily because it was GE-free (Conlon, 2000).

Because organic foods are generally priced higher than conventionally produced foods organic consumers are generally of above average income (Betteridge, 1997; Atkinson, 1999; Wetzler & Ferris, 2000). They are also usually relatively well educated (U.S. Embassy, 1999; Hagar, 2000; Wetzler & Ferris, 2000), and often demonstrate an awareness of some of the issues mentioned above (Saunders, 1997; Aitchison, 1998). Consumers of organic foods are also often young or with a young family, which is again consistent with the trend towards organic baby food (Aitchison, 1998; Grueff, 1998).

Organic food retailers

Some data is also available from the above sources on the nature of food distribution. Food distributors who recognise the growing consumer demand for 'healthy', 'natural' and 'safe' foods are increasingly seeking reliable organic suppliers. The proportion of European organic food sold through supermarkets varies:

- Germany - 25% (Greuff, 1998),
- Italy - 33% (U.S. Embassy, 1999),
- France - 45% (Piason, 1999),
- Austria - 70% (U.S. Embassy, 1998).

Supermarkets are also important retail outlets for organic food in the United Kingdom, where large chains such as Sainsbury and Waitrose offer financial support to organic producers in order to ensure a consistent supply of organic goods (Atkinson, 1998).

The balance of the organic produce bought in Europe is retailed by whole- or health-food shops or is sold by the producer: at the farm gate, through direct sales or through box schemes (Saunders et al., 1997; Atkinson, 1998; Knight et al., 1999).

Comparisons: Dunedin, New Zealand and the World

By accessing the FAS data from the USDA some comparisons can be made about the differences between the Dunedin, New Zealand and World markets for organic food.

By accepting the Dunedin figure as a conservative lower estimate of the per capita expenditure of New Zealanders on organic food, some interesting points of comparison can be made.

First, the growth rate of the domestic market in New Zealand (50% per annum over three years), is rapid compared to other markets. The FAS sample countries have experienced an average growth rate of 35% in the organic market. Only the UK and Australia have grown faster, and the UK has been highly influenced by the BSE crisis over the last two years.

Second, the style of organic purchasing resembles the British and US experience rather than mainland Europe. Squires' (1999) research confirmed that New Zealand consumers are more concerned about health and food safety than the environment – unlike many European countries. Further, FAS data indicate that markets like Dunedin, which have around 27% of organic food sold through supermarkets, have relatively low levels of organic supermarket sales compared to Europe.

Third, this growth rate may be large, but New Zealand is coming off a low base. Per capita expenditure on organic food is low in New Zealand compared to other Western countries. The lowest levels of per capita consumption were unsurprisingly in Third World countries (generally less than US\$1.00 per capita). Asian countries apart from Japan also were generally lower than New Zealand. However, of Anglo-Saxon countries, New Zealand was the lowest among those countries with available data. Our most proximal comparison – Australia – has a per capita expenditure 50% greater than New Zealand, while major consumers like Japan, Germany, and the USA have per capita figures that are over 500% more than New Zealand. These markets have, however, 'settled' to a 20-25% annual growth rate.

If New Zealand followed the path set by these high organic consumers, the New Zealand domestic market would eventually be worth over NZ\$150 million, and still growing at around 20% per annum.

In conclusion, the above data, even when used cautiously, suggest that the New Zealand domestic market for organic food is growing rapidly, but is still in an immature 'take-off' phase, and probably has the potential to significantly expand. The proviso to this is that such periods of rapid expansion overseas have been supplied by exports from countries like New Zealand. The final question over the New Zealand domestic market remains the destination of organic goods produced in New Zealand. The data suggests that suppliers to the New Zealand domestic market are achieving high premiums, which leads to the conclusion that thus far the major disincentive for large organisations to sell in the domestic market are the small economies of scale attendant to a small volume market. Given another 5 years of rapidly increasing demand and this calculation may well shift favourably in terms of the domestic market.

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