



Australian Government
**Department of Agriculture,
Fisheries and Forestry**

The Australian Organic Industry A Profile



Principal Author
Dr Darren Halpin

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For further information, please contact:

Food Policy and Communications Section
Australian Government Department of Agriculture, Fisheries and Forestry
Email: foodinfo@daff.gov.au
Phone: 02 6272 4161
Fax: 02 6272 4367

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Principal author

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Acronyms and Definitions

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ANZSPC	Australian and New Zealand Standard Product Classification
AQIS	Australian Quarantine and Inspection Service
FAO	Food and Agriculture Organization (of the United Nations)
ISO	International Organization for Standardization
USDA	United States Department of Agriculture
WHO	World Health Organization (of the United Nations)

CHAPTER 1

A farm-level view of the Australian organic industry

Darren Halpin

Centre for Social Science Research, Central Queensland University

The organic industry in Australia is certainly more than the sum of its farmers. It is composed of processors, retailers, input providers, certifying organisations and a range of other individuals and organisations. Yet, organic agriculture, both in Australia and globally, originated with the voluntary efforts of like-minded farmers. It was their innovation that provided the base for the vibrant industry evident today. The aim of this chapter is to provide a profile of the Australian organic industry at the farm level.

This chapter sets out to answer the following questions:

- How many certified organic farms are there and where are they located?
- What kinds of agricultural products are grown or produced on certified organic farms?
- What are the characteristics of the operators of certified organic farms?

Defining the territory

There is a high degree of ambiguity when it comes to discussing organic food and farming. To avoid confusion this research examines those producers and products *certified organic*. This term also includes products or enterprises certified as *biodynamic*. Specifically, the research only includes farms and farm products that are certified by an Australian Quarantine and Inspection Service (AQIS)-approved certifying organisation. In 2004 the certifying organisations so approved were the National Association for Sustainable Agriculture Australia, Australian Certified Organic, the Tasmanian Organic-Dynamic Producers, Safe Food Production Queensland, the Organic Growers of Australia, Organic Food Chain and the Bio-Dynamic Research Institute.

Anecdotal evidence suggests that many farm operators pursue organic production methods but are not certified for various reasons including cost. While some may argue this constitutes organic production, it has not been included in the data discussed here. The primary reason for this decision is that including these activities makes boundaries for data collection and analysis impossible to construct. In addition, without certification it is difficult to adjudicate on whether a farm's production is or is not organic. The organic farm survey from which most of the data reported here was gathered asked whether individuals were certified organic (not including pre-certification or in-conversion) by one of the seven AQIS-approved certifying organisations (see Chapter 8 Regulation of the organic industry). Any individual farm not meeting this definition was excluded from the survey.

The survey used to generate most of the data reported in this chapter asked farm operators for estimates of volume and value of sales from the farm in major product groups. Data was not requested on product transformed on the farms surveyed (for example, grapes turned into wine, olives to oil, milk to cheese). The data also does not count product that is used on-farm or not sold (for example, milk for calves, cereals for on-farm consumption as fodder or stored in silos on-farm).

Gathering farm-level data on organic agricultural production

The majority of production and economic data on Australian agriculture is collected in a systematic manner by the Australian Bureau of Statistics (ABS) and the Australian Bureau of Agricultural and Resource Economics (ABARE). The ABS Agricultural Census is the source of much agricultural data and standalone studies are conducted by both the ABS and ABARE at regular intervals. These activities allow governments, industries and researchers to analyse and measure the development of agricultural industries.

For various reasons this data does not distinguish between organic and conventional agricultural producers or production. Chief among these reasons is the desire to avoid adding to the length or complexity of the existing data collection process. As such, it is not possible to compile a view of organic agriculture before the farm gate from these readily available sources of data.

One of the tasks of the research reported in this chapter is to remedy the lack of farm-level data. To do so, two (imperfect) approaches were adopted to data collection. The first was to use data that is routinely collected by several of the AQIS-approved certifying organisations. The National Association for Sustainable Agriculture Australia, Australian Certified Organic, the Tasmanian Organic-Dynamic Producers and Safe Food Production Queensland all provided data. The Organic Growers of Australia, Organic Food Chain and the Bio-Dynamic Research Institute either did not collect the data sought or were unable to provide any data owing to privacy concerns.

The second approach was to conduct a survey of certified organic farms to collect data directly. The sample for the survey was drawn randomly from a list of certified organic producers (excluding in-conversion and pre-certified farms). The list was constructed from lists publicly available from the National Association for Sustainable Agriculture Australia, Australian Certified Organic, the Tasmanian Organic-Dynamic Producers and the Organic Growers of Australia. Safe Food Production Queensland did not have any farmer customers. Organic Food Chain and the Bio-Dynamic Research Institute were unable to provide any lists owing to privacy concerns. Lists were supplemented and cross-checked with names from the Organic Federation of Australia 2002 directory and the Western Australia Organic Farmers Association 2003 directory.

There are obvious limitations in both these methods that need to be acknowledged from the outset. The certifying organisations in Australia are not required to supply data on domestic production. The data available is collected by certifying organisations to satisfy their own needs for the purposes of certification and, where they charge fees as a levy of total sales, to calculate charges for their clients. In terms of gauging a picture of the industry from this data a few limits are immediately obvious. Firstly, data is only available from those certifying organisations that charge a levy based on sales and, secondly, the data collected is relatively

inconsistent between certifying organisations. Because data is collected to calculate levy income it includes data on volumes and values of sales under the certifying organisation's label. This means data on volume produced but not sold under the label is generally missing. Further, certifying organisation data potentially double counts values, as some producers are customers of more than one certification organisation. Upon receiving the data itself it was discovered that the certifying organisation data was almost always incomplete. Missing data for value and volume made it difficult to ascertain if the values were truly missing, hence requiring insertion of an estimate, or real values of zero. Further, some certifying organisations report values for the entire farm but volume by product category, which makes collation of data difficult across certifying organisations. Overall, data in relation to production values and volumes appeared particularly weak. As the data is self-completed in many cases by farmers, product categories are used in a non-standardised manner. However, data on farm numbers, conversion status (pre-certification, in-conversion or organic) and certified area is generally available and appears relatively accurate. As such, the certifying organisation data is less valuable in arriving at industry-wide estimates of certified area, volume and value but does provide a useful means of placing survey data in context. At times, this data provides a guide to the shape of the industry as a whole.

Given the weaknesses in the certifying organisation data, a telephone survey was conducted in June 2004 of certified organic farms. Because the survey data was collected in a standard format it is generally more complete and it is clearer which data is actually missing, thus enabling estimations to be made on a firmer basis. However, the weaknesses are that asking farm production and financial data over the telephone is quite a challenge. In analysing the data, it was clear that some of the interviewees had trouble in providing the data, which means lower response rates for these questions. Nevertheless, it still provides a good base for further and future work. Data on values, volumes and prices for organic agricultural products from the survey was gathered on the basis of a set of standard product groups: beef (for meat), sheep and goat (for meat), cereals (including grains, pulses and oilseeds), pig (for meat), poultry, eggs, milk, vegetables and fruit (including nuts). These categories align with Australian and New Zealand Standard Product Classification (ANZSPC) codes to enable ease of comparison with other relevant agricultural data sets (both Australian and international). All but the various animal product groups are at the three-digit level. Given that the gap this survey is trying to fill is an overview (and estimate) of the volume and value of organic production generally, it was decided to ask for details on more than the main product produced.

The survey results provide general data at the product groups level, although it must be acknowledged that prices, values and volumes within the categories clearly vary. For example, providing volume and value of fruit is done acknowledging that the price of mangoes is markedly different from that of apples. Nevertheless, it is an important starting point. In future, the only real solution to the lack of detail in this respect would be to conduct an ABS Farm Survey-style census where interviewers attend farms and take down detailed data in predetermined and detailed categories (which is very expensive) or for the industry to agree that adoption and implementation of a national data collection system would benefit the industry.

Representativeness of the data

The data collected, whether from the survey or from certifying organisations, shares the problem of establishing representativeness. For all data, other than area, production volumes

and values, the responses to the survey are reported as a representative sample of the organic industry. In total, 1093 individuals were approached to participate in the survey, 948 of whom were eligible. Of this sample, 397 useable responses were generated; a response rate of 42%. Given the assumption that the total possible population is 1511 fully certified organic farms (see details later in this chapter), the responses constitute approximately 26% of the certified organic farm population. As we have no records from producers in three certifying organisations, neither in the certifying organisation data nor in the survey data, it is likely that Victoria and Queensland are under-represented in these figures.

The randomised sampling method and the sample size provide a comfortable level of reliability: relative standard error of 4.32%. This is calculated at a confidence level of 95%, on a population size of 1511 and sample size of 397. The reliability drops when statistics are reported on questions with smaller response rates. Percentages and averages (means) are reported without any estimation or extrapolation. However, where the intention is to provide industry-wide estimates of areas, values and volumes, a more complex approach to extrapolation is required.

While it is possible to simply report data from the results of the survey or from the analysis of certifying organisation data, each is based on only a proportion of the total industry. However, to fulfil the goal of this research there is a need to arrive at an *industry-wide* figure from this data. To do so requires establishing in what way those cases not included in our responses are different from those that are. Establishing this with any certainty is impossible without a census of the organic industry, which has not been done. As such, two methods are obvious possibilities in terms of extrapolating to arrive at industry-wide estimates.

Perhaps the only set of data that is systematically collected and reported is certified organic exports. This data is reported to AQIS, which collates and reports data. Importantly it reports data by individual certifying organisation. This feature allows one to calculate the percentage contribution to export production by each of the certifying organisations *not* in the samples. If it were assumed that contribution to exports is a relatively accurate reflection of contribution to overall domestic production then it would be possible to weight survey and certifying organisation data accordingly. A similar approach could be adopted on a product group basis. Of course, the weakness in this approach is that some products are less likely to be exported, which means certifying organisations with a lot of these producers will have their contribution to overall domestic production underestimated.

The second option, and the one adopted in this chapter, is to simply assume that those not included in the sample are the same as those in the general organic farm population. This means values, volumes and areas need only be multiplied by the proportion missing from the survey respondents to arrive at industry-wide estimates. The obvious weakness here is that anecdotally we know organic farm sizes vary considerably. This means that while the number of responses to the survey represent coverage of around 26% of the total industry, there is no telling how much of total or individual product group production they represent. While this suggests caution in simply multiplying the results by the percentage of farmers omitted from the study, this is the most transparent approach. In the future, informed industry members can amend any calculations as they see fit to derive what they may feel are more realistic estimates. While an imperfect solution, it provides a basis for estimating key industry-wide parameters.

For the purposes of transparency, Table 1 provides the overall proportion of the certified organic farms assumed to be inside and outside the set of the respondents to survey data. Of course, for some questions the actual number of responses will be lower than the number of respondents to the survey, in which case the number of non-respondents will increase. In such cases non-responses will be considered the same as non-respondents to the survey, which means they will be included in the proportion of the industry not in the sample.

To arrive at the factor to multiply the data received from the survey on a farm basis (area and total value) the following calculation is used.

$$MF = \frac{N}{R - MR}$$

where

MF = multiplication factor for extrapolation

N = total industry

R = number of respondents

MR = missing responses

A worked example follows, assuming that there are no missing responses.

	Total industry	Respondents	Missing responses	Multiplication factor
Survey data	1511	397	determine question by question	3.8

Where figures are extrapolated for each commodity group, the multiplication factor for extrapolation purposes is calculated as follows.

$$MF = \frac{TCG}{CR - CMR}$$

where

MF = multiplication factor for extrapolation

TCG = total commodity group

CR = number of commodity respondents

CMR = commodity missing responses

Based on survey results, it is possible to identify the total number of farms that took part in different production types. The factors in Table 1 assume no missing responses.

Table 1.1 Number of farms producing different commodities

Category	Total commodity group	Commodity respondents	Commodity missing responses	Commodity multiplication factor
Beef	331	87	determine question by question	3.8*
Sheep and goats	118	31	as above	3.8*
Pigs	19	5	as above	3.8*
Poultry	27	7	as above	3.8*
Eggs	68	18	as above	3.8*
Milk	57	15	as above	3.8*
Cereals	217	57	as above	3.8*
Vegetables	486	128	as above	3.8*
Fruit and nuts	593	156	as above	3.8*
Wool	72	19	as above	3.8*

In this chapter data is reported, where available and reliable, from both the survey and from certifying organisations. However survey data is used for the most part. Where projections are made from survey data to the entire industry this is made clear. No apology is made for the use of projections, estimations and qualifications; there is simply insufficient data to be more certain. This should not stop attempts to understand the industry, though limits must be acknowledged. It is not usual in such a report to elaborate on methods adopted. However, in this case it is necessary to highlight to industry the basis of projections and the weaknesses and strengths in existing data gathering arrangements. Importantly, acknowledging limitations points to areas for improvement in the future. It is hoped that this will inform industry discussions about ways to improve data quality and availability to meet the needs of strategic industry planning and development. Regardless of limitations inherent in the data reported here, the present data is the best that is available and, as such, moves the industry in the right direction when it comes to farm-level information.

Both certifying organisation and survey data reported here is for 2003 only. In generalising from this data, the obvious question is to what extent 2003 was a typical year. As is evident in the export data, 2003 was a less productive year for agriculture generally, and organic agriculture specifically, because of the impact of the drought. If one was so inclined, the percentage difference between conventional production figures in previous years and 2003 could be used as a basis for adjusting up 2003 production and value figures. This has not been attempted here.

How many organic farmers are there?

A consistent trend in past reports and articles is that the number of organic farms in Australia is increasing. It is a growth industry. A study by Hassall and Associates (1996) is the most authoritative report of data on farm numbers. The study estimated that organic farm numbers increased from 1260 in 1990 to 1429 in 1995, with 12 per cent of farms involved in broadacre farming, 10 per cent in livestock production and 75 per cent in horticulture (Hassall & Associates 1996). Subsequent work has updated the predictions made by Hassall and Associates for the post-1995 period. In December 1999, the industry was said to consist of

approximately 1663 operators (Macarthur Agribusiness Quarantine and Inspection Resources 1999, p.2). The number of farm operators, said to be increasing at the rate of approximately 7% per year, was predicted to reach around 2300 by the year 2005 (Macarthur Agribusiness Quarantine and Inspection Resources 1999). A recent international report maintains there were only 1380 organic farms in Australia in 2001 (Yussefi & Willer 2003, p.70). Most recently, the Biological Farmers of Australia (2003, p.20) estimated that in mid-2003 there were 2100 organic producers (including those in-conversion). Interestingly, they also disputed the figures reported by Hassall and Associates (1996) for 1990 and 1995, arguing that there were less than 500 producers in 1990 and only 862 in 1995, and reported 1600 producers in 2000 (Biological Farmers of Australia 2003, p.20). These various estimates are reported in Table 2.

Table 1.2 Australia: characteristics of the organic farming industry

	Unit	1990	1995	2000	2005
<u>Hassall and Associates</u>		(est.)	(est.)	(proj.)	(proj.)
Number of organic producers	number	1 260	1 429	1 657	1 920
Total number of producers	number	160 000	137 397	117 988	101 320
Organic producers as proportion of total	%	0.8	1.0	1.4	1.9
	Unit	1990	1995	2000	2003 (mid)
<u>Biological Farmers of Australia</u>		(est.)	(est.)	(est.)	(est.)
Number of organic producers	number	<500	862	1600	2100

Source: Hassall and Associates (1996, p.35), selected elements of Table 3.17; Biological Farmers of Australia (2003, p.20).

The source of such Australian estimates is unclear, given that no statistics are kept on such matters; at least none that are publicly available. This is to be expected given that certifying organisations, which have this data, are by nature competitors and publicly revealing their market share is likely to be unwelcome. A major complicating factor in determining the accuracy of these figures is establishing what is actually being counted. When the author asked for data on certified organic farm enterprises, some certifying organisations included pre-certification, in-conversion and voluntarily deferred figures. Others included only some of these groups and some included processors. In short, the fluctuations and disagreement over farm numbers is most likely because what is being counted is constantly shifting.

An industry source provided the author with the total number of all businesses (including processors and farmers at various stages of certification) certified by each organisation during 2003. This provides an important reference point for estimating the number of organic farm enterprises. The list used for the phone survey provided the total number of certified organic farm businesses from the Tasmanian Organic-Dynamic Producers, the National Association for Sustainable Agriculture Australia and Australian Certified Organic, and whether they were in-conversion, voluntarily deferred or non-farmers. Removing those individuals that were in-conversion, voluntarily deferred or non-farmers from the sample reduced the numbers to 66% of the original figure. The figures provided by the industry source were multiplied by this percentage to arrive at the estimate that there were approximately 1511 certified organic farms in Australia in 2003, excluding in-conversion, pre-certified and deferred farm enterprises, and certified processors.

Data for all certifying organisations on status, whether organic, in-conversion, pre-conversion or voluntarily deferred, is not available. It was, however, made available to the author by several certifying organisations. Table 3 provides a synopsis of the percentage of farm producers falling into each category for these certifying organisations. It is important to note that pre-conversion is underestimated as one certifying organisation did not include these in their records.

Table 1.3 Distribution of organic farms by stage in certification process, 2003

Stage of certification	%
Organic	69
In-conversion	23
Voluntary deferral	6
Pre-conversion	2
Total	100

Source: analysis of certifying organisation data.

The most impressive statistic from Table 3 is the number of farms that are actually in conversion or pre-conversion. This means that while there are currently 1511 fully certified organic producers currently in Australia, a further 20 to 30% increase can be expected as in-conversion producers come on stream within one to three years.

Where are organic farmers located?

The distribution of organic farms by state is reported in Table 4, based on the farm survey and the certifying organisation data. Immediately evident is the degree of consistency between the data from both survey and certifying organisation sources, which gives a greater degree of confidence in the accuracy of this distribution.

Table 1.4 Distribution of organic farms by state

State	Certifying organisation data		Survey data	
	frequency	%	frequency	%
NSW	310	28	114	29
Qld	288	26	111	28
Vic	224	20	81	20
Tas	54	5	17	4
SA	105	10	35	9
WA	96	9	35	9
NT	17	2	4	1
ACT	1	1	0	0
Total	1 095	100	397	100

Source: certifying organisation and survey data.

Table 4 shows that most certified organic farms are concentrated on the East Coast. Indeed, over three quarters of all organic farms are located in Victoria, Queensland and New South Wales. Unfortunately the data does not also allow farms to be designated by dominant enterprise (for example, beef, poultry and fruit).

What is the organic certified farm area?

A widely quoted measure of the growth or size of the organic industry in Australia and overseas is the certified organic area. The Hassall and Associates (1996) report is the most authoritative when it comes to data on area, and is widely quoted. Table 5 reports the major findings and projections.

Table 1.5 Australia: characteristics of the organic farming industry

Item	Unit	1990	1995	2000	2005	
<i>Hassall and Associates</i>		(est.)	(est.)	(proj.)	(proj.)	
Average organic area per farm	ha	119.4	234.8	329.3	461.8	
Total organic area	ha	150 000	336 000	546 000	887 000	
Average organic farm size	ha	295.5	783.2	1 048.1	1 402.6	
Total area of organic farms	ha	372 000	1 119 000	1 736 000	2 694 000	
		Unit	1990	1995	2000	2003 (mid)
<i>Biological Farmers of Australia</i>		(est.)	(est.)	(est.)	(est.)	
Total organic area	ha	150 000	335 000	7 600 000	10 000 000	

Source: Hassall and Associates (1996, p.35), selected elements of Table 3.17; Biological Farmers of Australia (2003, p.20).

As is evident from Table 5, organic farmers are able to certify part of their farms. Further analysis of survey results indicated that around 93% of the total farm area of organic farms is certified as organic.

Table 5 also shows more recent estimates provided by the Biological Farmers of Australia (2003, p.20) who correct the projected figures provided in Hassall and Associates (1996) and report a certified area of 7.6 million hectares in 2000 and 10 million hectares in mid-2003. These estimates represent a rapid increase in area over that predicted in Hassall and Associates (1996) and can be attributed in large part to the recent addition of large rangeland areas of Australia for organic beef cattle production (McCoy & Parlevliet 2000, p.57).

It is often difficult to ascertain whether past figures quoted in Australia cover areas that are in-conversion or just fully converted hectares. In the survey data reported in this chapter, only responses from fully certified organic producers were included (although it is likely some farms may have a small fraction of the farm in-conversion and have been included in the sample). Therefore, based on the figures generated from the survey of organic farmers, it is possible to estimate the likely area of organic farms in Australia and then the certified organic area in Australia. Table 6 reports that the estimated total certified area in 2003 was 7.9 million hectares. This accounts for around 1.7% of the total agricultural area of Australia (460 million hectares). The average organic area per farm across the board is 5239 hectares, but this figure includes both broadacre beef producers and small horticultural enterprises.

It is important to note that the difference between the Biological Farmers of Australia (2003) estimate of 10 million hectares and the estimate in this report does not necessarily mean that there has been a decline in certified organic area. It may be that the Biological Farmers' estimate was too high, or that the producers included in this survey operate on average smaller

properties than the average of all organic farmers. Some of the difference may also be explained by the possible inclusion of in-conversion farms.

Table 1.6 Total farm area of organic farms and total certified organic farm area for Australia, 2003

	Total farm area for organic properties ha	Total certified organic farm area ha	Number of farms
Survey response total	2 227 629	2 069 391	395
Estimated Australian total	8 521 384	7 916 075	1 511

Source: survey data. Multiplication factor = 3.82.

Based on the survey results it is possible to gauge the distribution of this organic certified area by state. As reported in Table 7, the data indicates that almost three quarters of all organic area is in Queensland. At first blush this appears an unlikely statistic. However the vast majority of this appears to come from beef operations in the rangelands of Queensland.

Table 1.7 Distribution of total certified organic farm area by state, 2003

State	% of organic area
NSW	4.1
Qld	74.8
Vic	0.4
Tas	0.1
SA	20.3
WA	0.3
NT	0.0

Source: survey data.

The survey data provides farm area and certified area only of those farms that are fully certified. However, the data from certifying organisations' records also provides data on certified area. Importantly, the records from two certifying organisations provided a breakdown by organic category: organic, in-conversion and voluntarily deferred. This data is reported in Table 8.

Table 1.8 Farm area by organic category, % of organic area

Organic category	%
Certified organic	32
In-conversion	67
Voluntarily deferred	1
Total	100

Source: area statistics from Tasmanian Organic-Dynamic Producers and Australian Certified Organic. Only data with area values is included.

The results in Table 8 suggest that the area of organic certification could multiply threefold over the next two or three years. Unfortunately the data did not allow a breakdown into product or commodity type, so it is not possible to determine the implications for specific product volumes of the transition from in-conversion to full organic certification. However, it is likely that most of the area in-conversion is large rangeland areas for organic beef cattle production.

What do organic farmers produce?

Farms are certified organic by an AQIS-approved certifying organisation for any range of farming activities. The records of certification organisations suggest that while many farms are certified for a range of product types, many produce only a few of these at any one time. Nevertheless, it is often the case that farms produce a variety of products across what are considered different commodity or product groups. That is, they may produce fruit, vegetables, meat and eggs from the one farm enterprise. It is important to remember that the products that certifying organisations record are those produced under organic certification *and* sold as organic under that certification in 2003. Certified organic farms may produce organic produce but sell outside the system. This data is not recorded by certifying organisations.

Table 9 reports the percentage of farms in the certification data that are certified to produce various products or commodities (but which did not record values or volumes for 2003) or are producing (and did record a volume and value for 2003). These are categorised by Australian and New Zealand Standard Product Categories (ANZSPC). This data includes those farms that are in-conversion.

Table 1.9 Proportion of farms involved in different product categories

ANZSPC	Product category	Number	% of farms ^a
211	Meat	8	1
0211	Cattle	267	24
02112.1	Sheep	436	39
02112.2	Goats	10	1
02121	Pigs	13	1
02122	Poultry	31	3
02900.25	Eggs	59	5
02900.05	Milk	37	3
029	Other animal	67	6
013	Fruit and nuts	979	88
012	Vegetables	920	83
011 & 014	Cereals	442	40
045	Plants and seeds	36	3
016	Beverages	21	2
018	Sugar	23	2
019	Raw materials	272	24
na	Other	21	2

Source: certifying organisation data.

^a This is calculated as proportion of farms in certification records, n = 1112.

A farm-level view of the Australian organic industry

Other animal includes honey. Cereals include grains, pulses and oilseeds.

Table 10 provides the same information based on the farm survey sample. However, unlike the certification data, the survey collected data based on a preselected set of product groups, only some of which are included in Table 9. This makes direct comparison of percentages between tables somewhat difficult. Bearing in mind that a single farm may produce more than one product, the survey data shows that fruit, vegetables and cereals are the products grown on the largest number of certified organic farms. It is very similar to that in the certification data above, which again gives some added confidence to both sets of findings.

Table 1.10 Proportion of organic farms involved in producing different products, 2003

Product	Number	%
Beef	87	21.9
Sheep and goats	31	7.8
Pigs	5	1.3
Poultry	7	1.8
Eggs	18	4.5
Milk	15	3.8
Cereals	57	14.4
Vegetables	128	32.2
Fruit and nuts	156	39.3
Wool	19	4.8
Cotton	0	0.0
Sugar	5	1.3
Coffee beans	3	0.8
Tea	5	1.3

Source: farm survey data.

Sample size = 397. Each farm may produce multiple commodities.

Cereals include grains, pulses and oilseeds.

Table 11 develops the data in the previous two tables to highlight the combination of products that are produced on Australian organic farms. Each cell represents the proportion of all farms in the survey data that partook in different pairings of commodity production in 2003. Some common patterns of combined production types are identifiable. These include livestock production of various kinds and cereals and/or wool production. Fruit and vegetable production is also a very common combination. Conversely, milk, sugar, coffee and tea producers tend not to produce multiple products on their farms.

Table 1.11 Cross tabulation for mix of product categories on Australian organic farms, %

Product	Beef	Sheep and goats	Pigs	Poultry	Eggs	Milk	Cereals	Vegetables	Fruit and nuts	Wool	Cotton	Sugar	Coffee beans	Tea
Beef	21.91	3.78	0.50	0.00	1.01	0.25	4.79	2.02	3.27	3.02	0.00	0.00	0.00	0.00
Sheep and goats	.	7.81	0.76	0.50	0.76	0.00	4.03	0.25	1.26	3.53	0.00	0.00	0.00	0.00
Pigs	.	.	1.26	0.00	0.25	0.00	0.25	0.00	0.00	0.50	0.00	0.00	0.00	0.00
Poultry	.	.	.	1.76	1.01	0.00	0.76	0.50	0.76	0.25	0.00	0.00	0.00	0.00
Eggs	4.53	0.00	0.50	1.26	2.27	0.50	0.00	0.00	0.00	0.00
Milk	3.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cereals	14.36	1.76	1.76	2.77	0.00	0.50	0.00	0.00
Vegetables	32.24	11.84	0.25	0.00	0.00	0.00	0.50
Fruit and nuts	39.29	0.50	0.00	0.00	0.25	0.25
Wool	4.79	0.00	0.00	0.00	0.00
Cotton	0.00	0.00	0.00	0.00
Sugar	1.26	0.25	0.00
Coffee beans	0.76	0.00
Tea	1.26

Each cell is a percentage of total farms surveyed, n = 397. Each farm may produce multiple commodities. Cereals include grains, pulses and oilseeds.

What is the farm-gate volume of organic sales?

No data on the volume of organic production, with the exception of Tasmanian survey data (Whitten 2003), is publicly available. Various estimates are available of the farm-gate value of organic production, which are discussed in a subsequent section of this chapter. Data for total volume of organic production was collected via the organic farm survey for a set of predetermined product groups: beef (for meat), sheep and goat (for meat), cereals (including grains, pulses and oilseeds), pig (for meat), poultry, eggs, milk, vegetables, and fruit (including nuts). Other raw commodities are produced at farm level from other product categories. It is possible that the *other* category could be estimated from the certifying organisation data, where data (albeit patchy) is available for all product groups. However, this approach has not been attempted due to the poor quality of certifying organisation data on volume and value.

Table 1.12 Farm-gate sales volumes from certified organic farms in Australia, 2003

Product	Survey number	MF	Survey results		Estimated Australian total	
			org sold as conventional	org sold as organic	org sold as conventional	org sold as organic
Beef (kg live weight)	68	4.86	961 814	2 374 616	4 676 113	11 544 824
Sheep and goats (kg live weight)	24	4.91	659 930	353 215	3 239 156	1 733 697
Pork (kg live weight)	5	3.80	1 400	28 100	5 320	106 780
Poultry (kg live weight)	6	4.43	1 500	12 980	6 650	57 545
Eggs (dozen)	14	4.89	0	78 793	0	384 960
Milk (l)	10	5.70	1 620 255	2 640 000	9 235 454	15 048 000
Cereals (tonnes)	44	4.92	3 192	8 501	15 713	41 848
Vegetables (tonnes)	96	5.07	59	21 541	299	109 141
Fruit and nuts (tonnes)	130	4.56	1 395	4 278	6 361	19 508

MF = multiplication factor.

Each farm may produce multiple commodities.

Cereals include grains, pulses and oilseeds.

Table 12 reports the volume of certified organic product sold from the farm, both that which was organic and sold as conventional and that which was organic and sold as organic. By adding these totals one can arrive at the total certified organic sales from the farm (whether sold as conventional or organic). Table 13 provides similar data on a state-by-state basis. While some cells register no production in some states, production does occur but was too small to appear in the sample.

Table 1.13 Estimated quantities of organic product sold as organic or conventional by product category and state, 2003

Product	Organic sold as	Estimated volumes by states and territories						
		NSW	Qld	Vic	Tas	SA	WA	NT
Beef (kg live weight)	organic	1 070 172	8 820 414	258 795	196 636	1 057 079	137 538	na
	conventional	307 881	3 400 056	0	374 220	592 259	0	na
Sheep and goats (kg live weight)	organic	1 505 574	na	93 688	44 100	57 992	29 400	na
	conventional	3 058 090	na	180 957	0	0	0	na
Pigs (kg live weight)	organic	1 520	91 200	2 660	na	11 400	na	na
	conventional	0	0	5 320	na	0	na	na
Poultry (kg live weight)	organic	50 502	6 645	354	na	0	na	na
	conventional	0	6 645	0	na	0	na	na
Eggs (dozen)	organic	178 096	173 826	4 880	0	20 779	6 930	na
	conventional	869 107	848 269	23 814	0	101 402	33 816	na
Milk (l)	organic	0	0	10 488 000	na	4 560 000	0	na
	conventional	1 454	1 140 000	8 094 000	na	0	na	na
Cereals (tonnes)	organic	26 776	10 001	1 441	na	3 259	176	na
	conventional	14 906	0	0	na	980	0	na
Vegetables (tonnes)	organic	2 199	4 517	101 431	60	722	70	na
	conventional	11	269	5	3	10	0	na
Fruit (tonnes)	organic	1 155	4 007	9 007	324	3 171	1 777	66
	conventional	3 280	26	1 127	0	1 905	18	5

Source: farm survey data. Multiplication factors for estimates were the same as for Table 12. Cereals include grains, pulses and oilseeds.

An issue raised frequently in the literature on marketing and sales is that of managing volatile supply and demand. This is said to be especially problematic for larger producers operating in small markets where peaks in supply mean that there will often be short-term flooding of the market. In these cases, producers may have to sell organic produce on the conventional market (Monk 1997, p.62). The only figures available for the share of organic produce sold as organic are reported in Wynen (2003, p.8). The average across all commodity groups was reported as 65%. However this was said to vary widely with 100% of legumes sold as organic but only 10% of organic wool or sheep meat sold as organic. Figures of this nature are important in evaluating over- or undersupply.

Table 14 reports the percentage of sales volume of certified organic produce that was sold as certified organic. Within these aggregate percentages there was a range of responses indicating a high degree of variation among farmers with respect to who is and who is not able to sell their produce as organic.

Table 1.14 Estimated % volume of organic produce sold as certified organic

Product	% volume sold as organic
Beef	71.2
Sheep and goats	34.9
Pork	95.2
Poultry	89.6
Eggs	100
Milk	62
Cereals	72.7
Vegetables	99.7
Fruit and nuts	75.4

Source: farm survey data

Cereals include grains, pulses and oilseeds.

Plans for future production

An important statistic for industry planning is the extent to which organic producers intend to expand or contract production. That is, what is their future commitment to organic production? In the survey, producers were asked to firstly indicate whether their production of each commodity was likely to increase, decrease or stay the same over the next three years. Secondly, those who indicated a reduction or increase were asked to indicate the likely percentage increase or decrease over the next three years. The results are reported in Tables 15 and 16. However, it is important that readers realise these figures do not include the intentions of producers who are presently in-conversion.

Table 15 shows that less than 50% of producers currently producing eggs, poultry and cereals will increase production over the next three years. Further research into why these plans come about and what disincentives exist to expanding production is clearly required to shed light on this finding. This is particularly crucial in cereals production, given this is an area that is crucial to the expansion in poultry, egg, milk and other forms of livestock production where feed availability is an ongoing problem.

Table 1.15 Direction of three-year projected changes in organic volume, by product

Product		Increase	Decrease	Stay the same	Don't know	Total
Beef	frequency	16	13	20	7	56
	%	53	15	23	8	100
Sheep and goats	frequency	16	5	8	2	31
	%	52	16	26	6	100
Pork	frequency	4	na	1	na	5
	%	80	na	20		100
Poultry	frequency	3	4	0	0	7
	%	43	57	0	0	100
Egg	frequency	7	3	8	0	18
	%	39	17	44	0	100
Milk	frequency	7	0	4	1	12
	%	58	0	33	8	100
Cereals	frequency	25	10	16	5	56
	%	45	18	29	9	100
Vegetables	frequency	88	12	20	7	127
	%	69	9	16	6	100
Fruit and nuts	frequency	113	11	26	6	156
	%	72	7	17	4	100

Source: farm survey data.

Table 15 identified the percentage of individuals who intend to increase or decrease production over the next three years. Table 16 reports the average percentage increases and decreases predicted by those survey respondents in particular product groups. With the exception of beef, all categories show average projected increases per farm to be considerably larger than intended decreases. Of course, what these mean in terms of overall volumes is contingent on the overall production levels of those farms increasing versus those decreasing.

Table 1.16 Mean three-year production increases and decreases by product, %

Product	Increase	Decrease
Beef	60	66
Sheep and goats	155	63
Pork	190	na
Poultry	267	70
Eggs	210	83
Milk	58	0
Cereals	88	67
Vegetables	124	63
Fruit and nuts	128	50

What farmers are paid for their organic produce

While the level of farm-gate prices and price premiums is no doubt crucial to developing the organic industry, data is hard to find, and the basis on which many estimates are provided is often unclear. The Hassall and Associates (1996, p.21) study reported on the farm-gate price premium farmers believe they need to make their enterprise viable. They reported that 45% of survey respondents require a premium of between 10 and 20%, while one-third require premiums of between 20 and 50%. Based on the price premiums reported by respondents, 30% receive no price premiums, 41% receive prime premiums between 10 and 20% and 21% of respondents receive premiums of between 20 and 50% (Hassall & Associates 1996, p.22). They reported significant variation between product types.

The certifying organisation data that is available does not provide farm-gate prices explicitly. However, of the over 3000 entries for farm production, 233 provided data for *both* volume and value of production. By dividing these figures it was possible to calculate average farm-gate prices for some products. These are reported in Table 17. It is important to note that the range of prices fluctuates enormously and these figures should therefore be used with care. For example, the farm price for a dozen eggs sold as organic ranges from \$1.20 to \$4.30. As would be expected given the variety of products grouped under the categories *fruit* and *vegetables*, in particular, but also under *grains*, variations in prices were vast. It was therefore decided that these figures would not be included here.

Table 1.17 Average organic farm-gate prices from certifying organisations' levy data

Milk	Beef	Sheep	Poultry	Eggs
\$/l	\$ per head	\$ per head	\$ per bird	\$ per dozen
0.53	321.11	32.41	2.76	2.20

Source: certifying organisation data.

Given the structured and highly organised nature of milk production, the survey included a dedicated question on farm-gate organic milk pricing. Table 18 reports by state the average farm-gate prices for organic milk sold as organic. These figures are from a very small sample (frequency is the number of responses) but they do provide an indicative range of pricing at the farm gate.

Table 1.18 Average price for organic milk, by state

State or territory of farm	Average price c/l	Frequency
NSW	45.00	1
Qld	30.00	1
Vic	40.25	4
Tas	na	0
SA	38.40	2
WA	na	0
NT	na	0
Total	39.10	8

Source: farm survey data.

The farm-gate value of organic sales

The question of the value of organic farm production is one where there is great interest but also where data is less reliable and harder to come by. Various estimates of the farm-gate value of organic production exist. For 2000–01, Wynen (2003, p.5) estimated the total farm-gate value of organic production to be \$89 million, based on data from three certifying organisations (two of whom were major certifying organisations). This figure includes both products sold on the organic and conventional market, but excludes herbs certified by the Organic Growers Association. In terms of future growth, in 1999 it was estimated that by 2005 the farm-gate value of organic goods would be \$250 million (Macarthur Agribusiness Quarantine and Inspection Resources 1999). Tasmanian research shows the value of its organic production at farm gate rose from a 2000–01 level of \$3.386 million to a 2001–02 figure of \$4 million and an estimate for 2002–03 of around \$6 million (Whitten 2003, p.3).

The data from certifying organisations on the value of production is very poor. While it has reportedly been used to calculate figures for value of farm-gate production in the past, it was not deemed sufficiently robust to use to compile an assessment of value directly in this chapter. The farm survey data probably provides a better assessment of value at farm gate. In Table 19 an estimate is given of the total farm-gate value of sales of certified organic produce by state. Each respondent was asked to estimate the average annual receipts from their property and then the percentage of that accounted for by sales of certified organic products. Multiplying these answers provides the figures below. The estimated value of farm receipts from the sale of organic products (whether as conventional or organic) was \$140.7 million in 2003. As will be evident later, this exceeds the sum of the value for individual commodity groups for which data was collected in this survey. The difference can be attributed to the value of production of commodities and products not included in specific product categories. It can also arise from the sale of goods as conventional which should not be included in values for organic commodity groups reported later in this chapter. It is important to note that these figures are estimates and not exact data.

Table 1.19 Total farm-gate receipts from sale of organic production, by state

State or territory of farm	Survey sample sum of receipts \$	Estimated total sum of receipts \$
NSW	7 356 261	28 836 545
Qld	15 131 209	59 314 339
Vic	8 269 380	32 415 970
Tas	482 300	1 890 616
SA	3 033 950	11 893 084
WA	1 591 000	6 236 720
NT	21 000	82 320
Total	35 885 100	140 669 594

Source: farm survey data.

Number of responses to this question = 309. Multiplication factor = 3.92

The survey data shows that on average 78% of total farm turnover (excluding off-farm and non-farm income) comes from the sale of organic production. Table 20 provides an average figure for each state. It shows that there is little variation between the states.

Table 1.20 Mean proportion of total farm receipts generated from the sale of organic produce, by state

	NSW	Qld	Vic	Tas	SA	WA	NT
Mean (%)	75.18	75.30	75.24	85	88.34	82.12	100
Frequency	112	104	76	17	32	33	4

Source: farm survey data.

Commodity-level analysis

Each farmer in the organic farm survey was asked to identify the value of the sales of organic products sold as certified organic produce for each product group. Table 21 reports the total values for each product group from our sample.

Table 1.21 Sum of receipts from sale of certified organic products as organic, by product category, 2003

Product category	Survey sample sum of receipts \$	Frequency	Multiplication factor	Estimated national total sum of receipts \$
Beef	9 659 090	61	5.42	52 349 101
Sheep and goats	519 721	21	5.61	2 915 387
Pigs	157 000	4	4.75	745 750
Poultry	79 700	6	4.43	353 337
Eggs	151 240	13	5.26	795 755
Milk	1 040 000	8	7.13	7 410 000
Cereals	3 730 444	46	4.71	17 565 525
Vegetables	4 461 887	89	5.47	24 384 964
Fruit and nuts	3 857 970	107	5.54	21 373 875
Total	23 657 052	355		127 893 695

Source: farm survey data.

Cereals include grains, pulses and oilseeds.

Based on this data, the national estimate for total sales of organic sold as organic was in the vicinity of \$128 million in 2003. This figures does not include any on-farm processing, products that do not fit into the above categories or organic products sold as conventional. Taking these factors into account, a greater difference between the \$127.9 million reported here and the \$140.7 million reported in Table 19 would be expected. It may be that the \$127.9 million is an overestimate or that \$140.7 million is an underestimate. Whatever the case it is important to note that these figures are estimates and not exact data.

Reviewing the data presented here also suggests that, if anything, the beef figure is probably overestimated. Given that this sector of the industry has a few very large rangeland producers along with numerous very small hobby farmers, extrapolating from the sample is more hazardous.

Patterns of conversion and information provision

Recent European research has suggested that early adopters of organic farming are more likely to be younger and from a non-farm family background, while those that followed later

tend to be from conventional farm backgrounds and more likely to test out organic farming on part of their property before converting the entire farm (Padel, 2001). There has been little if any similar research in Australia. This section of the chapter looks at how farmers come to be organic, their views on the adequacy of information for conversion and the length of time they have been certified organic. The data is derived from responses to questions in the organic farm survey.

Pathways to organic

In planning industry development activities an important question is the pathways that farmers take in becoming organic. A key indicator is the extent to which certified organic farmers come from the ranks of conventional farmers or from non-farmers entering farming directly as certified organic producers. Table 22 summarises the figures by state from the organic farm survey. It indicates that of all organic farmers surveyed, the majority converted from conventional, although 38% started up their farm as organic.

Table 1.22 Types of certified organic farms, by state

Organic type	NSW	Qld	Vic	Tas	SA	WA	NT	Total
Converted from conventional (%)	64	63	63	53	66	49	75	62
Start-up as organic (%)	36	37	37	47	34	51	25	38
Total (%)	100	100	100	100	100	100	100	100
Total number	114	111	81	17	35	35	4	397

Source: farm survey data.

Table 23 breaks up the number of certified organic farms by product categories. It is important to remember that each farm often produces more than one product and therefore overall counts in Table 23 are higher than in Table 22.

Table 1.23 Types of organic farms, by product

Product	Organic type %		Total number
	converted	start-up	
Beef	84	16	87
Sheep and goats	84	16	31
Pigs	100	0	5
Poultry	57	43	7
Eggs	72	28	18
Milk	92	8	12
Cereals	88	12	57
Vegetables	45	55	128
Fruit and nuts	56	44	156
Wool	89	11	19
Cotton			0
Sugar	100	0	5
Coffee beans	33	67	3
Tea	20	80	5

Each farm may produce multiple commodities. Cereals include grains, pulses and oilseeds.

Table 23 indicates that in the animal and broadacre product groups, the majority of producers converted an existing farm to organic production. This pattern is different from fruit and vegetable producers, where around half of the producers entered as a first-time certified organic producer. At the minimum, this identifies the way pathways vary between commodity groups and may provide some hints at methods of recruitment and communication. Interestingly, relatively new enterprises in Australian agriculture, such as coffee and tea producers, have a very large percentage of growers starting up as organic rather than converting an existing enterprise.

In a recent European study, Padel (2001) argued that farmers often tested out organic farming by first converting part of their property. While it is not possible to test this hypothesis completely with the survey data, in Table 25 the average percentage of the farm converted is reported for those who entered directly into organic farming and for those who converted to organic. Interestingly, both groups have converted almost the same amount. This suggests that less testing is occurring than is often assumed. A better test of the thesis would be to correlate this statistic with the length of time converted, or to compare the proportion of the area converted between those in-conversion and those fully converted.

Table 1.24 Proportion of farm converted, by pathway to organic

	Converted from conventional	Start-up as organic
Mean %	82.72	82.27
Standard deviation	31.32	32.47
Frequency	244	151

Attitudes to information availability and the relative costs of organic production

The availability of information to interested farmers regarding conversion, along with their beliefs about the costs and rewards of conversion, are likely to be important factors in the expansion of organic production. In the farm survey several questions were asked on these issues. Table 25 reports the level of agreement with four questions. These have been split between those who converted and those who started out as organic. The highest percentage for each question is in bold.

What is immediately clear is that both subgroups of organic farmers have similar responses to these questions. In excess of 40% of these farmers agree that there is sufficient information and assistance available to those wishing to convert. A similar proportion agrees that the financial rewards of conversion are greater than the costs. Conversely, around 40% of these groups disagree that input or marketing costs associated with organic farming are more than for conventional production. Around 25% of respondents in both subgroups take the opposing view on each question.

Table 1.25 Attitudes of converted or start-up organic farmers

Questions	Degree of agreement or disagreement with question, %						Total % (number)
	SA	A	N	D	SD	DK	
<i>Converted from conventional</i>							
There is sufficient information and assistance available to farmers wishing to convert to organic farming.	6	48	11	25	7	3	100 (247)
The financial rewards of becoming a certified organic producer are greater than the financial costs.	12	45	15	23	2	3	100 (247)
Input costs of organic farming are higher than conventional farming.	9	26	9	49	5	2	100 (247)
Marketing costs of organic farming are higher than conventional farming.	5	34	10	42	1	8	100 (247)
<i>Start-up as organic</i>							
There is sufficient information and assistance available to farmers wishing to convert to organic farming.	7	41	9	25	11	7	100 (151)
The financial rewards of becoming a certified organic producer are greater than the financial costs.	8	44	15	25	3	5	100 (151)
Input costs of organic farming are higher than conventional farming.	9	33	7	39	3	9	100 (151)
Marketing costs of organic farming are higher than conventional farming.	7	30	7	40	1	15	100 (151)

Source: farm survey data.

SA = strongly agree, A = agree, N = neither agree nor disagree, D = disagree, SD = strongly disagree, DK = don't know

Length of time as organic

In order to get a sense of how long individuals surveyed have been involved as organic producers, each was asked to nominate the years they had been certified organic, not including time as pre-certification or in-conversion. Table 26 provides the average (or mean) response by state and in total. The average across the sample is 7.5 years. There is a small variation by state with a range from 6.35 in Tasmania to 9.23 in Victoria.

Table 1.26 Time as a certified organic farm, by state

	NSW	Qld	Vic	Tas	SA	WA	NT
Mean years	7.46	8.59	9.23	6.35	7.26	6.94	7
Frequency	114	111	81	17	35	35	4

Source: farm survey data.

Table 27 provides the same data by product type. Cereals, wool and sugar producers appear to have been on average certified for more years than other types of producers. Again, the ranges within categories are very wide.

Table 1.27 Time as a certified organic producer, by product

Product	Mean years	Frequency
Beef	8.92	87
Sheep and goats	9.87	31
Pigs	7.80	5
Poultry	4.29	7
Eggs	6.22	18
Milk	5.83	12
Cereals	10.42	57
Vegetables	6.75	128
Fruit and nuts	9.12	156
Wool	13.84	19
Cotton	na	0
Sugar	21.60	5
Coffee beans	4.00	3
Tea	9.20	5

Source: farm survey data.

Each farm may produce multiple commodities.

Cereals include grains, pulses and oilseeds.

What are the characteristics of organic farmers?

The farm survey included several questions relating to the age, education and farming background of organic farmers. While this type of data may seem less important than that on production levels, for example, it provides important clues for developing communication and extension strategies for the organic industry.

In terms of farm economics, the survey established the average level of farm equity (ownership) at 82%. Table 28 provides this figure across the states.

Table 1.28 Farm equity levels, by state

	NSW	Qld	Vic	Tas	SA	WA	NT
Mean	79.37	82.22	84.23	82.65	86.88	82.66	87.50
Frequency	98	95	71	17	32	32	4

Source: farm survey data.

It is often assumed by observers of the organic industry that it is populated, perhaps more than the general agricultural industry, by hobby farmers or part-time farmers. Table 29 reports that around 77% of certified organic farmers state that their farm business is their main occupation.

Table 1.29 Proportion of industry where farm business as main occupation, by state

	NSW	Qld	Vic	Tas	SA	WA	NT	Total
Main occupation %	75	86	77	71	66	77	50	77
Not main occupation %	25	14	23	29	34	23	50	23
Frequency	114	111	81	17	35	35	4	397

Source: farm survey data.

Table 30 reports the educational achievement of organic farmers in the farm survey. It shows over a third of organic producers have a university degree or higher level of academic achievement. This is considerably higher than one would expect in the general farming population.

Table 1.30 Educational level achieved by organic farmers

Educational level	Frequency	%
Infants or primary school	9	2
Secondary school	174	44
Technical and further educational institution	77	20
University or other higher educational institution	129	33
None	1	0
Don't know	3	1
Total	393	100

Source: farm survey data.

Table 31 shows the sample comprises 25% women. This is significant as the survey interviewers requested to speak with the individual who could be considered the main operator of the property or farm business. Experience with social surveys among agricultural communities suggests that this approach often results in the male adult responding. The extent to which organic farming, compared to conventional farming, directly involves female Australians is difficult to ascertain from this survey. One could, however, speculate that this points to more direct involvement by women. It is certainly an important area for future research, particularly in the context of mounting farmer education and extension activities.

Table 1.31 Organic farmers, by gender

Gender	Frequency	%
Male	291	75
Female	102	25
Total	393	100

Source: farm survey data.

Table 1.32 Mean ages of organic farmers, by state

Location	Mean age	Standard deviation	Frequency
NSW	50.88	10.07	111
Qld	49.06	10.26	106
Vic	51.98	10.21	80
Tas	51.82	8.26	17
SA	52.03	9.63	35
WA	50.63	10.25	32
NT	61.50	12.66	4
ACT	na	na	0
Australia	50.84	10.13	385

Source: farm survey data.

Statistics refer only to participants who answered both 'year born' and 'state' questions.

It is often reported that organic farmers tend to be inexperienced farmers or those with urban backgrounds. Indeed, this is the evidence from early European social research (see Padel 2001). To investigate this question, survey respondents were asked whether their parents were in farming before them. The responses are reported in Table 33. More than 40% of the sample is from a non-farming background. In the context of setting extension priorities and looking at the best avenues to make contact with farmers, this data suggests that many producers are new to farming and may not have family networks to rely on and learn from. Whether non-family, community and social networks compensate for this is a point for additional research.

Table 1.33 Organic farmers – were their parents also farmers?

	Frequency	%
Yes	233	59
No	159	41
Don't know	1	0
Total	393	100

Source: farm survey data.

Further analysis comparing the organic farmers surveyed in this sample with conventional farmers is necessary before more can be said about the degree of difference in terms of attitudes, and social and demographic characteristics. Nevertheless, the data provides some hints as to the characteristics of organic farmers as a cohort within Australian agriculture.

Organising and representing the organic industry

European research has established that at least part of the explanation for growth in the organic agriculture industry lies in the structure and level of organisation of organic farmers and other industry segments (Michelsen 2001). This is also evident in the organisation of conventional agricultural and rural industries. The organic industry has many farmers' associations, certifying organisations and the umbrella body, the Organic Federation of Australia. In the organic farmer survey, respondents were asked whether they thought there was a need for a peak national organisation to represent the organic industry. They were also

asked whether they thought they currently had a group capable of providing this role and, if so, to identify that group. The results of these questions are reported in Table 34.

Table 1.34 Do we need or do we have a dedicated peak national organisation to represent the organic industry?

Location	Perceived need for %			Perceived currently have %		
	yes	no	don't know	yes	no	don't know
NSW	79	9	12	48	42	11
Qld	75	15	10	36	53	11
Vic	80	9	11	40	46	15
Tas	94	6	0	24	53	24
SA	86	11	3	43	37	20
WA	100	0	0	55	30	15
NT	75	25	0	25	50	25
ACT	0	0	0	0	0	0
National %	81	10	9	42	45	13
(number)	(319)	(39)	(35)	(164)	(176)	(53)

Source: farm survey data.
Percentages sum across rows.

The results illustrate that the overwhelming number of organic farmers perceive a need for a dedicated national peak organisation for the industry. Responses with respect to whether an existing group meets this need were split almost down the middle. Of those who nominated a current group as filling this role, the responses were reasonably equally distributed between the two larger certifying organisations and the Organic Federation of Australia. To some extent this is a product of the sample group for the survey, the larger part of which came from these two certifying organisations.

Conclusion

This chapter reported data on the farm-level statistics of the Australian organic agricultural industry. The majority of data was collected via a survey of organic farmers. Extrapolating from this data provides a picture of the size, volume and value of organic production at the farm level. For instance, for 2003 one can report an estimated total of 1511 fully certified organic farms, covering a certified area of almost 8 million hectares. The total value of production was estimated at \$140.7 million for total production and \$127.9 million for those product groups on which information in the survey was collected.

This data may be useful as a one-off snapshot but what is more important is building a series of data spanning several years, collected and analysed in a similar manner. This time-series data set will provide a tool for communication and planning for the industry. Just how this can be achieved is a difficult question. Clearly, certifying organisations are best placed to routinely collect data on their clients. However, their purpose is primarily to collect levy income and examination of their data shows it is generally patchy. To use this data in the future more effort will need to be made to ensure data is collected using common categories and that missing data is noted so that estimates can be developed and inserted. Making progress in this direction is an important challenge for the industry but one that will be well worth the effort.

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CHAPTER 2

Organic food supply chain relations and collaborative marketing

Darren Halpin

Centre for Social Science Research, Central Queensland University

Introduction

The growth and profitability of the organic food industry hinges in part on the sound management of its supply chain relationships. Ensuring that relationships between farmers and other supply chain members are well structured and able to provide meaningful feedback on market needs is crucial to establishing and sustaining demand-focused supply chains.

While it is clearly important for some organic farmers to market their produce directly to consumers or retailers, a study by Hassall and Associates (1996) reported that most organic produce in Australia is sold to wholesalers and/or processors. Past research has not extended to an examination of the extent of relationships formed between farmers and downstream supply chain partners, nor the type of information flows facilitated by these relationships.

A related issue that has been the subject of considerable attention within the organic agriculture industry (and agriculture generally), both in Australia and abroad, is that of farmer collaboration in marketing. Managing volatile supply and demand is a problem raised consistently in discussions on organic marketing and supply chain development. This is understood to be especially problematic for larger producers operating in small markets where peaks in supply mean that there will often be short-term flooding of the market, in which case producers may need to sell organic produce on the conventional, non-organic market (Monk 1997, p.62). Inconsistent supply is noted as one of the major factors constraining the growth of the industry. In this context it is often apparent that a collaborative approach would lead to more significant volumes to capitalise on market opportunities (Monk 1997, p.64), as well as cost-efficiencies in distribution and marketing. Again, there is an absence of data on the extent of collaboration that exists and the attitudes of organic farmers towards participating in collaborative networks in the future.

To address the gaps in previous research, this chapter asks three main questions:

- to whom do farmers consign (whether by sale or otherwise) their goods in the first post-farm-gate step and in what proportions?
- what type of relationships do organic farmers have with these downstream supply chain businesses?
- what type of involvement do farmers have, or wish to have, in collaborative forms of marketing?

Answers to these questions are reported from a survey of organic farmers conducted in June 2004 (see Chapter 1, A farm-level view of the Australian organic industry, for a discussion of the sample and method). The data was collected and is therefore reported on a commodity or product group basis.

Supply chain relationships

The survey of organic farmers first asked each operator which supply chain partners, as identified in Table 2.1, they deal with in selling their organic product. Those that did deal with each of these supply chain links were asked to elaborate on the type of relationship in two ways:

1 They were asked to indicate which of the following statements best described the nature of information exchange with each of the supply chain partners:

- A 'They buy and sell my product and I don't know what happens afterwards.'
- B 'They give me some feedback on what the market is looking for and how well my product is received.'
- C 'They keep me informed of all the issues with the product including margins, quality, and market feedback.'

2 The organic farmers were asked to indicate whether their relationships with downstream supply chain businesses were formal or informal. A *formal* relationship was defined as a contract, licence agreement, memorandum of understanding or other type of written agreement. An *informal* relationship was defined as either no agreement (sales are negotiated or renegotiated each time there is a product to sell), a verbal agreement or a handshake agreement.

Table 2.1 Description of supply chain businesses

Business type	Description
Agent/distributor/broker	A business providing logistics and marketing services to businesses further down the supply chain (such as a wholesaler, retailer or food service outlet). The distributor might have a warehouse from which product is distributed but normally would not make significant direct sales from this warehouse. Agents, distributors and brokers usually receive a commission or percentage of the product value rather than a wholesale margin. They may not buy the product from a food producer; just find a buyer and arrange the sale.
Processor	A business that transforms commodities in a minimal to a highly processed manner. Can include dairy factories, abattoirs, juicing operations and oil extraction operations.
Wholesaler	A business selling at wholesale prices. A wholesaler always buys the product, adds a margin and on-sells to its customers.
Retailer	A business selling at retail prices direct to individual consumers at retail outlets.
Food service customer	A business such as a restaurant or commercial kitchen.
Export consolidator	A business that purchases products from numerous growers to create larger volumes sufficient to meet export requirements.

The results of these two questions are reported in a single table for each product group (Tables 2.2a to 2.10a). This series of tables shows, on the left side, the number and proportion of farmers that deal with businesses at each of the vertical links in the supply chain. The right-hand columns report the nature of information exchange and the type of relationship (formal or informal) with each supply chain partner. This data is reported as a frequency count (that is, the number of respondents in each category).

The survey also asked farmers the percentage of organic sales that were channelled through different supply chain partners. These responses are reported as a second table according to product group (Tables 2.2b to 2.10b). This series of tables shows, for those farmers dealing with a particular supply chain channel, the average percentage of total sales sold or transferred through this channel. For example, Table 2b indicates that 19 out of 86 beef producers surveyed sell direct to retailers and on average these producers sell 75% of their total organic sales in this manner. It is important to note that because each farmer can utilise more than one chain partner the percentages total more than 100%.

Survey results are presented in some detail in the following sections. The three supply chain relationship questions were asked for each product group produced on every respondent's farm. Therefore, all answers are structured and reported by commodity or product group.

Beef

Table 2.1a shows that 40% of organic beef producers surveyed deal with processors in selling their organic product. This compares to around 20% of producers dealing with each of agents/distributors/brokers, wholesalers and retailers. Overall, 82.7% of respondent organic beef producers deal exclusively with one chain partner. Of these supply chain partners, agents/distributors/brokers seem to provide the least exchange of supply chain information, with 31.5% of beef producers dealing with them reporting that they do not know what happens to their product after it is sold. By comparison, 51.9% of beef producers supplying to processors advised that the processor keeps them informed of all the issues with the product including margins, quality, and market feedback and only 11.1% do not know what happens to the product after it is sold. The majority of these supply chain relationships are informal.

Table 2.2b illustrates that nearly all producers sell some product directly to customers, however on average this constitutes only 13.46% of their total organic sales.

Table 2.2a Relationships with beef supply chain partners

Channel	Relationship		Nature of information exchange				Type of relationship		
	%	frequency	A	B	C	total	f	inf	total
Agent/distributor/broker	27.90	24	6	6	7	19	1	18	19
Processor	40.70	35	3	10	14	27	3	24	27
Direct to wholesaler	22.10	19	2	7	5	14	1	13	14
Direct to retailer	22.10	19	0	5	10	15	0	15	15
Direct to food service trade	2.30	2	0	0	2	2	0	2	2
To export consolidator	5.80	5	0	0	2	2	0	2	2

A = They buy my product but I don't know what happens afterwards.

B = They give me some feedback on what the market is looking for and how well my product is received.

C = They keep me informed of all the issues with the product including margins, quality, and market feedback.

f = formal; inf = informal

Table 2.2b Organic beef product sold through supply channels

Channel	Frequency	Mean %
Direct to consumer	84	13.46
Agent/distributor/broker	24	76.25
Processor	35	71.91
Direct to wholesaler	19	72.79
Direct to retailer	19	74.68
Direct to food service trade	2	100.00
To export consolidator	5	42.20

Mean is the average percentage of the product sold (as organic) through the channel by the producers using this channel.

Sheep and goats

Table 2.3a shows that the organic sheep and goat producers surveyed deal mostly with retailers (41.9%), agents (32.3%) and processors (29%). Overall, 79.5% of respondent organic sheep and goat producers deal exclusively with one chain partner. The overwhelming majority of chain partners apparently provide at least some market feedback and information to producers. Most supply chain relationships are informal.

Table 2.3a Relationships with sheep and goat supply chain partners

Channel	Relationship		Nature of information exchange				Type of relationship		
	%	frequency	A	B	C	total	f	inf	total
Agent/distributor/broker	32.3	10	1	3	4	8	2	6	8
Processor	29.0	9	0	4	4	8	1	7	8
Direct to wholesaler	16.1	5				0			0
Direct to retailer	41.9	13	0	6	6	12	1	11	12
Direct to food service trade	6.5	2	0	0	1	1	0	1	1
To export consolidator	0.0	0	na	na	na	0	na	na	0

A = They buy my product but I don't know what happens afterwards.

B = They give me some feedback on what the market is looking for and how well my product is received.

C = They keep me informed of all the issues with the product including margins, quality, and market feedback.

f = formal; inf = informal

Table 2.3b Organic sheep and goat product sold through supply channels

Channel	Frequency	Mean %
Direct to consumer	30	13.67
Agent/distributor/broker	9	78.89
Processor	9	77.78
Direct to wholesaler	5	78.00
Direct to retailer	13	90.23
Direct to food service trade	2	50.00
To export consolidator	0	na

Mean is the average percentage of the product sold (as organic) through the channel by the producers using this channel.

Pig

All of the organic pig producers interviewed had a supply chain relationship with either a processor or a retailer (see Table 2.4a), although the sample size is very small (five respondents). There is a varying level of information exchange and all relationships are informal.

Table 2.4a Relationships with pig and pork supply chain partners

Channel	Relationship		Nature of information exchange				Type of relationship		
	%	frequency	A	B	C	total	f	inf	total
Agent/distributor/broker	0	0	na	na	na	0	na	na	0
Processor	60	3	1	1	1	3	0	3	3
Direct to wholesaler	0	0	na	na	na	0	na	na	0
Direct to retailer	40	2	1	1	0	2	0	2	2
Direct to food service trade	20	1	na	na	na	0	na	na	0
To export consolidator	0	0	na	na	na	0	na	na	0

A = They buy my product but I don't know what happens afterwards.

B = They give me some feedback on what the market is looking for and how well my product is received.

C = They keep me informed of all the issues with the product including margins, quality, and market feedback.

f = formal; inf = informal

Table 2.4b demonstrates that the vast majority of producers sell the bulk of their product to either processors or retailers. All producers also sell small percentages direct to consumers and one sells to food service markets.

Table 2.4b Organic pork product sold through supply channels

Channel	Frequency	Mean %
Direct to consumer	5	10
Agent/distributor/broker	0	na
Processor	3	80
Direct to wholesaler	0	na
Direct to retailer	2	100
Direct to food service trade	1	10
To export consolidator	0	na

Mean is the average percentage of the product sold (as organic) through the channel by the producers using this channel.

Poultry

Table 2.5a illustrates that the poultry producers surveyed most commonly forge supply chain relationships with retailers (51.7%), frequently involving van sales to a regular route of retail outlets (often specialist poultry retailers and health food stores). Results suggest that these relationships provide a good deal of quality feedback to producers (all were classified as C), stemming from the producer regularly visiting the retailers' premises. However, all relationships are informal in nature. 77.8% of the producers deal with only one type of supply chain business.

Table 2.5a Relationships with poultry supply chain partners

Channel	Relationship		Nature of information exchange				Type of relationship		
	%	frequency	A	B	C	total	f	inf	total
Agent/distributor/broker	14.30	1	0	1	0	1	0	1	1
Processor	14.30	1	na	na	na	0	na	na	0
Direct to wholesaler	14.30	1	0	1	0	1	0	1	1
Direct to retailer	57.10	4	0	0	3	3	0	3	3
Direct to food service trade	28.60	2	na	na	na	0	na	na	0
To export consolidator	0	0	na	na	na	0	na	na	0

A = They buy my product but I don't know what happens afterwards.

B = They give me some feedback on what the market is looking for and how well my product is received.

C = They keep me informed of all the issues with the product including margins, quality, and market feedback.

Table 2.5b reveals that almost all producers sell some of their product direct to consumers, but only a small percentage of their total sales volumes (mean of 21.7%). Most producers sell the majority of their produce to retailers.

Table 2.5b Organic poultry product sold through supply channels

Channel	Frequency	Mean %
Direct to consumer	7	21.71
Agent/distributor/broker	1	80.00
Processor	1	0.00
Direct to wholesaler	1	80.00
Direct to retailer	4	67.50
Direct to food service trade	2	10.00
To export consolidator	0	na

Mean is the average percentage of the product sold (as organic) through the channel by the producers using this channel.

Eggs

Retailers and agents/distributors/brokers are the most frequent supply chain partners for those organic egg producers surveyed, as shown in Table 2.6a. 72% of respondents deal exclusively with one type of supply chain business. Respondents report that the information exchange with retailers is considerably more extensive than with agents. Almost all relationships are informal. Egg producers sell some of their eggs direct to consumers (mean of 25%) but, as

Table 2.6b illustrates, some producers sell the majority of their produce through wholesalers, retailers or agents.

Table 2.6a Relationships with egg supply chain partners

Channel	Relationship		Nature of information exchange				Type of relationship		
	%	frequency	A	B	C	total	f	inf	total
Agent/distributor/broker	44.4	8	4	1	1	6	0	6	6
Processor	5.6	1	na	na	na	0	na	na	0
Direct to wholesaler	27.8	5	1	1	2	4	0	4	4
Direct to retailer	55.6	10	0	2	6	8	1	7	8
Direct to food service trade	5.6	1	na	na	na	0	na	na	0
To export consolidator	0	0	na	na	na	0	na	na	0

A = They buy my product but I don't know what happens afterwards.

B = They give me some feedback on what the market is looking for and how well my product is received.

C = They keep me informed of all the issues with the product including margins, quality, and market feedback.

f = formal; inf = informal

Table 2.6b Organic egg product sold through supply channels

Channel	Frequency	Mean %
Direct to consumer	18	25.5
Agent/distributor/broker	8	55.0
Processor	1	35.0
Direct to wholesaler	5	67.0
Direct to retailer	10	70.1
Direct to food service trade	1	5.0
To export consolidator	0	na

Mean is the average percentage of the product sold through the channel by the producers using this channel.

Milk

Most of the milk producers interviewed deal with processors (66.7%). As Table 2.7a demonstrates, the relationships between milk producers and processors are of either type B or C, implying that producers are provided with some information, or detailed information, on markets, pricing and quality. Unlike other product groups examined in this chapter, the majority of milk producers have formal agreements in place with supply chain partners.

Table 2.7a Relationships with milk supply chain partners

Channel	Relationship		Nature of information exchange				Type of relationship		
	%	frequency	A	B	C	total	f	inf	total
Agent/distributor/broker	25.0	3	0	0	3	3	2	1	3
Processor	66.7	8	0	2	5	7	5	2	7
Direct to wholesaler	16.7	2	1	0	1	2	2	0	2
Direct to retailer	25.0	3	0	3	0	3	1	2	3
Direct to food service trade	16.7	2	0	2	0	2	1	1	2
To export consolidator	0	0	na	na	na	0	na	na	0

A = They buy my product but I don't know what happens afterwards.

B = They give me some feedback on what the market is looking for and how well my product is received.

C = They keep me informed of all the issues with the product including margins, quality, and market feedback.

f = formal, inf = informal

Table 2.7b illustrates that almost all milk producers sell a small percentage of total volume direct to consumers. However, in general, milk producers sell almost all their volume to an intermediate supply chain partner (most frequently a processor).

Table 2.7b Organic milk product sold through supply channels

Channel	Frequency	Mean %
Direct to consumer	11	4.55
Agent/distributor/broker	3	83.33
Processor	7	85.71
Direct to wholesaler	1	100.00
Direct to retailer	2	100.00
Direct to food service trade	0	na
To export consolidator	0	na

Mean is the average percentage of the product sold (as organic) through the channel by the producers using this channel.

Cereals

As expected, the vast majority of cereal producers interviewed sell their product through processors (58.9%) or agents/distributors (28.6%) as shown in Table 2.8a. Cereal grains generally need to be value-added through processing (milling as a minimum) before they can be wholesaled or retailed. 88.9% of these producers have a relationship with only one type of supply chain business. The level of information exchange varies, although information exchanged between processors and growers is reported to be more extensive than between processors and agents. The majority of agreements across the board are informal, although about 30% of growers who deal with processors have formal arrangements in place.

Table 2.8a Relationships with cereal supply chain partners

Total respondents = 56 Channel	Relationship		Nature of information exchange				Type of relationship		
	%	frequency	A	B	C	total	f	inf	total
Agent/distributor/broker	28.6	16	5	6	0	11	3	8	11
Processor	58.9	33	8	14	10	32	10	22	32
Direct to wholesaler	14.3	8	2	1	2	5	3	2	5
Direct to retailer	7.1	4	0	0	1	1	0	1	1
Direct to food service trade	0.0	0	na	na	na	0	na	na	0
To export consolidator	3.6	2	na	na	na	0	na	na	0

A = They buy my product but I don't know what happens afterwards.

B = They give me some feedback on what the market is looking for and how well my product is received.

C = They keep me informed of all the issues with the product including margins, quality, and market feedback.

f = formal

inf = informal

As reported in Table 2.8b, a majority of growers sell some of their product direct to consumers, possibly for use in organic stockfeed. However, those growers who deal with agents, processors or wholesalers tend to sell most of their product through these channels.

Table 2.8b Organic cereal product sold through supply channels

Channel	Frequency	Mean %
Direct to consumer	53	9.68
Agent/distributor/broker	15	63.67
Processor	33	84.27
Direct to wholesaler	8	60.50
Direct to retailer	4	19.25
Direct to food service trade	0	na
To export consolidator	2	22.50

Cereals include grains, pulses and oilseeds.

Mean is the average percentage of the product sold (as organic) through the channel by the producers using this channel.

Vegetables

The supply chain partner links in Table 2.9a suggest that organic vegetables tend to be sold as fresh product by growers, more often through agents (45.7% of respondents), but also quite frequently through direct sales to wholesalers (40.2%) and retailers (35.2%). 73.4% of respondents have only one type of supply chain partner. Most growers receive some feedback from their supply chain partners, but mostly of type B. The type of relationship is almost exclusively informal in nature.

Table 2.9a Relationships with vegetable supply chain partners

Channel	Relationship		Nature of information exchange				Type of relationship		
	%	frequency	A	B	C	total	f	inf	total
Agent/distributor/broker	45.7	58	9	25	20	54	2	52	54
Processor	6.3	8	0	1	0	1	1	0	1
Direct to wholesaler	40.2	51	9	18	15	42	1	41	42
Direct to retailer	35.4	45	3	15	7	25	1	24	25
Direct to food service trade	6.3	8	0	2	1	3	0	3	3
To export consolidator	2.4	3	1	0	0	1	0	1	1

A = They buy my product but I don't know what happens afterwards.

B = They give me some feedback on what the market is looking for and how well my product is received.

C = They keep me informed of all the issues with the product including margins, quality, and market feedback.

f = formal

inf = informal

Table 2.9b shows that almost all the vegetable growers surveyed sell direct to consumers. On average these farmers sell 21% of their total volume direct to consumers. Producers who sell through agents, wholesalers or retailers tend to sell around 50 to 80% of their product through these supply chain partners.

Table 2.9b Organic vegetable product sold through supply channels

Channel	Frequency	Mean %
Direct to consumer	121	21.26
Agent/distributor/broker	57	81.07
Processor	8	13.75
Direct to wholesaler	51	71.73
Direct to retailer	43	48.07
Direct to food service trade	8	30.75
To export consolidator	3	17.00

Mean is the average percentage of the product sold (as organic) through the channel by the producers using this channel.

Fruit and nuts

According to the survey, organic fruit and nut growers have a considerable range of supply chain partners; 43.6% of producers deal with wholesalers, 28.8% with retailers and 22.4% with processors. Overall, 31% of producers have more than one type of supply chain partner. Information exchange is reportedly quite high among fruit and nut growers and their chain partners: over 80.7% indicated that they receive some feedback (47.7%) or that they are kept informed of all issues (33.8%). The relationship between fruit and nut growers and supply chain partners is largely informal (88% of relationships).

Table 2.10a Relationships with fruit and nut supply chain partners

Channel	Relationship		Nature of information exchange				Type of relationship		
	%	frequency	A	B	C	total	f	inf	total
Agent/distributor/broker	39.7	62	13	23	16	52	5	47	52
Processor	22.4	35	4	5	6	15	5	10	15
Direct to wholesaler	43.6	68	11	31	15	57	6	51	57
Direct to retailer	28.8	45	0	11	13	24	1	23	24
Direct to food service trade	5.8	9	0	1	0	1	0	1	1
To export consolidator	4.5	7	0	1	1	2	1	1	2

A = They buy my product but I don't know what happens afterwards.

B = They give me some feedback on what the market is looking for and how well my product is received.

C = They keep me informed of all the issues with the product including margins, quality, and market feedback.

f = formal

inf = informal

Table 2.10b demonstrates that most of the fruit and nut growers surveyed sell an average of 14.5% of their produce direct to consumers. Growers who sell through agents or wholesalers sell an average of 75% of their total sales volumes in this manner. The growers who sell direct to retailers tend on average to sell around 50% of product to this chain partner.

Table 2.10b Organic fruit and nut product sold through supply channels

Channel	Frequency	Mean %
Direct to consumer	143	14.49
Agent/distributor/broker	62	75.21
Processor	34	37.47
Direct to wholesaler	67	76.64
Direct to retailer	44	50.93
Direct to food service trade	9	8.89
To export consolidator	6	14.67

Mean is the average percentage of the product sold (as organic) through the channel by the producers using this channel.

Collaborative marketing

The survey of farmers involved in organic production included a series of questions to determine the extent of pooling or marketing products through various types of collaborative arrangements. These arrangements are described in Table 2.11. For each of these arrangements, respondents were asked to indicate if they were 'currently involved', had been 'previously involved' or were 'interested to become involved in the future'.

The questions were asked for each commodity group produced on a farm and the results are also presented by these commodity groupings. All the collaborative marketing arrangements are relevant to all the commodity groupings except group packing sheds which are not relevant to livestock and animal product groups.

Table 2.11 Types of arrangements for collaborative marketing

Arrangement	Details
Grower cooperatives	A grower owned cooperative-structured business in which all members are equal co-owners.
Group packing shed	A shed for sorting, grading and packing produce owned by an individual or a business or a cooperative but packing for a number of producers.
Group value-adding company	Processing company for cleaning, drying, roasting, juicing or pulping for a number of producers.
Grower network	A formally structured group of growers working together in a form other than a cooperative, for example, in an association or a company or with written agreements.
Other marketing group	A group of producers who market produce together, other than through a cooperative, formal network or corporate structure.

Tables are provided summarising the responses for each commodity group. Each table presents the frequency (number of responses to each question). Along the bottom line is the average percentage of the sample that responded 'currently involved', 'previously involved', 'future intention to become involved' or 'no intention to become involved'. This is a useful

indicator of the sentiments of the survey respondents regarding past and future participation in collaborative or cooperative marketing arrangements.

Table 2.12 reports results for beef producers. More than half of the organic beef producers surveyed are not interested in any form of collaborative marketing. Only 8.4% of producers reported a current or previous involvement in these types of marketing arrangements; primarily cooperatives and grower networks. However, 33% of organic beef producers expressed an interest in getting involved in cooperative arrangements in the future, and all of the possible collaboration options seem to be of interest. Many respondents commented that they were open to any and all types of networking and collaborative opportunities. Several respondents noted an interest of other (non-marketing) benefits of collaboration; they listed ideas such as cooperative purchasing of farm inputs and mobile processing plants. One respondent referred to the Queensland organic beef company, OBE Group, which has a corporate structure limited by shares, as a worthy model.

Table 2.12 Cooperative or collaborative arrangements among organic beef producers, frequency

Cooperation type	Type of involvement			
	current	previous	future intention	not interested
Grower cooperative	11	3	25	47
Group value-adding company	2	0	28	56
Other marketing group	3	0	32	51
Grower network	11	2	32	41
Other collaborative arrangement	4	0	25	57
Percentage weight	7.21	1.16	33.02	58.60

The response by sheep and goat producers in Table 2.13 illustrates that 10% are currently involved in collaborative marketing and about 20% are interested in a future involvement. Suggestions made for other collaborative activities included operating a grower-owned organic butcher shop and pooling sales with other certified growers in the district. The results in Table 2.14 for pork producers are very similar to those for sheep and goats.

Table 2.13 Cooperative or collaborative arrangements among organic sheep and goat producers, frequency

Cooperation type	Type of involvement			
	current	previous	future intention	not interested
Grower cooperative	5	0	7	19
Group value-adding company	1	0	5	25
Other marketing group	2	0	7	22
Grower network	6	0	8	17
Other collaborative arrangement	1	0	3	27
Percentage weight	9.68	0.00	19.35	70.97

Table 2.14 Cooperative or collaborative arrangements among organic pork producers, frequency

Cooperation type	current	Type of involvement		not interested
		previous	future intention	
Grower cooperative	0	0	1	4
Group value-adding company	0	0	2	3
Other marketing group	1	0	1	3
Grower network	1	0	1	3
Other collaborative arrangement	0	0	1	4
Percentage weight	8.00	0.00	24.00	68.00

Responses for poultry and egg producers are summarised in Tables 2.15 and 2.16 respectively. These results suggest that there is minimal interest from these producers in any form of cooperative or collaborative marketing.

Table 2.15 Cooperative or collaborative arrangements among organic poultry producers, frequency

Cooperation type	current	Type of involvement		not interested
		previous	future intention	
Grower cooperative	0	0	0	7
Group packing shed	0	0	0	0
Group value-adding company	0	0	0	7
Other marketing group	0	0	0	7
Grower network	0	0	0	7
Other collaborative arrangement	0	0	1	6
Percentage weight	0.00	0.00	2.86	97.14

Table 2.16 Cooperative or collaborative arrangements among organic egg producers, frequency

Cooperation type	current	Type of involvement		not interested
		previous	future intention	
Grower cooperative	0	0	2	16
Group packing shed	0	0	0	0
Group value-adding company	1	0	1	16
Other marketing group	1	0	0	17
Grower network	2	0	3	13
Other collaborative arrangement	0	0	0	18
Percentage weight	4.44	0.00	6.67	88.89

The responses from milk producers, presented in Table 2.17, are dissimilar to those for poultry and eggs. Table 2.17 shows a relatively high level of current participation in cooperative and collaborative marketing arrangements, particularly through grower cooperatives and networks. This is undoubtedly linked to the historical involvement of many

milk producers in dairy cooperatives. Nevertheless, 55% of respondents are not interested in any future involvement in collaborative structures.

Table 2.17 Cooperative or collaborative arrangements among organic milk producers, frequency

Cooperation type	Type of involvement			
	current	previous	future intention	not interested
Grower cooperative	4	1	3	4
Group packing shed	0	0	0	0
Group value-adding company	2	0	1	9
Other marketing group	3	0	4	5
Grower network	6	1	1	4
Other collaborative arrangement	0	0	1	11
Percentage weight	25.00	3.33	16.67	55.00

Table 18 presents results from cereal grain growers. It reveals that there is a low level of current involvement by cereal producers in collaborative and cooperative market arrangements. Most of those who are involved report being part of grower cooperatives and networks. However, the degree of future interest is the second highest of all commodity groups (after beef) with around 25% on average.

Table 2.18 Cooperative or collaborative arrangements among organic cereal producers, frequency

Cooperation type	Type of involvement			
	current	previous	future intention	not interested
Grower cooperative	7	1	13	35
Group packing shed	0	0	0	0
Group value-adding company	2	0	16	38
Other marketing group	1	0	12	43
Grower network	5	0	19	32
Other collaborative arrangement	1	0	9	46
Percentage weight	5.71	0.36	24.64	69.29

Vegetable growers reported a low level of current or past involvement in collaborative marketing arrangements, as presented in Table 2.19. However, over 20% of respondents expressed an interest in future involvement in at least one collaborative strategy. Some vegetable producers have a wide variety of ideas for collaborative initiatives including community-supported agriculture, collaborating in stalls at farmers' markets and creating regional food groups for marketing purposes. Similar results were derived from interviews with fruit growers, as shown in Table 2.20.

Table 2.19 Cooperative or collaborative arrangements among organic vegetable producers, frequency

Cooperation type	Type of involvement			
	current	previous	future intention	not interested
Grower cooperative	10	6	32	79
Group packing shed	0	0	0	0
Group value-adding company	0	1	33	93
Other marketing group	5	1	23	98
Grower network	19	4	31	73
Other collaborative arrangement	6	1	19	101
Percentage weight	6.30	2.05	21.73	69.92

Table 2.20 Cooperative or collaborative arrangements among organic fruit producers, frequency

Cooperation type	Type of involvement			
	current	previous	future intention	not interested
Grower cooperative	11	6	43	96
Group packing shed	0	0	0	0
Group value-adding company	5	2	37	112
Other marketing group	10	0	41	105
Grower network	25	0	41	90
Other collaborative arrangement	4	1	29	122
Percentage weight	7.05	1.15	24.49	67.31

Conclusions

Although the organic food production industry is small and fragmented, there is evidence of supply chain relationship patterns emerging. It is well known that the organic food industry is a small component of Australia's food industry and is currently focused on small niche markets. However, the results of the survey of organic farmers presented in this chapter demonstrate that direct sales to consumers (such as roadside stalls and farmers' markets) are not the main customers for organic producers in any of the organic sectors (for which survey data were gathered). In part this is a function of farmers' experience in mainstream agricultural production in their respective sectors; it is also evidence that production of organic food inputs is already demand led rather than production driven.

Messages about the importance of a supply base that can deliver consistency and volume and the benefits of collaboration to achieve cost-efficiencies and marketing impact appear not to have been heeded by the organic industry. Responses from the survey suggest that collaboration between producers in the emerging organic industry is limited. More significantly, the majority of growers have no plans to adopt collaborative practices in the future.

While most of the organic producers surveyed supply some product direct to the consumer, on average this was only a small proportion of total sales. Milk is at the lowest end of this scale and this is partly because of strict legislative restrictions over sales of unprocessed milk.

Poultry and eggs are at the top of the scale, with farmers in these sectors often having vertically integrated operations (with their own processing facility) and a delivery run to specialist retail customers.

The survey indicated that processors are the most common supply chain partners in those sectors where off-farm processing is necessary before a consumable product is made (for example, meat, milk and cereal grains). The second most frequent direct supply chain partnership is with retailers (often specialty retailers and health food stores). Notably, organic vegetables are the only sector in which the most frequent direct supply chain partnership is with agents and distributors. The most frequent direct supply chain relationships in each of the nine surveyed organic sectors are:

beef.....	grower–processor
sheep and goat products	grower–retailer
pork and pig meat.....	grower–processor
poultry	grower–retailer
eggs.....	grower–retailer
milk.....	grower–processor
cereals.....	grower–processor
vegetables.....	grower–agent/distributor
fruit and nuts.....	grower–wholesaler

The survey of organic farmers indicated that the greatest level of information exchange and feedback occurred between growers and retailers. The exception to this broad trend is processors providing extensive feedback to milk producers.

The survey also suggests that a significant majority of producers, almost regardless of what they produce, are neither currently involved nor do they expect to have a future involvement in any type of horizontal supply chain collaboration with other producers. In milk production, the sector with arguably the greatest history of horizontal collaboration, there is a relatively high level of existing participation in collaborative arrangements. However even in this sector collaborative efforts are in the minority.

On average, across all commodity groupings, around 65 to 70% of organic producers are not interested in horizontal supply chain collaboration in the future, 5 to 10% are already collaborating and 20 to 25% are interested in future participation. There is greatest interest in future participation among beef, cereals and fruit and vegetable growers and least interest among egg and poultry producers.

Overview

The results from the survey of organic growers indicate that vertical supply chain relationships are recognised as important by growers and the level of information exchange between the chain partners is quite extensive. However, there appears to be a low level of current or planned horizontal collaboration in the organic food industry. These results have considerable implications for the outlook of the Australian organic food industry in terms of its scale and its rate of development. The low level of collaboration is likely to severely limit the ability of the industry to build the capability to supply the volume, range and consistency of product which will be necessary to capture sustainable domestic and export markets. Reliance on vertical chain relationships alone will limit the industry's development to niche markets until very large growers become involved in production.

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CHAPTER 3

Beyond the farm gate: the perspectives of processors, wholesalers and distributors in the organic industry

Darren Halpin

Centre for Social Science Research, Central Queensland University

and Jackie Parkinson

Central Queensland University

Introduction

This chapter examines how processors, wholesalers and distributors (post-farm-gate supply chain participants), view the organic industry and its development. It also examines the role processors, wholesalers and distributors currently play and how they see the future? In order to gather some more detailed information on the activities of organisations in the early stage of the post-farm-gate supply chain over 20 semi-structured telephone interviews were conducted in the second quarter of 2004. Interviewees were selected from a list of processors, distributors and wholesalers compiled from certifying organisation websites and industry directories. These were ranked in terms of their importance by board members of the Organic Federation of Australia. The interviews were conducted with some of the major first-stage processors, distributors and wholesalers involved in the organic food sector. Some interviewees were also engaged in primary production operations. It was beyond the scope of the work to consider higher level manufacturers. The interviews were concentrated in the dairy, meat, and fruit and vegetable sectors, with some attention given to sugar.

The results presented in this chapter reveal neither individual company responses, nor price and volume data, which were provided on a commercial-in-confidence basis. However, the discussion presents a thematic analysis of interviews with some key businesses across Australia and across major product groups. While the interviews addressed links up and down the supply chain, they also revealed insights about the structure of the industry and strategic industry development issues.

Processing organic foods in Australia

In response to the increased demand for organic products more generally, there has been a marked increase in the range of processed organic foods. Internationally, some major companies, such as Unilever and Nestlé, have taken up organic food as part of their product range. Some processed food groups, such as baby foods, have well developed organic ranges.

In Australia a small but growing number of processors are manufacturing certified organic products.

For organic products, there can sometimes be an inverse relationship between the amount of processing and the price, that is, more processing can actually reduce the value of the product. Consumers of organic food are often willing to pay more for whole, unprocessed foods, which they may believe have greater nutritional benefits. Some growers have a strong commitment to the marketing of whole, unprocessed foods. Yet, in general, reaching the average consumer in Australia and overseas is likely to require organic products to replicate the appearance and characteristics of conventional products.

Although the literature lacks any identifiable systematic research on the attitudes and activities of organic processors, various reports have made anecdotal comments on processor attitudes. According to one report, processors have typically been cautious about participating in the organic market given low and unpredictable volumes of supply (Invest Australia & KPMG 1999, pp.19–20). Another commentator observed that the organic industry in Australia may well be ‘trapped in its own smallness’ (Dumaresq & Greene 1997). Without large markets being developed there is little incentive for farmers to move into large-scale production. However, without supply, the large markets will be difficult to secure against international competition. This also applies to value-adding. Without certainty in both volume and quality, it has been argued that processors will be unwilling to make investments in product and brand development or in technology.

However, more sustained demand and more certain supply in some areas has reportedly coaxed an increasing number of processors to commit themselves to the organic industry (McCoy & Parlevliet 2000, p.57). For instance, a Heinz Wattie representative claimed that they would sell over \$10 million of product in Australia and New Zealand in 2001–02; the equivalent of 3000 tonnes of value-added product, most of which was organic baby food and frozen vegetables (Fielke 2001, p.21). Similarly, Lyons (1999) notes the central role of Uncle Toby’s in the organic breakfast cereal market.

The range of organic processing operations in Australia is indicated by a list of products from one of the largest certifying organisations. The list includes jams, sauces, olive oil, meat processing and packing (meat portions and burgers), grains for milling, apple juice, pasta sauces, dried fruits, breads, muesli, breakfast cereals, noodles and pasta, wine, dairy products (cheese, yoghurt, milk powder, cream), salad mixes, roasting coffee, chocolate-coated nuts, honey, and tea tree and herb oils.

Records from organic certifying organisations indicate that many organic farms process their own products. Some growers add value to their products to sell them in niche markets; others operate boutique food businesses on the farm. Examples are making yoghurt, cheeses, honey, olive oil, wine, chocolate-coated nuts and confectionery, and preserving or juicing fruit and vegetables.

The issue of on-farm-processing is a constant theme in the literature. On-farm flour milling is among many suggestions made for value-adding in the sector (Burlace 1997, p.65). The advocacy of on-farm processing reflects commonly espoused ideals of the organic movement, which can include low food kilometres, proximity between producer and consumer, and a desire to elaborate an alternative food system (see for example, Ikerd 2001; Leu 2001).

Supply chain snapshots

The responses to our interviews allowed us to generate a synopsis of the structure of production and processing operations in the dairy, meat, and fruit and vegetable supply chains. These are sketched out below.

Dairy

We interviewed processors of milk and a range of milk products including yoghurt, hard cheeses and soft cheeses. The cheeses are all specialty cheeses. One processor manufactures sheep's milk products.

Organic dairy processors range from very large national companies handling only a small percentage of organic products to small operations which are 100% organic and get their supplies from only one or two local farmers or process products they have produced themselves. The larger companies we spoke to are focusing more strongly on white milk and yoghurt, with cheeses being handled by boutique manufacturers. Despite their size, two small operators we interviewed are the only processors of their type in Australia. Because of their uniqueness and specialisation, these operators are selling strongly in their state and to interstate capital cities.

Most of Australia's organic milk supply is handled through a cooperative incorporating 90% of the country's organic dairy farmers. They are located mainly in Victoria, eastern South Australia and southern New South Wales. By far the majority of the others interviewed got their supplies from three or fewer local farmers. There is a small cluster of organic dairy farmers in Queensland. One processor we interviewed called this area a potential 'organic haven', suggesting that there is the potential to create a regional organic dairy industry cluster in the area.

In Western Australia, those interviewed reported that there is currently only one producer of organic milk. One operator undertakes all the processing for this producer, incorporating pasteurised milk and cheeses. There is likely to be an increase in production, with other producers undertaking the certification process.

All processors we interviewed are located close to their producers, which is essential due to the perishability of milk. It was reported that organic milk has a shorter shelf-life than conventional milk. Sales areas may be more widespread, especially for cheeses. The larger processors interviewed sell to both supermarkets and smaller outlets. The smaller ones, particularly those handling cheeses, prefer to sell their products at speciality stores, in keeping with the image they wish to convey. Several have their own retail outlets on their premises and also operate as tourist attractions.

Meat

In our interviews we spoke to a range of meat processors involved in a variety of different supply chain structures. They included abattoirs, manufacturers of processed products, boning, cutting and packaging operations and companies undertaking a combination of these. A number are contract killers for farmers or other processors. Others purchase meat from organic producers for processing as cuts or processed meat products for eventual sale to wholesalers, retailers (including supermarkets) and export markets. One abattoir kills on a contract basis for one farmer only, who sells direct to the consumer. One processor is the sole

supplier for a major supermarket chain. We spoke to a large farmers' group which undertakes its own production, processing (through contractors) and marketing. One processor exports all organic production to the European Union.

Only two processors we spoke to handled only organic product. Of the other processors, organic meat made up only a small percentage of overall operations. About 7% of the product of a major South Australian processor is organic but this represents 95% of that state's organic meat production, across the range of beef, lamb, pork and poultry. This operator purchases from a farmers' cooperative of which most South Australian organic meat producers are members.

Organic meat processors handle and manufacture a range of products. These include cuts of meat (beef, lamb, pork and poultry), frozen meat, burgers and sausages. One processor receives whole carcasses of beef and lamb from abattoirs, cuts them into chops, steaks and so on and tray packs them. All the pork received by this operator is processed into bacon, ham and organic viennas; chicken is sold as whole birds. The operator also makes beef pastrami and roast beef as well as an organic bratwurst and a country-style sausage.

A large farmers' group reported that only about 30% of each of their beasts goes to the Australian market, the rest is exported. They indicated that in Australia, consumers prefer the expensive dinner-party cuts of organic beef, rather than casserole or stir-fry cuts.

In contrast to dairy products, organic meat products may be grown a considerable distance away from processors and their ultimate destinations. In Queensland, an exporter of organic beef gets supplies from numerous farmers around Birdsville, Emerald and Roma. A large Queensland processor sources meat from the channel country of south-west Queensland and other parts of outback Australia; another processor gets supplies within a 2000-kilometre radius.

Nearly all of Tasmania's organic meat is handled through a structured farmers' group. Tasmanian organic meat production is very small and all sold within Tasmania. The farmers' group reported that the perishability of meat products impedes their export to other states.

Fruit, vegetables and groceries

Interviews were conducted with those distributing, wholesaling, packing and processing fruit, vegetables and grocery products. We spoke to a sample of the larger wholesalers and distributors of these lines in Western Australia, South Australia, Queensland and Victoria. Unlike their counterparts in meat and dairy supply chains, vegetable and fruit wholesalers and distributors tend to be dedicated organic operators. This specialisation reflects a finding of the Hassall and Associates study of 1996. Each state has a few dedicated distributors based at fruit and vegetable markets, with the balance of the organic produce moving through conventional operations. In terms of wholesaling and distribution, fruit and vegetable chains appear to be populated by several large wholesalers and distributors operating up and down the East Coast. One or two players dominate the trade in Western Australia and South Australia. One respondent suggested there were three major wholesalers in Melbourne, three in Sydney, two in Brisbane, two in Perth, two in Adelaide and one in Tasmania. One of the larger wholesalers in Queensland estimated that they handled about 50 to 60 tonnes per week, which was estimated at 1% of the total organic fruit and vegetable market.

The processors we spoke to, in this case fruit juicing operators, tended to be predominantly conventional operators who had less than 5% of their operation involved in organic production. One processor identified an oversupply of carrots for juicing but a lack of apple and citrus. They are currently importing apple and citrus concentrate. There seems to be a concentration of production in the eastern states, especially among processors, which means that distributors in South Australia and Western Australia have to obtain grocery and processed lines from the eastern states. Among wholesalers and distributors one concern is that processors only have a few organic lines; supply of processed goods can become sporadic. The entry of larger processors was seen as a positive move that could stabilise supply and reduce imports of some products.

One of the key problems in the fruit and vegetable supply chain is that the vast majority of producers are small; many are hobby farmers. As such, it is difficult to coordinate supply and ensure quality. The sheer number of producers and the frequent exit and entry of growers make efforts to organise the supply chain difficult. Attracting larger growers could stabilise supply.

Organics: A demand driven sector?

Processors and wholesalers are key players in managing fluctuations in supply and demand in the organic industry and in agriculture generally. Many processors and wholesalers believe that they have a greater understanding of opportunities in organic products than primary producers.

Similarly, distributors are also key hubs in the supply chain. Some respondents noted that distributors must be committed to building their organic business and not just transport and logistics services. They need a sound knowledge of the products, what is happening with them, where they are produced and an appreciation of the manufacturers who supply them.

Respondents often claimed that, in organic processing, there is no stability or assurance of supply and demand and that there is not a large profit to justify the investment. Nevertheless, the interview responses highlighted the commitment and enthusiasm of processors and other post-farm supply chain businesses toward the organic industry. Many expressed strong support for the ideology and values base of the organic movement. This commitment is particularly important if the sector is to grow in a demand led way.

As a general rule, processors tend to be either big companies with a small organic unit or a small company that is supplied by a few organic producers. In the former, organic champions within the company seem crucial to the development of an organic product line. In the latter, there is a strong sense that processors are motivated not by monetary benefit but by a sense of mission. While this does not mean commercial considerations are discarded, it does show that there is also an ethical base for building the industry. Above all, most processors felt that for the success of organics there is a need for the entire supply chain to work together.

Interviewees suggested that there are significant challenges in developing the organic sector. The four factors most often referred to were:

- climate and seasonality – organic products across the range of commodity groups are more subject to seasonal fluctuations than their conventional counterparts
- low production volumes
- low shelf-life and high perishability of fresh produce

- irregular supply.

Several respondent processors and distributors rated the irregularity of supply from primary producers as the main inhibitor of the growth of organic foods. Others felt that organics in general are not profitable, mainly at the farm-gate level but also among processors. The two are clearly linked; increased profitability is also likely to stimulate increased supply. A number of respondents suggested that the quality of some organic product is lower than conventional product. These comments tended to be directed at product for the fresh market, rather than the manufactured market, particularly some organic meat and some organic fruit and vegetables. In these cases, it was suggested that the fact that they are organic remained the only selling point.

Another challenge mentioned by respondents was adhering to organic standards, which prescribe regimes of product separation, machinery cleaning and packaging, adding greater complexity to processing, handling, packing, storage and shipment.

Organic industry development issues in Australia are similar to those identified overseas. On an international scale there have been similar supply chain inefficiencies contributing to higher costs and poor market development for many organic food products. The Australian survey findings are consistent with those of the United Kingdom-based information and market consultancy, International Grocery Development, in identifying that the fragmented nature of the organic food sector makes it more difficult to communicate information and promotions through the chain. International Grocery Development (2001) has identified the three most significant worldwide supply chain difficulties for processed organic foods. In order of importance these are:

- sourcing processed ingredients
- inconsistent regulatory standards
- lack of consistency of supply.

International Grocery Development suggests that as the market increases there are likely to be chain efficiencies through economies of scale and a reduction in the chain difficulties. It also suggests that new relationships are being developed across the organic food chain, such as new forms of intermediary involvement and long-term contracts between manufacturers and organic farmers.

Dairy

Dairying allows some flexibility in organic processing volumes. Organic milk may be pooled or separated into organic and conventional product in order to meet required volumes. For example, one dairy processor purchases the total organic milk production from its suppliers and separates out the volume required for organic processing from the volume required for on-selling. The balance is sold as conventional product and suppliers are paid organic premiums only for the portion of milk sold as organic. This allows the processor to prevent oversupply further along the supply chain.

One cooperative dairy distributor pools the organic milk supply from a group of producers which is understood to encompass the vast majority of organic milk production in Australia. This ensures that manufacturers of value-added products have a reliable supply of organic milk, both in terms of volume and quality. This group advised that there is currently enough

supply to meet domestic demand twofold and that a lot of organic milk is going into the conventional supply.

There is also evidence that some processors cooperate with one another. For example, surplus organic milk from one dairy may be utilised by another dairy which manufactures value-added products (such as butter). Processing of dairy products may also be conducted on a small scale, on demand from customers.

Meat

The supply of organic meat fluctuates across seasons and from year to year. There is a stronger seasonal aspect to organic meat production than its conventional counterpart. This arises because organic livestock must be fed organically produced feed, which means feed availability limits production. Scarce feed in drought years raises prices beyond that which makes organic production economically viable. This tends to draw producers away from selling as organic until feed prices drop. While drought affects conventional producers in a similar way, it has a stronger affect on organic supply chains. Even those processors with a regular supply reported suffering from seasonal and environmental impacts. Small producers may supply only on an occasional basis or in limited numbers. Perishability of meat products poses a particular problem in matching supply with demand.

A processor of various types of both organic and conventional meats expressed the view that organic farmers may be less willing than conventional farmers to compromise on premiums at particular times of the year when demand is low. Organic producers may sell only when the best premiums can be achieved whereas conventional farmers may compromise on premiums so they can sell all year around. This has an impact on organic supply.

Meat processors utilise a number of different models in the management of supply and demand. A key to success is often the strong, long-term relationships in place up and down the supply chain. Meat producers may work together with a processor to provide a consistent supply. Some processors demonstrate a commitment to assisting their suppliers increase organic production beyond short-term financial considerations. For example, one major processor has the capacity and the market to double its output and has assisted its growers to develop business plans for their future growth. This operator also pays full organic prices to in-conversion farmers to encourage new suppliers to come on board. Another sometimes purchases more organic product than it can on-sell, then sells the surplus as conventional product, in order to assist growers.

One processor maintains a system of tracking producers and their stock available for sale, sells the meat before slaughter and processes and packs it to customer specifications. Contract processors work on behalf of farmers on a supply driven basis; meat is sold by the farmers to other higher value-adding processors, distributors or retail outlets as and when it becomes available. In some areas, not all stock grown as organic is ultimately sold as organic product. This suggests that existing production volumes could meet an increased level of demand.

In Victoria, a key processor is trying to fill the gap between grower supply and retail demand by undertaking a brokerage role in assisting farmers to sell their products to retail outlets. In South Australia there is a shortage in supply of organic meat and market demand is often not met. Poultry is sourced from other states.

Fruit and vegetables

In relation to fruit and vegetables, respondents advise that the majority of produce is sold fresh (unprocessed or minimally processed). The major retailers, to date, have allocated only modest shelf space for organic fruit and vegetables, so wholesalers are key partners in the supply chain. Wholesalers of fresh vegetables and groceries consistently reported problems in sourcing sufficient supplies to meet demand:

- the over or under availability of produce despite forward planning and scheduling
- the need to sell organic produce within two or three days of harvest, and
- the difficulty of building customer confidence due to an inability to forward sell or guarantee on-time delivery.

Wholesalers interviewed noted that seasonal variations are more marked in the case of organic fruit and vegetables and that they are also more prone to insect infestation. Organic fruit and vegetable producers tend to be clustered in geographic pockets, which means that adverse weather conditions or insect infestation may affect all the producers in an area at once. It therefore comes as little surprise that most wholesalers interviewed buy regularly from several sources (including interstate). This presents particular problems in Western Australia where freight costs from the more abundantly producing eastern states reduce margins or increase prices. A processor of fruit juices is forced to import orange juice concentrate if there is a lack of domestic supply of juicing oranges. Juicing operations absorb excess or poor quality fruit but, during a shortage, juicing grade fruit may be diverted to the fresh market.

According to those interviewed, the market for organic fruit and vegetables is demand driven and there are opportunities for new growers to enter organic production. There are considered to be few opportunities for wholesalers to shop around and there is not enough variety in organic produce to offer an attractive range. The concern was expressed by some, however, that the situation could reverse very quickly, in which case there may not be enough business to sustain a lot of new or large growers.

In terms of sourcing, wholesalers procure product from farmers, other wholesalers and fresh produce markets. One wholesaler indicated that supermarkets comprise 50% of their sales volume with the balance made up by small stores and processors. Another indicated that they pre-pack fruit and vegetables for one supermarket which comprises 15% of their business, with the balance going to small retail stores, home delivery businesses and to processors. A large processor and wholesaler of organic grocery lines made the point that distribution is easier when working with the large retailers.

A number of wholesalers who were interviewed are involved in export markets. They all indicated that they could export far more if there was sufficient reliable supply. It was strongly suggested by one interviewee that this could not be achieved efficiently by many small growers, it would need much larger operations with hundreds of hectares in production.

The potential for export market development, in advance of the development of a more substantial domestic market, was noted by McCoy & Parlevliet (2000) who concluded:

Like many emerging new industries, stimulation of market demand requires a reliable supply of suitable products. Although considerable latent demand is believed to exist, producers are less willing to convert to organic methods unless a ready market is established. Ready markets are established overseas and the organic industry must pursue these export opportunities as a means of stimulating production and possibly the domestic market.

Strong supply chain relationships and information sharing once again appear to provide the key to improving the supply-demand relationship. One wholesaler sends out requests and information to farmers on what to grow and when, based on market demand. Another undertakes research to be shared with producers on managing barriers to production, such as weed control and crop nutrition. Good relationships provide the best opportunities for the use of available products.

Despite the relatively high excess of demand over available supply, one wholesaler supplying to processors reported that demand is not stable, with small batches and short order lead-times. There is a need for demand schedules from processors.

Sugar

Very little organic sugar is produced in Australia, and interviews revealed that current volumes are likely to decline in the future. The view was expressed that only those with a commitment to the inherent value of organic production systems would remain, as there is little economic incentive available.

A cane grower's cooperative in Queensland, around 10% of whose membership produces organic sugar, contracts with one mill for processing. All organic sugar in Australia is processed through this mill. According to interviews, around one-third is destined for raw sugar with the rest going into molasses production or into other sugar-related products. Sugar is processed and stored in bulk bags. Some is then further cleaned for retail sale by contractors. Some is sold to a major company for cleaning, packaging and retailing work.

Organic sugar is sold in a raw sugar form because further processing or refinement remains unviable due to the costs associated with cleaning equipment for what are relatively small volumes. At this stage there appears to be an oversupply of sugar but there is a dwindling supplier base. Survey respondents believe that any rise in demand, and price, may quickly overwhelm supply. There appears to be increasing interest in organic sugar from overseas, especially the United States and Europe, however these markets restrict access to Australian sugar producers through the imposition of trade barriers (for example, tariffs, preferential trading status for developing countries).

Price premiums and costs

Price premiums strongly influence not only the market for organic products, but also the structure and functioning of supply chains. Organic products, where sold as organic, often attract premiums at every step of the supply chain. Given their position midway along the supply chain, processors and distributors are knowledgeable about situations facing both farm-level producers and retailers. Interviewees expressed strongly held opinions on price premiums affecting farmers, distributors, processors, retail outlets and consumers. Management of premiums across the supply chain is important in the development of good relationships. A transparent understanding among chain partners of the possible long-term reduction in premiums, as volume increases, is also important. The views of wholesalers and distributors on price premiums as they relate to other parts of the chain are therefore important in this discussion.

Ensuring that financial returns to farmers are sufficient to ensure long-term viability is viewed as essential for good environmental management, sustained production of high quality products and employment generation. Moreover, ensuring reliable and high quality produce is aided by strong long-term relationship building, a prerequisite for which is farmer viability. One respondent expressed the concern that if too much pressure is placed on the returns of organic farmers, there will be less diligence in the application of organic principles and practices, resulting in a decrease in quality and standards.

On the other hand, the viability of organic markets is at least partially dependent on the maintenance of competitive pricing at the consumer level. A number of interviewees expressed concern that the main threat to organics is pricing. Of importance, however, was the view repeatedly expressed that consumers of organic products have a belief in the environmental and health benefits of these products. They are not necessarily wealthy consumers. Others indicated that they believe that organic products are only affordable to a narrow demographic and would always be a niche market product. But fruit and vegetables, at least, are seen to be becoming more mainstream and a number of processors are successfully getting their products onto supermarket shelves.

According to interviewees there are greater variables and risks attributed to organic processing, wholesaling and distribution. However viewpoints differ amongst processors as to whether operating with organic products incurs extra monetary costs. After the initial equipment outlay that may be required for some types of processing, the consensus seemed to be that the running cost of processing tends to be the same for organic and conventional product, albeit with added inconvenience due to the need to separate organic processing to prevent cross-contamination. The cost of transport and handling is higher, however, due to the need for segregation and inefficiencies arising from a lack of critical mass. Contract processors interviewed indicated that they charge more for processing organic products, with one nominating a figure of 10%.

Some processors and distributors may be struggling to make a profit or generating only a slim margin. For many, organic processing is only a very small part of their operation and this does not therefore make a huge difference to their overall viability. One company indicated it was worth further developing their organic business, but only just. In general, those companies focusing exclusively or mostly on organic products appear to be predominantly motivated by a genuine commitment to the values of organics and are less concerned about high returns.

While a number of the processors and distributors interviewed supplied the major supermarket chains and saw these outlets as being a key growth area in the organics market, others expressed concern with regard to margins. Two processors of specialty dairy products choose to sell only to smaller retail outlets in order to sell for a higher premium and avoid their products taking on the status of a high turnover-low margin line.

An interesting finding was that some smaller operators, such as cheesemakers, believe that their returns are more reliant on the quality and uniqueness of their product rather than the organic premium. Gourmet cheeses attract a high retail price and have an additional point of difference, appealing to a range of customers. The organic character of a product is considered a less significant motive for consumers of speciality cheeses than for other products.

While processors maintain a strong business sense regarding organics, a strong theme that emerged from the interviews was that, across the supply chain, profit is not always the primary motivation for dealing in organics. Many are committed to make the organic food industry work in the long-term.

The interviews revealed a number of issues and viewpoints relating to particular product groups.

Dairy

Some post-farm-gate actors in the dairy supply chain considered it was important for farmers to take some risk if they are to get fair returns. In order to sell their products they have traditionally had a tendency to accept what margin is left after everyone else has made a profit. To change this situation, some argued that they should set and stick to a price, based on sound financial and business principles. This provides a challenge to manufacturers, distributors and retail outlets to adopt efficiencies.

One major player in the dairy supply chain works with farmers in the application of a pricing model based on sound business outcomes for farmers. The farmer's price and the price the consumer is willing to pay are set and the businesses in the supply chain must achieve their margins within these parameters. This seeks to manage the pressure on farmers' margins and encourages an efficient supply chain which achieves lean but profitable margins throughout. Some of the smaller processors argued that because they are part of a short supply chain, linking farmers and consumers, and have significant control over margins throughout, it allows them to adopt a win/win approach and build strong relationships.

Meat

The main factor pushing the cost of organic meat processing and distribution up, according to interviewees, is freight. Meat products have a low value-to-weight ratio and organic meat has to be kept separate when trucking. A truck that may transport a tonne of conventional product might only transport 200 to 300kg of organic meat.

Varying viewpoints were presented as to the cost of organic meat production. One interviewee indicated that producers of organic beef require infrastructure, such as fencing, over and above the needs of conventional farmers. In addition, feed costs may be higher. On the other hand, another asserted that while land management costs may be higher, cattle management costs are lower and the total cost of production is actually less than that for conventional beef. There were also widely differing opinions on premiums charged at farm-gate level. Views were expressed both that farmers are seeking too high a price and that they are not receiving a high enough premium. Some expressed the view that the perception of higher production costs is leading to an inflated price at consumer level. To date, demand has been sufficient to allow the high price to be maintained by farmers; processors believe it unlikely that producers would take the risk of reducing this in order to build the market. More work in clarifying these claims and counter claims appears warranted in order to create sustainable meat supply chains.

In relation to the cost of production, there appear to be some variations between states. Differing land values affect farmers' comparative levels of investment in stock and land. For example, it was argued that farmers in Queensland can run larger numbers of stock on larger areas of land than farmers in the southern states. In Tasmania, for example, it was claimed

that organic meat production is not profitable for the farmer, who was said to be only capturing about a 10% price premium. This is despite the fact that consumers may be paying up to three and one-third times more for organic meat. Producers of Tasmanian organic meat are often retirees, lifestylers or those with second incomes for whom profit is not necessarily the key issue. Other crops are a lot more profitable on limited land areas, for example, cattle may generate about \$450 per hectare and apples may generate about \$40 000 per hectare.

In terms of premiums at the processor level, one processor indicated that they receive a much higher premium for processed meat products, such as bacon, than they do for cuts of organic meat.

Fruit and vegetables

A lack of economies of scale appears to be a significant driver of price premiums and may reduce profit margins across the supply chain in the fruit and vegetable area. Small wholesalers must manage a reasonable range of different lines in low quantities, while logistics and transport costs can become difficult to manage. Interviewees reported that major supermarkets pay less for small quantities of organic lines.

According to interviewees the farm costs of organic vegetable production depend on the type of crop. More labour intensive crops are those, such as onions and garlic, that require a lot of hand weeding. The processing costs may be increased by the need to keep inventory to allow for seasonal fluctuations. However, the view was expressed that some growers overestimate the worth of organic vegetables and that price premiums are likely to drop as supply increases. One processor advised that he pays a 100% premium on apples, 50% on oranges and 300% on carrots, while an average premium on organic produce internationally is around 25%. A manufacturer of fruit juices advised that he can import juice concentrate from overseas for a lower cost than buying and processing local fresh fruit.

There may be a greater need in organic processing to keep supply and distribution chains short. A processor of baby food products indicated that there is insufficient margin in his supply chain for an additional distributor and the company needs to market direct to retailers.

Marketing activities and consumer markets

Views on the Australian organic consumer

During our interviews we took some time to see how processors and distributors viewed the consumer market for organic foods. This makes an interesting point of contrast with the views of consumers as reported in Chapter 5 Who consumes organic foods in Australia? Their responses suggest that they believe there is a strong niche market of dedicated consumers of organic products who may not necessarily have a high disposable income. They may be health conscious, chronically ill or strongly supportive of organic principles. A major wholesaler of fresh produce, grocery and dairy lines identified four types of organic consumers, with sales distributed fairly equally between them. These were:

- affluent people making a healthy lifestyle choice
- alternative lifestylers and idealists who may not have a high disposable income
- sick people consuming organic food with the belief this will improve their health
- people who buy organic food primarily for the belief that it is better for their children's health.

There was also some concern that organic products are not affordable for most consumers and therefore will remain a small niche market.

It also seems that in some cases, because processed organic foods are specialty foods, their organic status becomes incidental to their marketability. That is, because organic products may also be speciality, high quality products, the fact that they are organic may be secondary or even not recognised by consumers. For example, one solely organic processor of specialty cheeses reported their market research had revealed that 9 out of 10 purchasers of their cheeses did not know it was organic. The cheese proved attractive because it was a known brand and slightly cheaper than some other speciality cheeses. A processor in Western Australia advised that consumers buy his products largely because they are locally owned and grown.

A recurring theme on the part of processors is their view that consumers are well informed about organics. Many felt there is a greater community awareness developing about organic and healthy food. Indeed, one commented that this represents a significant social change. Another expressed their belief that organics are becoming more mainstream and less likely to be associated with 'hippies' and 'greenies'.

There is a strong belief, at least amongst those we interviewed, that the key to growing the organic consumer base is through publicity about the principles and perceived health benefits of organic production methods. A number of processors reported that they include information about organics on their labelling. Others do not, either for economic reasons or because they feel it is unnecessary.

There was divided opinion on the portrayal of organic food in the mass media in Australia. A number of positive comments were received about the portrayal of organic methods, organic products and the people and organisations involved with them. This publicity has mainly had a current affairs focus. However, the converse view was also expressed – that there are too many negative comments about organics in the media. Overall, there was a concern at the absence of industry-wide organic promotion, with publicity mainly up to individual operators. While there was an acceptance that promotion is the responsibility of every individual business operator, strong support existed for more domestic promotion on the part of the organics industry in general.

Several processors and producers noted that one problem in promoting organic foods domestically is differentiating its added qualities from those of general produce. Australian produce is generally seen by the public as clean, green and healthy. A key player in the organic meat industry commented that many consumers who are concerned about their health and consider the alternatives to what they eat are happy to purchase conventional products. He advised that these consumers account for about 30% of the overall market for organic meat, while dedicated organic consumers account for about 2%. The remainder buy conventional meat as a matter of course. This highlights one major challenge in expanding the domestic market for organic goods.

While domestic market expansion is an important theme, an equally strong theme emerging from our interviews is the need to stay away from mass-produced products. A number of interviewees indicated they would rather keep their outputs small and build their products as unique and high quality, not high volume. To maintain this niche status, with the attendant

price premiums, a range of marketing tools are deployed. Processors reported the increasing recognition of organic brands among consumers, positive reactions to attractive packaging depicting boutique or country themes, a desire on the part of consumers to know about the origins of organic products and a loyal base of customers growing through word of mouth.

The organic industry relies on communicating to consumers its organic quality. This is achieved through industry standards, certification and labelling. A well recognised risk to the organic industry is that these systems are shown to be unable to guarantee that what is sold as organic is indeed organic. A major wholesaler of fruit, vegetables and grocery lines made the significant point that the success of organics is based on integrity throughout the supply chain. Every box of produce has to be accounted for and must be traceable to its origins. There is a need to 'track every carrot'.

Organic processors and wholesalers supply a wide range of retailers. While supermarkets appear to be increasingly involved in the sale of organic products, a number of interviewees have made the decision not to sell at these outlets in order to retain their image as speciality rather than commodity products. Others expressed concern at the low prices offered by supermarkets and the resulting reduction of margins along the supply chain. This is an issue familiar to conventional food supply chains. But, as recent work in the United Kingdom demonstrates, often what starts as a farmer-dominated supply chain explicitly formed to redress issues of price disparity up and down the chain, often becomes absorbed into the routines of conventional chains (see Smith and Marsden 2003). While there is no price formation study available for the organic supply chain in Australia, there is clearly an issue in ensuring the viability of all parties from farmer to retailer.

Many processors and wholesalers are selling to specialty organic outlets and health food stores; one supplies processed meat products to a major department store. Several supply restaurants; a small Western Australian processor has just started supplying one of Perth's top restaurants. Another is negotiating product sales through pharmacies. Several have strong direct relationships with their consumer market through retail outlets or tourist attractions on their premises. A boutique organic cheese maker has adopted an innovative approach to promoting organic products and expanding his organic milk market by hosting cheese making courses for a major university.

Market growth

Diverse opinions were expressed in our interviews as to the rate of market growth, or whether the market is growing at all.

Dairy processors were of the general view that the market is growing slowly, but the growth is reflected in products like yoghurt rather than cheeses. Some reported a steady stream of customer enquiries for their products and, when they stopped production, requests to reinstate products were quick to come.

Processors of organic meat also expressed diverse opinions. Some are of the general view that demand for organic meat is not high as Australian meat is already clean and green, removing one of the unique selling points. However, demand is increasing and people are more willing to pay a higher price. One processor, with contracts to supply one of the major retail chains, reported demand for their product had doubled over the past 12 months, albeit from a very small base. The operation could handle a 100% increase in volume and has strong alliances

with its suppliers. They have a market for at least this level of increase. Currently they supply 70 Coles supermarkets (selected by Coles as having the best demographic for organic sales) and they could supply 484. Another operation producing processed organic meat products reported receiving almost constant enquiries about organic products; they have had two or three new customers in the last 12 months. While growth is happening, they conceded that they originally thought it would be quicker.

Among fruit and vegetable wholesalers there was a general view that supermarkets represented the major retail growth area for fresh organic produce. There was a view that organic produce is becoming more mainstream; that supermarkets are aware of the growth in overseas organic markets and are acting accordingly. This notwithstanding, market growth is said to be well below some estimates. One wholesaler reported that growth is more like 3 to 4% per annum and not the 20 to 30% sometimes claimed. Others maintain growth is much higher. All agree that growth rates are substantially lower than in European Union nations. As mentioned earlier, among those we interviewed, price premiums were expected to provide some kind of ceiling on domestic market growth.

A number of comments were received about the issues of dealing in overseas markets. One beef exporter commented on the ambiguity, outside the European market, of the term *organic*. There is a perception in some overseas markets that the terms *natural* and *organic* are one and the same, providing a challenge in marketing the organic point of difference. This situation is slowly changing in some countries, such as Japan. On the other hand, another commented that in the overseas market organic meat is often of a higher quality than conventional meat, adding to the attractiveness of the organic product.

An exporter of juice products commented on the difficulties inherent in the requirement to be certified with both an Australian body and the relevant overseas body in order to export to some markets. Some of these have more stringent standards than those of the Australian certifying organisations. Another commented that expectations of organics in overseas countries differ from those in Australia. For example, in the European Union the length of time live cattle remain in the truck when being transported is more significant than it is in Australia.

Other exporters are positive about the export market for organic products. A large dairying organisation is exporting to Japan and believes the market is just opening up for them. At present their export level is very low but projections indicate that, within 12 months, they will be exporting 70% of one of their product lines.

Conclusion

Wholesalers, distributors and processors of organic food articulated a range of opinions about the control of supply and demand, the market for organic products and price issues. While not attempting to map the supply chains, an insight has been gained into the structures of the organic dairy, meat, and fruit and vegetable supply chains. Wholesalers, distributors and processors are in a unique position to facilitate and coordinate demand and supply issues. Their opinions and perspectives are a valuable resource for industry development. The problems of these organic supply chain participants associated with supplying product to meet demand suggest that, overall, demand exceeds supply. However, due to seasonal surpluses and the relatively undeveloped organic supply chain, there are times when available product exceeds market demand.

Planning, communication and coordination are key challenges for organic supply chains. This is evident in the fruit and vegetable area. While several dedicated organic wholesalers and distributors exist, they deal with a large number of small growers, making communication and coordination both difficult and costly. Examples quoted, by meat and dairy processors in particular, illustrate how a long-term approach and active steps to work with farmers can yield mechanisms to better manage supply and demand.

Interviews suggested that the capacity to process organic products is not a constraint. Rather, limitations on processing of organic products emerge from shortage of inputs at the right quality, price and volume. This leads to occasionally importing raw materials and discourages investment in product development, brand building and manufacturing technology.

Interviewees are optimistic about prospects for the organic food industry. This is expected from dedicated organic food processors. However, even in companies where only a small proportion of their turnover is organic, there are individuals championing the organic food sector.

Processors have some broad observations on the organic industry:

- The supply of organic raw produce is generally sufficient for current domestic sales levels, but not sufficient for them to deliver reliably and consistently, nor to satisfy latent demand or build new organic brands. This limits growth and investment.
- Processors, wholesalers and distributors have taken on roles as organic supply chain facilitators by instituting positive steps to deal with problems of over- and undersupply in a way that does not reduce prices and the viability of the entire chain.
- The extra costs of processing organic foods are small and tend to be limited to transport and logistics.

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CHAPTER 4

The retail pricing, labelling and promotion of organic food in Australia

Darren Halpin

Centre for Social Science Research, Central Queensland University

and Martin Brueckner

Centre of Excellence in Cleaner Production, Curtin University of Technology

Introduction

This chapter reports the results of research aimed at answering three basic questions:

- What price premiums exist for organic foods at retail outlets in Australia?
- What certifying organisation labels are displayed on organic produce sold in stores in Australia? and
- What messages or arguments are used to promote organic products in Australia at the point of sale?

To answer these questions data was collected by a series of national store checks. This is a similar approach to that taken by Michelsen *et al.* (1999) and Hamm *et al.* (2002) in their respective studies of the European market for organic food. Retail store visits were the tool used to identify the labels on organic products, the arguments used to sell organic products at the point of sale and the retail price premiums for organic products. Store checks involved individual researchers visiting selected retail stores to make observations on labelling, sales arguments and price information. In the European studies, a sample of approximately 10 stores was used per nation. In this study we surveyed over 70 stores to cover the Australian market, which is a comparatively small market compared to most European Union nations. Consequently, the sample adopted here is comparatively large and comprehensive.

The data reported in this chapter was collected from a series of store checks undertaken during December 2003 and January 2004 in six capital cities in Australia (Sydney, Brisbane, Melbourne, Hobart, Adelaide and Perth). Resources were insufficient to look at regional, rural or remote areas in this study. Individual researchers were provided with a store list and a standardised store price check survey which they used to collect and enter data. At the outset of the project a list of products was drawn up through consultation with the Australian Government Department of Agriculture, Fisheries and Forestry and the Organic Federation of Australia. This was subsequently pared back and modified through additional consultation with the Organic Federation of Australia board and the department to better reflect the main products likely to be found in Australian retail stores. Given the profile was of the Australian organic industry the study aimed to include products likely to be grown or manufactured in

Australia as opposed to exclusively imported products. The list included processed and packaged foods along with fresh fruit, vegetables, meat and dairy products. The full list of products surveyed is listed in Table 4.1.

Table 4.1 Items included in retail study

wholemeal flour	pumpkins	rump steak
plain flour	potatoes (unwashed)	minced beef (standard quality)
muesli (with dried fruit or nuts)	sweet potatoes	lamb chops (mid-loin chop)
rolled oats	tomatoes	pork cutlets
plain wholemeal wheat flour	brown onions	minced pork
bread	oranges	whole chickens (for roasting)
wheat biscuit cereal	beans	chicken eggs
baby food in glass jars (carrots, potatoes or similar)	lettuce	fresh milk (full fat)
extra virgin olive oil	zucchini	fruit yoghurt (strawberry or similar)
spaghetti (plain wheat)	carrots	natural yoghurt
	apples	soft cheese
		hard cheese

The data was processed and analysed centrally by the authors, which minimised the possibility of error, particularly with respect to calculating price premiums. A full discussion of research methods, both data collection and analysis, is in Appendix 1.

As in related chapters, the word *organic* is used in connection with food or fibre and with various farm, processing or retailing businesses. For the purposes of this research, *organic* is taken to mean a primary product (food or fibre) or agricultural, processing or retailing enterprise, which has been certified as organic by a recognised (Australian or otherwise) certifying organisation. This term also includes products or enterprises certified as *biodynamic* by such certifying organisations.

The chapter proceeds in two sections. The first provides a review of existing literature and research findings in Australia and Europe. The second reports results from our store data. Each is broken into subsections reflecting the three research aims: retail price premiums, sales arguments and labelling.

Background

Price premiums

As with a market for any good or service, price is an important signal for consumers and producers. From a theoretical standpoint, price both mediates and is regulated by supply and demand. The unique factor to bear in mind in examining organic food pricing is that organic food and non-organic equivalents are *substitutable*. This means that demand for organic food products is highly contingent on its pricing relative to conventional products. As a result, the pricing of organic food will continue to be a key determinant of consumer demand for organic produce and market growth. Indeed, price and product availability featured as the most commonly cited obstacles to the purchase of organic food in Australia (see Lyons *et al.* 2001 and Chapter 5 Who consumes organic foods in Australia?).

The issue of price competitiveness has implications for the setting and consumer acceptance of organic product price premiums. This has made the issue of price premiums a topic of considerable debate even within the movement itself. There is a deal of controversy within the organic movement itself about the value or otherwise of price premiums. For the most part price premiums are held to be important as a signal to potential producers of the profitability of going organic. Of course, price premiums at retail level neither guarantee nor indicate price premiums for the growers or producers but they are nevertheless used as signifiers of a viable and potentially lucrative industry. However, there are concerns that basing the growth of the organic industry on consumer price premiums sends the wrong message about organic food: that it is not a food for the average consumer. Indeed one leader in the Australian organic wine industry noted, 'We don't think that [a price premium] is appropriate because one day all produce will be certified organic' (*Australian Organic Journal* 2002, p.17). Clearly, premiums do accrue to individual organic wines, but largely for reasons related to flavour and qualities other than its organic status.

There may, of course, be good reasons why organic products should be priced more highly than conventional products. It is often claimed that organic production methods are more labour-intensive and the yields for crops, fruit and vegetables are often slightly below those of comparable conventional products. Additionally, organic production volumes tend to be lower and require dedicated processing, storage, handling and distribution chains, which is said to add costs above and beyond existing production processes. The data to support these claims is scarce, however they seem intuitively plausible. Aside from the immediate costs of production and post-farm-gate handling of products, organic products are given a premium price to reflect the unique characteristics of the organic farm system. That is, consumers are asked to pay an additional price in order to reflect the stewardship and environmental care element of the organic system.

While there may be a great deal of debate over price premium levels, there is little in the way of systematic data collection on actual premiums. There is, however, a lot of conjecture. One international report claimed that cereal and livestock products gain premiums from 50 to 75%, while fruit and vegetables gain a premium of around 50 to 60% (Yussefi & Willer 2003, p.67). An Australian industry leader quoted retail price premiums for fruit and vegetables of up to 100% and as much as 300% for meat (*The Bulletin* 2001). A *Choice* survey in May 2000 reported organic fruit and vegetables to be on average 70% more expensive than their conventional equivalents but with considerable variation between specific items (*Choice* 2000).

While debate over the exact size of organic retail premiums continues, there is a general concern that they are set above levels many consumers accept (see for instance, Pearson 2001; Queensland Department of Primary Industries 2003). Indeed, interviews with leading Australian retailers revealed a view that consumers would not be prepared to pay price premiums above 15% for organic foods. This belief may well result in supermarket chains pursuing a low-premium strategy in their development of organic lines. Willingness to pay is an important factor in expanding organic consumption beyond the committed organic consumer. A survey, conducted in 2000, of the willingness of Australian consumers to pay *any* price premium for organic food found that 28% of respondents are not willing to pay any premium at all, while 21% of survey participants are unsure if they would pay a premium (Sofres 2001, p.2). A follow-up study in 2001 found similar results, again with 28% of respondents unwilling to pay any premium and 18% unsure. The difference between Australian and United Kingdom consumer attitudes provides a useful point of comparison. An

equivalent United Kingdom study in 2002 found that 70% of all respondents are prepared to pay a premium for organic food (Sofres 2001; reproduced in Soil Association 2003, p.66). This seems to underscore the absence of a strong consumer awareness and commitment to organic food in Australia. It also suggests that copying United Kingdom product development and retailing strategies is unlikely to yield similarly impressive results in Australia.

There has been considerable research in Europe on retail price premiums. European research (Michelsen *et al.* 1999, p.70) has shown that price premiums tend to be higher for vegetables and fruit than for other products. This is largely because of the risk of spoilage and short shelf-life which, while common to conventional fruit and vegetables, is heightened in the face of a lower product turnover in organic lines. Meat, dairy and cereal-based goods tend to have only moderate premiums, certainly lower than fruit and vegetables. The reported differences between organic and free-range eggs are very small. In terms of country-by-country comparison, price premiums tend to be higher in countries with small organic sectors and where a small proportion of total organic sales are through a supermarket. This was explained by the increased costs of marketing associated with distributing and handling small volumes through a large number of small retail outlets. This latter scenario most closely approximates the Australian case.

The most recent European research confirms these findings (Hamm *et al.* 2002). It is reported that average European premiums are in the range of 40 to 50% for red meat, 100% for chicken meat and 48% for eggs. Dairy products like milk and butter (39% and 48% respectively) tend to have lower premiums than yoghurt and cheese (70% and 58% respectively), largely because the former are staple foods and consumers are very price sensitive about these products and well aware of prices for conventional goods. In fact, supermarkets often use these products as loss leaders to attract customers to their stores (Hamm *et al.* 2002). In terms of cereals, the European Union average premium is 75% for wheat flour and 61% for wheat bread. Fruit and vegetables generally attract quite high premiums (potatoes 91%, tomatoes 89%, onions 82%, cucumber 70%, oranges 65%) with the exception of apples and carrots (45% and 51% respectively) (Hamm *et al.* 2002, p.104). Other product price premiums of interest are olive oil with 100% and baby food with 36%. The low price premium for the latter product is attributed to the highly processed nature of the product, which means that the raw material price is a very small proportion of the final retail price, in combination with the large volumes sold.

One aim of the research reported in this chapter is to examine the price premiums for selected certified organic products in Australian retail outlets in order to create a benchmark for future data collection and price monitoring activities.

Organic certifying organisation labels and logos

Given that organic products are readily substitutable with conventional products and that price premiums are often applied to organic products, communicating that a product is organic and enunciating its key qualities to consumers is very important. Without such an effort the consumer's willingness to pay price premiums is likely to be quite low.

The certification process can provide confidence to consumers that what they purchase is indeed organic. The key mechanism for making consumers aware that a product is certified is by labelling and the use of certifying organisation logos. European research credits part of the success of countries like Denmark in promoting organic agriculture with the existence of

government-sponsored standards, and a *single, well promoted* governmental organic label with high levels of consumer recognition (Hamm *et al.* 2002, p.112). However, most countries still have a mix of European Union, national government, farm association and private labels and logos (Hamm *et al.* 2002, p.48).

It is imperative that the industry is able to differentiate goods that have been certified organic. Here the use of certifying organisation labels and symbols is important. Each certifying organisation in Australia (there are currently seven AQIS-accredited organisations) has its own label, with an additional national AQIS label (see Chapter 8 Regulation of the organic industry). While these labels exist, the degree of consumer awareness of them is another matter. No publicly available study has been completed on consumer recognition of certifying organisation labels. However, the absence of any general consumer awareness campaign means it is likely that recognition is very low and limited to the dedicated or committed organic consumer.

The second aim of the research reported in this chapter is to look at the prevalence of certifying organisation labels on organic products in Australian retail stores.

Sales arguments and promotions

The use of certifying organisation logos or labels aside, there is the issue of enunciating the unique qualities of organic products to consumers in the market-place. That is, establishing why price premiums are justified and why organic goods are qualitatively different from their conventional competitors. Promotion of organic products can be achieved in either direct or indirect ways (Michelsen *et al.* 1999, p.54). Promotion occurs indirectly, through general media coverage and public debates on issues like food scares and genetically modified organisms. It occurs directly through the coordinated efforts of the organic industry, including farm organisations, retailers and government bodies. This often takes the form of targeted newspaper, television and radio advertising campaigns.

In Australia, there is no generic promotion of organic produce (Department of Natural Resources and Environment 2000, p.1). The major food retailers have not, at least as yet, made organic food a central component of their public relations strategies nor have industry groups taken the initiative in this regard. This can be attributed to the absence of a dedicated organic industry levy to fund promotional activities, a fragmented certification sector and retail sales of organic food that are such a small percentage of total sales that retailers most likely do not see any commercial advantage in becoming organic champions. One interviewee from a national supermarket chain estimated that organic product sales accounted for less than 1% of total sales. This effectively limits the opportunities for individual consumers to find out more about organic production and products. Of course, individuals may become aware of organic products through indirect means. For instance, some women's magazines and lifestyle shows have become interested in organic food issues, although there is generally very little mass media communication on organic food themes in Australia. This is slowly changing but must always work alongside the general view of Australian consumers that their food supply is already clean and green (Clay 1999).

For the most part, any message to Australian consumers about organic food is likely to be relayed via point-of-sale material. This can take the form of messages on leaflets, on labels or on shelf talkers (information attached to shelves).

European research has examined, based on national expert assessments, the most prevalent sales arguments associated with organic food promotion (Michelsen *et al.* 1999, p.51) found that food safety and health are the most often used arguments, followed by environmental protection, taste, nature conservation and animal welfare. Hamm *et al.* (2002, p.112) used similar categories. They found that food safety is the most important sales argument, followed by nature conservation, taste, animal welfare and excluding genetically modified organisms.

The point has to be made that these arguments are what retailers and other market intermediaries *believe* consumers find appealing rationales for purchasing organic goods. Whether consumers find these convincing or relevant to their purchasing decision is another matter entirely and a fertile area for study. The final aim of the research reported in this chapter is to examine the use and prevalence of sales arguments for promoting organic products at the point of sale.

Results and analysis

The purpose of this section is to summarise the results of the retail store checks. The section is divided into three parts, one for price data, one for types of sales arguments and promotions, and one for labelling data.

Retail price premiums

As elaborated in the approach, the retail store check method was designed to produce as reliable price data as possible within the scope of the budget and time available. This report provides the first systematic collection of organic price data in Australia and, as such, provides a point of reference for future work. Great lengths have been taken to make the calculations and weighting transparent so as to enable future researchers to understand the methods, replicate them and compare their results with them. Further, those who disagree with some assumptions are easily able to re-weight the data to arrive at new figures.

Yet, even with an appropriate design, some factors reduced the depth of the data in ways not anticipated at the outset. These are important to understand. As will be evident, the range of organic products available in retail outlets in Australia is extremely limited. This is in itself an important finding. This meant that while 10 or more organic and conventional stores were surveyed in each capital city, often each store had only a handful of the products on our list. As a consequence, averages provided in the tables that follow may, in some cases, be based on only one or two price data points. It is also the reason why there is missing data for some products from some sales channels and in some states. This is unavoidable and reflects the variable nature of organic offerings at the retail level.

Missing data should not be read as evidence, or a claim, that certain organic products are not available in that state or through that sales channel. Rather, it was simply impossible within the scope of this project to locate those products. In some cases the explanation may be that organic products were entirely out of season and not available in some states, or simply that the product was in such short supply that only one outlet (one that was not sampled) had the product. In some cases it is likely that product supply is so erratic that a store may have a handful of products one week followed by a handful of different products the next week. Anecdotal evidence collected throughout this study suggests that store managers are generally dissatisfied with supply bottlenecks for organic fruit and vegetables. In an ideal world, one would sample over a month-long period, but the resources were simply not available to do so.

National

National average price premiums for all products included in the research are reported in Table 4.2. As illustrated below, the weighted national average price premium across the basket of surveyed goods is 80%.

Table 4.2 Weighted retail price premiums, national and state averages, by product, %

Product	SA	WA	Qld	Tas	Vic	NSW	National average	Weighted national average
Wholemeal flour	123	341	157	103	142	49	153	129
Plain flour	60	56	98	105	111	50	80	76
Muesli	148	481	100		57	137	185	141
Rolled oats	42	184	1	14	64	5	52	40
Plain wholemeal wheat flour bread	55	74	42	27	–	24	45	29
Wheat biscuit cereal	27	23	18	21	8	3	17	11
Baby food in glass jars	61	36	74	74	40	–5	47	32
Extra virgin olive oil	95	105	421	105	128	73	154	158
Spaghetti (plain wheat)	74	72	339	281	633	129	255	287
Pumpkins	152	133	170	44	79	41	103	93
Potatoes (unwashed)	28	98	157	22	43	38	64	66
Sweet potatoes	31	41	59	69	59	79	56	61
Tomatoes	29	184	44	–	74	46	76	64
Brown onions	90	70	107	85	78	61	82	77
Oranges	50	56	7	37	–12	23	27	17
Beans	82	–	226	–	159	88	139	120
Lettuce	57	34	15	23	89	36	42	46
Zucchini	152	93	96	37	187	90	109	119
Carrots	141	148	86	136	122	69	117	100
Apples	24	32	40		43	22	32	31
Fresh milk (full fat)	27	78	40	63	21	30	43	35
Fruit yoghurt	5	44	54	62	31	28	37	34
Natural yoghurt	6	40	22	48	–4	42	26	23
Soft cheese	3	2	189	85	47	4	55	51
Hard cheese	201	57	184	357	203	182	198	178
Rump steak	7	54	49	–	256	68	87	103
Minced beef (standard quality)	12	75	79	–	301	153	124	152
Lamb chops (mid-loin chop)	76	8	14	–	108	20	45	44
Pork cutlets	36	32	58	–	220	64	82	94
Minced pork	–	–	–	–	–	56	56	20
Whole chickens (for roasting)	84	7	91	–	118	54	71	73
Chicken eggs	20	42	45	22	53	36	36	41
Average	64	90	99	83	115	56	84	80

The major finding of this study is that existing premiums are well above what the average consumer is likely to be willing to pay for all products and product categories. The data illustrates that price premiums well exceed the 15% price premium that at least one of the Australian supermarket chains believes is acceptable to ordinary consumers. If, as the recent survey work cited in the outset of this chapter suggests, more than 28% of general consumers are unwilling to pay any price premium for organic products, the growth of organic consumption is likely to be inhibited by the existing levels of price premiums. The only product that was under the 15% level was organic wheat biscuit cereal, but this was largely attributable to the appearance of Coles' own brand on the shelves.

It is not possible to provide explanations for individual price data as this is not a price formulation study. Further, prices are the product of a range of individual commercial decisions that are in no way objectively explicable. However, in making sense of these prices a number of general factors and points seem important. As indicated earlier in this chapter, there are a number of good reasons why organic products are priced more highly than conventional products, including labour intensiveness of production as well as lower yields and low volumes which contribute to relatively higher costs for logistics and processing. But in terms of defending premiums on the basis of added expense for production and processing, the vast fluctuations in product premiums observed in this study across and within states, and across and within different sales channels, suggest that existing premiums are only very loosely based on such considerations. Inconsistent supply and poor coordination of distribution channels is often noted as one of the major factors holding back industry growth (Monk 1997, p.64). The strategic targeting of a perceived prestige market by members of the organic industry may also serve as an explanation for high price premiums. However, in the absence of a specific examination of the pricing issue, one is left to speculate whether these factors are likely to account for the high retail price premiums currently charged.

Additional factors in explaining premiums could include seasonality, with price linked to levels of supply. Apart from that, other peculiarities of the production process of specific goods are relevant to explaining premiums. For instance, the higher price premium for hard cheese versus soft cheese may in part be explained by the fact that soft cheese requires shorter production times than hard cheese and is therefore produced in larger volumes. Similarly, the relative consistency of organic egg prices could be interpreted as reflecting the concentration of the industry in a few very large producers and its very price-competitive nature. However, these averages mask considerable variations between stores, which from our observations are largely driven (and understandably so) by what stores are able to charge and the kind of clientele they serve (committed organic buyer versus general consumer). In this context, the availability of organic food in Western Australia, for instance, seems to be strongly related to the distribution of income levels in the Perth metropolitan area. Availability of organic products was found to be at its greatest in high income areas or in areas with a perceivably high quality of life (for example, Fremantle, Subiaco, Claremont and Dalkeith). This could lead to the suggestion that high premiums are being charged to a clientele with a disproportionately high willingness to pay due to high income levels or lifestyle preferences.

As indicated at the outset of the chapter, industry commentators have suggested that cereal and livestock products have premiums from 50 to 75% to as much as 300%, while various figures were provided for fruit and vegetables, including premiums of around 50 to 60%, 100% and 70%. This survey shows that the loose ranges previously provided are indeed

warranted (although the exhaustive sampling, averaging and weighting processes employed here should provide a more authoritative synopsis of pricing).

Table 4.3 reports premiums for product groups. Each item was placed into a broader product group: fruit and vegetable, meat, and dairy. For instance, Table 4.3 shows fruit and vegetable premiums ranging from 24% in Tasmania to 79% in Queensland. The premiums vary considerably between states, between product group types (for example, meat and fruit and vegetables) and between products within product groups (for example, soft cheese versus hard cheese).

Table 4.3 Weighted average price premiums for organic products, by state, %

Product	SA	WA	Qld	Tas	Vic	NSW
Meat	33	19	56	nd	92	65
Fruit and vegetables	76	88	91	24	68	53
Dairy	48	44	98	122	59	57
Average	64	90	99	83	115	56

nd = no data

Interestingly, New South Wales tends to have smaller price premiums than other states. The European studies cited earlier showed that price premiums tend to be higher for vegetables and fruit, and lower for meat, dairy and cereal-based goods. This holds true for South Australia, Western Australia and Queensland. However meat products have higher premiums in Victoria and New South Wales, while dairy has a higher premium in Tasmania. This may be explained by the small supply of organic meat on the domestic market in Australia which means prices are prone to fluctuate wildly.

In terms of relationships between price premiums and sales channels, the results are mixed. Table 4.4 reports premiums from those store checks conducted at major national retail supermarket chains and from non-supermarket outlets (including health food stores, fruit and vegetable shops, butchers and farmers' markets). Supermarkets appear to have higher price premiums in South Australia, Tasmania and Queensland. In Western Australia, New South Wales and Victoria supermarkets have lower price premiums.

Table 4.4 Average price premiums for sales channels, by state, %

Channel	SA	WA	Qld	Tas	Vic	NSW
Supermarkets	87	75	102	112	56	48
Other retail outlets	52	92	94	79	122	64

In the sections that follow the results are reported state by state, noting unique conditions pertaining to data collection where they seem relevant.

New South Wales – Sydney

Perhaps the most notable feature of the Sydney data is the lower price premiums compared to other states. The overall premium of 56% is relatively low. Only minced beef, spaghetti and muesli have price premiums over 100%. This may reflect the impact of higher volumes of

sales in Australia's largest city. But at least part of the explanation is that Sydney has a large number of small gourmet food stores which provide competition for organic food stores. Comparing gourmet conventional prices with organic store prices is likely to provide smaller premiums.

Table 4.5 Price premiums for Sydney, by organic product, %

Product	Supermarkets %	Other retail %	Weighted average %
Wholemeal flour	39	57	49
Plain flour	39	57	50
Muesli	137	–	137
Rolled oats	5	–	5
Wholemeal wheat bread	29	20	24
Wheat biscuit cereal	3	–	3
Baby food in glass jars	–5	–	–5
Extra virgin olive oil	132	34	73
Spaghetti	63	174	129
Pumpkins	63	27	41
Potatoes	76	13	38
Sweet potatoes	48	100	79
Tomatoes	27	59	46
Brown onions	55	65	61
Oranges	–9	43	23
Beans	–	88	88
Lettuce	70	13	36
Zucchini	153	48	90
Carrots	73	67	69
Apples	–7	41	22
Fresh milk (full fat)	30	–	30
Fruit yoghurt	40	20	28
Natural yoghurt	42	–	42
Soft cheese	4	–	4
Hard cheese	182	–	182
Rump steak	50	81	68
Minced beef	24	239	153
Lamb chops	–12	42	20
Pork cutlets	–	64	64
Minced pork	–	56	56
Whole chickens	22	75	54
Chicken eggs	7	56	36
Average	48	64	56

Table 4.6 Weighted average price premiums for Sydney, by product category, %

Meat	65
Fruit and vegetables	53
Dairy	57
Average	56

Queensland – Brisbane

Brisbane has been the location for most consumer studies of Australian organic food. However, the observations of the data collector in that city suggest it may be unique. In the areas of Brisbane that are traditionally inhabited by middle to high income, well educated social groups there is limited organic produce. Conversely, the only supermarket to stock organic meat is located in an area of lower incomes.

Table 4.7 Price premiums for Brisbane, by organic product, %

Product	Supermarkets %	Other retail %	Weighted average %
Wholemeal flour	–	157	157
Plain flour	36	139	98
Muesli	–	100	100
Rolled oats	10	–5	1
Wholemeal wheat bread	33	49	42
Wheat biscuit cereal	53	–5	18
Baby food in glass jars	33	101	74
Extra virgin olive oil	893	107	421
Spaghetti	18	553	339
Pumpkins	93	221	170
Potatoes	326	45	157
Sweet potatoes	56	60	59
Tomatoes	51	40	44
Brown onions	84	123	107
Oranges	44	–18	7
Beans	–	226	226
Lettuce	49	–8	15
Zucchini	–	96	96
Carrots	110	70	86
Apples	26	49	40
Fresh milk (full fat)	67	21	40
Fruit yoghurt	–	54	54
Natural yoghurt	32	15	22
Soft cheese	–	189	189
Hard cheese	–	184	184
Rump steak	7	77	49
Minced beef	79	78	79
Lamb chops	–	14	14
Pork cutlets	–	58	58
Minced pork	–	–	–
Whole chickens	91	–	91
Chicken eggs	56	37	45
Average	102	94	99

Table 4.8 Weighted average price premiums for Brisbane, by product category, %

Meat	56
Fruit and vegetables	91
Dairy	98
Average	99

Victoria – Melbourne

As with other capital cities, Melbourne has a lack of independent grocery stores or general food stores with which to compare organic stores.

Table 4.9 Price premiums for Melbourne, by organic product, %

Product	Supermarkets %	Other retail %	Weighted average %
Wholemeal flour	–	142	142
Plain flour	39	158	111
Muesli	–	95	57
Rolled oats	68	61	64
Wholemeal wheat bread	–	–	–
Wheat biscuit cereal	8	–	8
Baby food in glass jars	40	39	40
Extra virgin olive oil	–	128	128
Spaghetti	–	633	633
Pumpkins	34	109	79
Potatoes	–1	73	43
Sweet potatoes	67	53	59
Tomatoes	80	70	74
Brown onions	101	63	78
Oranges	–33	2	–12
Beans	–	159	159
Lettuce	100	81	89
Zucchini	169	200	187
Carrots	169	91	122
Apples	67	27	43
Fresh milk (full fat)	22	21	21
Fruit yoghurt	46	20	31
Natural yoghurt	40	–33	–4
Soft cheese	11	71	47
Hard cheese	–	203	203
Rump steak	–	256	256
Minced beef	–	301	301
Lamb chops	–	108	108
Pork cutlets	–	220	220
Minced pork	–	–	–
Whole chickens	–	118	118
Chicken eggs	32	67	53
Average	56	122	115

Table 4.10 Weighted average price premiums for Melbourne, by product category, %

Meat	92
Fruit and vegetables	68
Dairy	59
Average	115

Tasmania – Hobart

Hobart is a city that still retains many small independent grocery stores. As such, the data comes from organic stores and independent supermarkets as opposed to large retail grocery chains.

There was great difficulty in finding organic meat prices for Tasmania. According to interviewees there is only one organic meat producer in Tasmania and this producer sells much of its product direct to consumers. Further, an organic store owner noted that for the past 12 months organic livestock had been sold on the mainland because of better prices and a lack of local demand, with very little being slaughtered and sold through outlets in Tasmania. The producer of organic beef in Tasmania provided the following prices: rump steak – \$28 per kg (range from \$20 to \$38 per kg), minced beef – \$15 per kg, lamb chops – \$24 per kg. No evidence could be found of organic pork production or sales in Tasmania.

The most notable feature of Table 4.12 is the excessively high price premium for dairy products.

Table 4.11 Price premiums for Hobart, by organic product, %

Product	Supermarkets %	Other retail %	Weighted average %
Wholemeal flour	156	68	103
Plain flour	136	85	105
Muesli	–	–	–
Rolled oats	–	14	14
Wholemeal wheat bread	42	17	27
Wheat biscuit cereal	30	15	21
Baby food in glass jars	23	108	74
Extra virgin olive oil	–	105	105
Spaghetti	10	461	281
Pumpkins	–	44	44
Potatoes	–	22	22
Sweet potatoes	–	69	69
Tomatoes	–	–	–
Brown onions	–	85	85
Oranges	–	37	37
Beans	–	–	–
Lettuce	–	23	23
Zucchini	–	37	37
Carrots	–	136	136
Apples	–	–	–
Fresh milk (full fat)	69	59	63

Table 4.11 cont.

Product	Supermarkets %	Other retail %	Weighted average %
Fruit yoghurt	62	62	62
Natural yoghurt	70	34	48
Soft cheese	99	75	85
Hard cheese	534	240	357
Rump steak	–	–	–
Minced beef	–	–	–
Lamb chops	–	–	–
Pork cutlets	–	–	–
Minced pork	–	–	–
Whole chickens	–	–	–
Chicken eggs	–	22	22
Average	112	79	83

Table 4.12 Weighted average price premiums for Hobart, by product category, %

Meat	–
Fruit and vegetables	24
Dairy	122
Average	83

South Australia – Adelaide

In Adelaide there are very few shops of a similar size to organic stores, as the supermarkets are open seven days and have pushed these small stores out of the market. In fact, the organic stores are probably only surviving due to their specialist nature and the fact that supermarkets do a poor job of presenting and supplying certified organic foods. Again, this made data comparison difficult.

Table 4.13 Price premiums for Adelaide, by organic product, %

Product	Supermarkets %	Other retail %	Weighted average %
Wholemeal flour	147	106	123
Plain flour	62	59	60
Muesli	120	166	148
Rolled oats	74	20	42
Wholemeal wheat bread	109	18	55
Wheat biscuit cereal	19	33	27
Baby food in glass jars	55	64	61
Extra virgin olive oil	109	86	95
Spaghetti	46	92	74
Pumpkins	248	88	152
Potatoes	45	17	28
Sweet potatoes	37	28	31

Table 4.13 cont.

Product	Supermarkets %	Other retail %	Weighted average %
Tomatoes	7	44	29
Brown onions	137	59	90
Oranges	45	54	50
Beans	100	70	82
Lettuce	87	37	57
Zucchini	231	100	152
Carrots	166	125	141
Apples	42	12	24
Fresh milk (full fat)	28	26	27
Fruit yoghurt	22	-7	5
Natural yoghurt	14	1	6
Soft cheese	5	1	3
Hard cheese	312	127	201
Rump steak		7	7
Minced beef	50	-14	12
Lamb chops	-	76	79
Pork cutlets	-	36	36
Minced pork	-	-	-
Whole chickens	-	84	84
Chicken eggs	32	13	20
Average	87	52	64

Table 4.14 Weighted average price premiums for Adelaide, by product category, %

Meat	33
Fruit and vegetables	76
Dairy	48
Average	64

Western Australia – Perth

Perth supermarkets provide poor and variable ranges of organic food which made finding price premiums for that sales channel very difficult. For instance, organic meat was found in one supermarket one day but was gone the next and did not return for two weeks. Although the product was the wrong cut to include in this study, the premium was 14%. Irregular supply undermines any attempt to develop committed organic consumers from among the general consumers who shop at supermarkets.

Table 4.15 Price premiums for Perth, by organic product, %

Product	Supermarkets %	Other retail %	Weighted average %
Wholemeal flour	–	341	341
Plain flour	78	41	56
Muesli	–	481	481
Rolled oats	184	–	184
Wholemeal wheat bread	54	88	74
Wheat biscuit cereal	24	22	23
Baby food in glass jars	28	41	36
Extra virgin olive oil	72	127	105
Spaghetti	56	83	72
Pumpkins	13	214	133
Potatoes	68	118	98
Sweet potatoes	28	50	41
Tomatoes	129	221	184
Brown onions	26	98	70
Oranges	118	15	56
Beans	–	–	–
Lettuce	–	34	34
Zucchini	124	73	93
Carrots	218	101	148
Apples	–	32	32
Fresh milk (full fat)	26	113	78
Fruit yoghurt	–	44	44
Natural yoghurt	33	45	40
Soft cheese	–	2	2
Hard cheese	–	57	57
Rump steak	–	54	54
Minced beef	–	75	75
Lamb chops	–	8	8
Pork cutlets	–	32	32
Minced pork	–	–	–
Whole chickens	–	7	7
Chicken eggs	–	42	42
Average	75	92	90

Table 4.16 Weighted average price premiums for Perth, by product category, %

Meat	19
Fruit and vegetables	88
Dairy	44
Average	90

Sales arguments and promotions

As indicated earlier, the sales arguments used at the point of sale are the major avenue available to explain and promote organic food in the absence of any industry, retailer or government-sponsored and initiated organic food promotional campaign. In understanding how organic food is marketed, it is important to identify the types and prevalence of arguments or slogans used to market organic products at the point of sale. Sales arguments at the point of sale refer to those statements or slogans provided on product labels, on shelving or on leaflets provided adjacent to the product. Researchers were asked to indicate the arguments mentioned at the point of sale for organic products.

The sales arguments identified in the store checks were quite standard across Australia so the results from each state are reported in aggregated form. Only very patchy data was available from Brisbane, Sydney and Hobart. Overall, 42% of all products for which price data was available had a sales argument on their label or at the point of sale. This is quite a significant result on its own, as it assumes that consumers already know and accept the added value claimed inherent in organic products. This is an assumption that seems hard to sustain in the face of an overall absence of consumer campaigns.

While no food category breakdown has been provided, the overwhelming trend was for no argument to be attached to fruit and vegetables, principally because they were mostly not packaged. Packaged goods, especially cereals and dairy products, typically had some sales message on their labelling. In the absence of dedicated organic sections in supermarket fruit and vegetable aisles, it seems crucial that some additional signage or labelling be evident to attract consumers. The types of arguments documented are listed in Table 17.

Table 4.17 Prevalence of sales arguments for organic products at point of sale

Sales argument	%
Avoids chemicals/pesticides/antibiotics	72
Environmentally friendly farm practices/system	59
Healthy/nutritious	10
Avoids additives/preservatives	8
Certified organic	7
Free of genetically modified organisms	7
Safe	6
Wholesome	5
Flavour/taste	4
Tested for chemical residues	2

The percentage is of all products for which price data was available and where a sales argument was noted on the label or at the point of sale.

As the results illustrate, the two overwhelmingly dominant arguments are that organic products avoid the use of chemicals, pesticides and antibiotics, and that organic farming is a system that is environmentally friendly or good for the environment.

This result can in part be explained by the dominance in the sample of products certified by the National Association for Sustainable Agriculture Australia and Biological Farmers of Australia/Australian Certified Organic (see section on certifying organisations' labels). This

means that their sales arguments dominate the results. Products with the labels from these two certifying organisations have quite consistent sales arguments on the packaging, such as:

Grown and processed without the use of synthetic chemicals, artificial fertilisers, pesticides or herbicides. Organic farming uses environmentally friendly farming practices.

Symbol is guarantee of natural grown pure wholesome food – farmer only uses practices that are regenerative and in harmony with nature. Artificial chemicals, pesticides, weedicides, fungicides and growth promotants are not used. Product is tested for chemical residues.

These clearly encompass the two dominant sales arguments associated with organic foods in Australian retail outlets.

Only 8% mentioned that products avoided the use of additives or preservatives. This is surprising given that organic foods are only permitted to have a limited number of additives and preservatives. The absence or reduced amount of additives may be an important differentiating factor for organic food in some product categories. In 7% of cases the statement is simply made that the product is:

Certified organic to national standard.

Certified organic product tested and approved.

Interestingly, it is mostly the imported European or American products that include references to arguments about safety, health and genetically modified organisms. Perhaps most surprising is the very low prominence of arguments about genetically modified organisms. Given the domestic debate over gene technology, one would have expected this to be an important argument for attracting consumers.

In comparison with the European Union findings reviewed earlier in this chapter, health and food safety feature much more predominantly in a European context (Michelsen *et al.* 1999, p.57; Hamm *et al.* 2002, p.112). However, in common with Australia, European studies show the importance of arguments about the environmentally friendly role of organic farming.

Overall, there is very little in the way of non-label point-of-sale material. An interview with an organic line manager from one supermarket chain revealed that there was no specific organic training for staff. The interviewee indicated that there was some point-of-sale material but mostly it occurred on the packaging. In terms of organic product placement in stores, packaged goods were distributed throughout the store in relevant sections. However, there was a concentration in the health food aisle. It was considered that a dedicated organic section would not attract general consumers. According to the interviewee, fresh fruit and vegetables were presented in a dedicated organic section; the store checks carried out in this research revealed few examples of a dedicated organic fruit and vegetable section. Some of the smaller organic stores did have more overt point-of-sale material. One Adelaide store for example had a sign saying, 'Certified organic and biodynamic fruit and veg – No If's! But's! Or Maybe's!' Stalls at farmers' markets tended to simply have a sign saying 'organic'.

Certifying organisation labelling

In Australia, there is no requirement for organic food to be labelled as organic or to communicate its organic quality using prescribed labels or formats. There is no recognised

national logo, although AQIS-accredited certifying organisations are able to use the AQIS national regulatory mark which says ‘Australian Government Certified’ (see Chapter 8 Regulation of the organic industry). In this context, labelling by organic certifying organisations is crucial in differentiating organic products from non-organic equivalents or conventional products. However, as indicated in the previous sections, the absence of any systematic promotion of organic products in Australia means that consumers are likely to have a very poor understanding of what the term *organic* means or the significance of certifying organisation labels (although there has been no dedicated consumer study). As such, the direct impact of labelling on consumer purchasing behaviour is hard to determine.

During the store checks researchers noted down the name of the certifying organisation of each product that they selected for the survey. They also collected details of the names of certifying organisations of additional (rival) products and stipulated the number of alternative products available with different certifying organisations. Where there was no symbol, this was also noted.

National

Table 4.18 reports the prevalence of certifying organisation logos across all product lines by state. As would be expected, the prevalence of certification labels roughly reflects the share of producers and processors certified by each organisation. No products were identified as certified by Safe Food Production Queensland.

Table 4.18 Summary of prevalence of certifying organisation logos, by state, %

Certifying organisation	SA %	WA %	Tas %	Vic %	Qld %	NSW %
BFA/ACO	42	48	26	42	66	74
NASAA	36	23	26	29	10	14
BDRI/Demeter	12	17	8	26	5	3
TOP	0	0	26	2	0	0
OGA	5	0	4	1	8	0
OFC	0	1	1	1	6	0
International	5	11	9	0	5	9

BDRI – Bio-Dynamic Research Institute

BFA/ACO – Biological Farmers of Australia/Australian Certified Organic

NASAA – National Association for Sustainable Agriculture Australia

OFC – Organic Food Chain

OGA – Organic Growers of Australia (formerly Organic Herb Growers Association)

TOP – Tasmanian Organic-Dynamic Producers

South Australia – Adelaide

The national pattern of use for certifying organisation labels is evident in South Australia (see Figure 4.1). However, there is an over-representation of NASAA labels in the South Australian sample, which one can assume reflects the location of the association’s headquarters in Adelaide.

In terms of product-specific patterns, there is consistent use of NASAA and BFA/ACO labels on fruit and vegetables, dairy, meat and other product categories (see Table 4.19). However, BDRI/Demeter is relatively strongly represented in the dairy and meat categories.

Figure 4.1 Prevalence of certifying organisation logos in South Australia

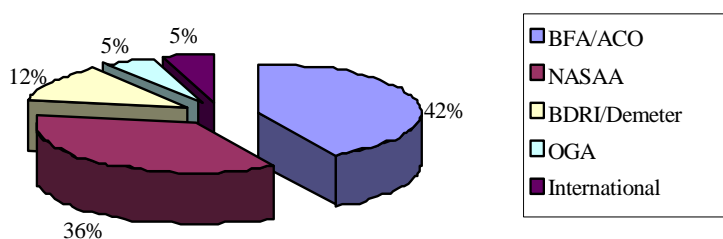


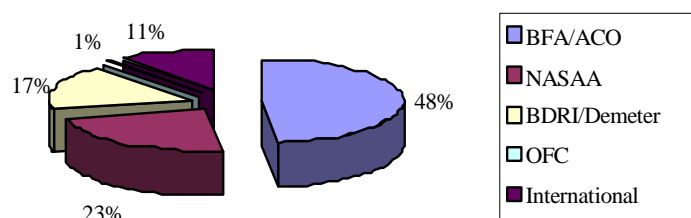
Table 4.19 Use of certifying organisation logos by product group, %

Certifying organisation	Fruit and vegetables %	Dairy %	Meat %	Other %
BFA/ACO	48	39	31	42
NASAA	41	39	31	30
BDRI/Demeter	6	23	21	6
OGA	6	0	17	5
International	0	0	0	16
Total	100	100	100	100

Western Australia – Perth

The national pattern of use for certifying organisation labels is also evident in Western Australia (see Figure 4.2). The only difference is the relatively large incidence of international labels.

Figure 4.2 Prevalence of certifying organisation logos in Western Australia



In Western Australia, international labels are only found on packaged foods in the other product category (see Table 4.20). BDRI/Demeter is a strong presence in the dairy product category.

Table 4.20 Use of certifying organisation logos by product group, %

Certifying organisation	Fruit and vegetables %	Dairy %	Meat %	Other %
BFA/ACO	61	54	59	32
NASAA	35	0	21	26
BDRI/Demeter	4	46	17	13
OFC	0	0	3	0
International	0	0	0	28
Total	100	100	100	100

Tasmania – Hobart

In contrast to the national pattern, the title of most prevalent certifying organisation logo is shared between BFA/ACO, NASAA and TOP (see Figure 4.3). This most likely reflects the fact that TOP is based in Tasmania.

It is interesting to note that TOP, BFA/ACO and NASAA are all most prevalent as a label on fresh fruit and vegetables, but TOP dominates dairy products in the state. In this respect it takes the position held by BDRI/Demeter in other states. As in other states, international labels are more or less exclusively limited to packaged products.

Figure 4.3 Prevalence of certifying organisation logos in Tasmania

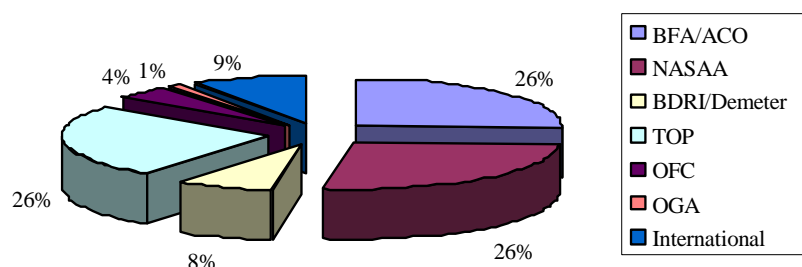


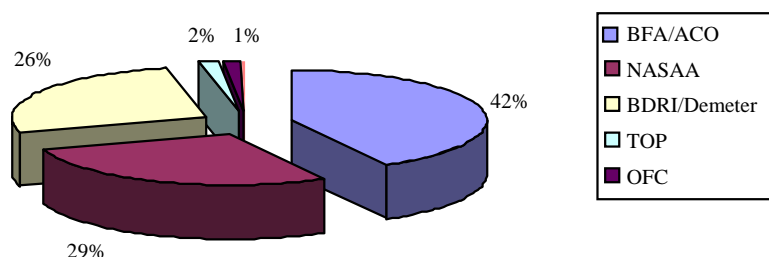
Table 4.21 Use of certifying organisation logos by product group, %

Certifying organisation	Fruit and vegetables %	Dairy %	Meat %	Other %
BFA/ACO	28	8	0	32
NASAA	27	0	100	32
BDRI/Demeter	9	11	0	5
TOP	25	75	0	6
OFC	9	0	0	0
OGA	1	0	0	2
International	1	6	0	22
Total	100	100	100	100

Victoria – Melbourne

BFA/ACO and NASAA dominate in Victoria. However, BDRI/Demeter is a larger presence than in other states (see Figure 4). This most likely reflects the fact that BDRI/Demeter is based in Victoria. Also of interest is that Victoria has a presence from all of the AQIS-accredited certifying organisations. There are no products reported from international certifying organisations.

Figure 4.4 Prevalence of certifying organisation logos in Victoria



It is interesting to note that BFA/ACO and NASAA are most prevalent as labels on fresh fruit and vegetables but BFA/ACO and BDRI/Demeter dominate dairy products in the state.

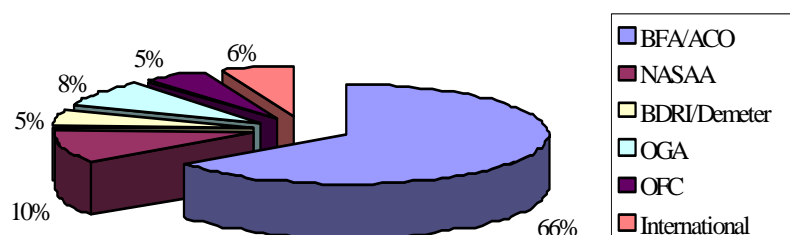
Table 4.22 Use of certifying organisation logos by product group, %

Certifying organisation	Fruit and vegetables %	Dairy %	Meat %	Other %
BFA/ACO	46	38	12	47
NASAA	31	19	50	24
BDRI/Demeter	23	38	27	24
TOP	0	6	0	3
OFC	1	0	12	0
OGA	0	0	0	1
Total	100	100	100	100

Queensland – Brisbane

BFA/ACO appears, on the basis of data in Figure 5, to be a thoroughly dominant presence in Queensland retail outlets. This most likely reflects the fact that BFA/ACO is based in Queensland.

Figure 4.5 Prevalence of certifying organisation logos in Queensland



The dominant presence of BFA/ACO in Queensland extends across all product groups. Most interesting is that it dominates dairy which, in other states, tends to be covered by BDRI/Demeter. International certifying organisations had, as in other states, a strong presence in packaged goods. OFC, which is also based in Queensland, had a relatively small presence, with its largest showing in meat products.

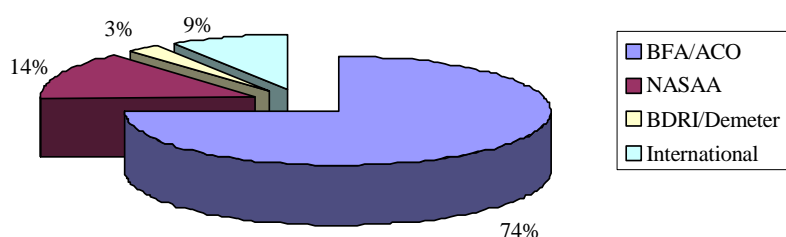
Table 4.23 Use of certifying organisation logos by product group, %

Certifying organisation	Fruit and vegetables %	Dairy %	Meat %	Other %
BFA/ACO	68	58	74	61
NASAA	11	21	0	10
BDRI/Demeter	0	15	11	2
OGA	14	0	0	11
OFC	5	6	14	0
International	2	0	0	16
Total	100	100	100	100

New South Wales – Sydney

As with the data from Queensland, BFA/ACO dominates in Sydney organic retail outlets. As Figure 6 shows it was the certifying organisation of 74% of all organic products for which price data was collected in the Sydney sample.

Figure 4.6 Prevalence of certifying organisation logos in New South Wales



BFA/ACO has a dominant presence across almost all products groups. The only exception is in dairy, where NASAA is the dominant label.

Table 4.24 Use of certifying organisation logos by product group, %

Certifying organisation	Fruit and vegetables %	Dairy %	Meat %	Other %
BFA/ACO	90	40	100	67
NASAA	7	50	0	12
BDRI/Demeter	0	10	0	3
International	3	0	0	18
Total	100	100	100	100

Conclusion

The initial finding of the research reported in this chapter, confirming anecdotal reports, is that the organic range in Australian retail outlets is patchy and inconsistent. Some exceptions are in very basic domestically produced products like cheese, sugar and breakfast cereals. Many stores touting themselves as stockists of organic food products are not able to provide even the majority of the products included in the basket of goods on which this study was based. This cannot be explained by seasonality alone and points to larger coordination problems in organic product supply chains.

The key message from this chapter in relation to organic price premiums is that they often well exceed what Australian research and supermarket retailers show general consumers are willing to pay. In turn, this suggests that expanding domestic consumption of organic foods, which means attracting the general consumer, will require a drop in retail premiums. Of course, expanding domestic consumption also relies on communicating the values and qualities of organic food. In this respect organic labelling and sales arguments are important. The analysis of organic labelling establishes the use of the full range of labels of both domestic and international certifying organisations. Given the apparent low level of understanding among Australian consumers of organic products and certification processes, the proliferation of labels would appear to be counter-productive. As in Europe, the design, use and promotion to consumers of a single Australian organic label would seem essential to

expanding market penetration. In terms of promotion of organic products at the point of sale, the overwhelming evidence is that there is no message at all. There is little if any point-of-sale material such as banners, pamphlets or shelf talkers. The only arguments put to consumers are those on the labels of products. Of these, most emphasise the chemical-free nature of the product and the environmentally friendly attributes of organic farming systems. However, leaving promotion and education of consumers to the fine print on labels is unlikely to shift consumer sentiment and raise domestic sales. Again, effort by the industry to better explain organic goods is essential. This will mean the industry working more closely with retailers.

The data reported here provides a base to which future efforts may be compared. Continuation of this type of work in the future is not only useful for retailers but provides the organic industry with some pointers as to how their products are being presented to the public and the premiums consumers are being asked to pay. The latter point continues to be a key area of debate for the industry and its resolution will play a key part in the degree to which domestic consumption of organic foods moves beyond the dedicated user to the general consumer.

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Appendix 1 Retail price premium research approach

The timing of store checks: seasonality and price premiums

Prices for fresh produce fluctuate due to seasonality. To account for this the price checks were all completed during a one-week period. In other words, while out of season prices may have been collected for some products, they were compared with out of season conventional equivalents. Therefore, the exact prices themselves are less informative (given that they fluctuate and were collected only at one point in time). However, theoretically, the percentage price premiums should be constant year-round.

There is, of course, no way of compensating for short-term fluctuations in supply and demand which may create abnormal market conditions and affect prices. Unfortunately, these conditions are more likely to prevail in the organic industry where volumes are low and where the management and coordination of supply is poor.

Selecting the store sample

The aim of the store checks was to obtain a representative nationwide picture. The stores were selected in consultation with industry representatives with a good knowledge of the retailing conditions in each capital. They were chosen on the basis that they constituted a reasonable cross-section of outlets where organic food is sold. In this case, three basic types of sales channels were considered: supermarkets (both chains and independents), organic food shops and specialty food stores, and farmers' markets. As a general rule, in each state, four major supermarkets, one to two independent supermarkets, two to three specialty stores and two farmers' markets were selected as the 10 sample stores. This was based on industry estimates of the likely breakdown of sales volumes by sales channels. Ideally, the sample would be drawn up to reflect the percentage volume of organic products sold through the three different sales channels. For example, if 50% of organic sales were through specialised organic food shops, 30% through supermarkets and 20% through farmers' markets, then each city sample would consist of five organic specialty stores (matched with five conventional specialty food stores), three supermarkets (sell both organic and conventional), and two farmers' markets (selling organic and conventional). However, we do not have any reliable information on the volume of organic sales by sales channels in Australia, nor on variations between states.

Efforts were made to select stores that were average or typical outlets from a consumer point of view. *Typical* means that they were neither boutique stores in inner city locations nor stores that were specifically discount stores. Above all, it was crucial that conventional and organic prices were compared between like stores. This meant that organic stores were compared with dedicated small-scale food stores and not supermarkets.

Given the resources available to the project, 10 paired store comparisons were conducted in each of the six national capitals listed above. This yielded 60 organic and 60 conventional prices for comparable products. However, in order to generate sufficient data to construct meaningful price premium data, in some cases there was call to do more store samples. This was particularly the case given the sparse product ranges in many stores, particularly farmers' markets and supermarkets. In some cases two or three supermarkets had to be surveyed in order to generate one complete set of data. Online retail information for organic products was sought in the case of Western Australia, New South Wales and Victoria as a means of filling data gaps.

Collecting price data

Researchers attended each store personally and noted down conventional and organic prices for a predetermined list of goods on a data entry sheet. For the purposes of this study, products were considered organic only where they were *certified* organic. Where labels were not attached, as is often the case on bulk goods such as fruit and vegetables, researchers asked sales staff for details of certification.

For the price data to be meaningful it was important to collect prices for *comparable* products (organic and conventional). This was not always easy, as some stores had different ranges, sizes or qualities of the products included in the sample. These points of variation were managed in the following ways.

For the purposes of this study it was acceptable for the type and variety of product to vary across the 10 stores in any capital city. However, it was important that the varieties of fruit and vegetables or cuts of meat, for example, remained as close as possible within each of the paired organic-conventional comparisons. For example, if the price recorded for Store 1 was from a different apple variety than say Store 3, then that was acceptable. However, it was crucial that the organic and conventional apple sampled from Store 1 was the same.

Another point of variation was size and quality. It was often the case that the varieties of fruit and vegetables or cuts of meat, for example, varied between retail sales outlets, or alternatively, that the package sizes or quantities varied, particularly in pre-packaged goods. For example, organic rolled oats were in 500 gram packet sizes while non-organic rolled oats were only available in 750 gram sizes. To get around this problem, researchers noted size, weight and price on the data entry form. Calculations were undertaken after the collection to create a price for the same weights.

To ensure product quality was standard when selecting products (either organic or conventional), researchers were directed to choose products that were of average quality. For instance, they were requested to avoid premium products, products on sale or specials. Where possible, they were also asked to avoid own-brand products (such as Woolworths' home brand). Where this could not be avoided (for example if only home-brand items were available, such as Coles' Organic brand), then researchers were asked to make sure they compared like products (that is, organic premium with conventional premium, organic home brand with conventional home brand).

Analysis of data

The recorded data on organic certification labels and sales arguments were compiled into table form for each product by state and/or Australia as a whole. Retail price premiums have been reported as product by state, as product by sales channel by state, and for Australia as a whole. The data for price premiums involves a degree of manipulation to generate averages for states, sales channels and national figures. Details of these processes are outlined below.

The average price premium for each product across all stores for each state is based on a weighted average. The weighting process should have proceeded as follows. If, for example, supermarkets were responsible for 70% of the organic sales of potatoes, the supermarket average price premium would be weighted by a factor of 0.7. The example below provides an illustration of how the weighted average was calculated for each product:

Average price premium in the 4 chain supermarkets	$25\% \times 0.4 = 10\%$
Average price premium in the 2 independent supermarkets	$50\% \times 0.2 = 10\%$
Average price premium in the 2 organic stores	$70\% \times 0.2 = 14\%$
Average price premium in the 2 farmers' markets	$30\% \times 0.2 = 6\%$
Average price premium in all sales channels	sum = 40%

This approach suits the European context where there are plenty of outlets in each specific category, especially in major cities. However, in the Australian case the organic range available was so thin that results could only be reported across two sales channels: supermarkets and other sales channels (including farmers' markets, dedicated organic food stores or gourmet food stores). A sufficient number of farmers' markets that stocked organic food could not be identified to make a separate figure relevant or meaningful. Therefore, price data from supermarkets was averaged and weighted at 0.4 and price data from other sales channels was averaged and weighted at 0.6 to derive a weighted average figure for each item for each state. This weighting was based on industry assessments in the absence of any prior work on sales by retail channel. The data and subsequent weighting has been presented in a transparent manner so that the state averages can easily be re-weighted and composite figures calculated.

The national weighted average was calculated by weighting overall state price premiums according to the population of each state. Population is used as a weighting factor as it reflects the number of potential consumers and hence the likely volume of food sold in each state. This approach was employed in the absence of any data on consumption patterns by state. Again, data has been presented in a transparent manner so that re-weighting can occur where data on consumption patterns by state becomes available. State weighted averages (for both price and premiums) were as follows: New South Wales 0.35; Victoria 0.25; Queensland 0.19; South Australia 0.08; Western Australia 0.10; Tasmania 0.02 (Australian Bureau of Statistics 2003).

Appendix 2 Average prices for organic products in Australia, \$

Product	State	SA	WA	Qld	Tas	Vic	NSW	National average	Weighted national average
Wholemeal flour *		3.84	1.09	4.02	2.87	3.41	2.91	3.02	3.11
Plain flour *		3.20	1.78	3.60	2.90	2.81	3.11	2.90	2.97
Muesli (with dried fruit or nuts)*		11.37	5.96	7.69	8.48	9.30	9.80	8.76	8.89
Rolled oats*		4.50	1.61	4.58	4.64	4.99	5.98	4.38	4.82
Plain wholemeal wheat flour bread*		5.31	3.70	4.38	5.18		5.89	4.89	3.79
Wheat biscuit cereal*		6.14	4.22	5.91	5.94	5.98	5.04	5.54	5.42
Baby food in glass jars (carrots, potatoes or similar)*		15.92	8.69	16.62	17.08	11.91	21.12	15.22	16.01
Extra virgin olive oil [#]		22.46	19.33	51.99	24.63	40.82	29.71	31.49	34.70
Spaghetti (plain wheat)*		7.18	3.32	10.46	10.51	16.41	8.99	9.48	10.35
Pumpkins*		3.86	2.55	3.06	3.56	3.25	3.36	3.27	3.20
Potatoes (unwashed)*		2.92	1.75	2.53	2.31	2.86	3.93	2.72	3.03
Sweet potatoes*		4.45	3.99	2.61	4.58	4.59	3.55	3.96	3.73
Tomatoes*		6.53	3.48	5.74		7.92	7.37	6.21	6.52
Brown onions*		3.61	2.67	3.65	4.29	3.76	3.67	3.61	3.56
Oranges*		2.60	2.15	2.74	3.55	2.75	2.99	2.80	2.75
Beans*		14.72		13.00	3.90	9.78	12.50	10.78	10.55
Lettuce*		5.17	1.49	2.61	2.45	3.19	2.55	2.91	2.80
Zucchini*		7.33	1.55	7.14	5.88	5.48	7.44	5.80	6.19
Carrots*		4.06	1.69	3.60	4.04	3.57	4.34	3.55	3.67
Apples*		5.53	2.99	6.07	2.78	5.78	7.11	5.04	5.88
Fresh milk (full fat) [#]		2.05	1.50	2.21	2.37	2.04	2.19	2.06	2.06
Fruit yoghurt (strawberry or similar)*		5.29	6.60	8.44	8.13	8.57	6.29	7.22	7.19
Natural yoghurt*		4.72	5.42	6.73	6.99	6.67	6.40	6.15	6.25
Soft cheese*		34.57	27.45	35.46	13.17	30.50	20.90	27.01	27.45
Hard cheese*		31.79	18.52	28.07	39.70	30.53	29.50	29.69	28.48
Rump steak*		29.11	10.95	24.03		27.47	29.94	24.30	25.34
Minced beef (standard quality)*		13.36	8.22	13.15		16.49	16.10	13.47	14.15
Lamb chops (mid-loin chop)*		15.03	15.22	17.56		19.64	17.34	16.96	17.04
Pork cutlets*		9.75	11.47	15.20		24.50	18.00	15.78	17.24
Minced pork*						14.99	10.90	12.95	7.56
Whole chickens (for roasting)*		13.96	8.95	10.58		14.45	12.90	12.17	12.15
Chicken eggs [^]		0.44	0.58	0.52	0.47	0.62	0.55	0.53	0.55

* \$ per kilogram, # \$ per litre, ^ \$ per unit

CHAPTER 5

Who consumes organic foods in Australia?

Stewart Lockie
Central Queensland University

and Peter Donaghy
Central Queensland University

Despite apparently rapid growth in the production and consumption of certified organic foods over the last decade or so, there is relatively little reliable information in the public domain about who buys and eats organic foods, or why they do so. While many in the industry have a good understanding of their own customers, there remains a need to generate a similar understanding of organic food consumers at an industry level if sensible decisions are to be made regarding how best to support and target industry development. This chapter begins the task of providing this information by exploring first the demographic profile of organic consumers, along with the motivations behind food choice and other behavioural characteristics such as participation in recycling programs. It looks then at how various consumer attributes, motivations and behaviours combine to influence increasing rates of organic food consumption, and the willingness of consumers to pay price premiums for organic foods and the product attributes they bring to the market.

The data used comes from two sources. The first was a national survey of 1200 Australian consumers conducted using computer-assisted telephone interviewing techniques in June 2001 (Lockie *et al.* 2002). This survey was conducted as part of an Australian Research Council-funded project, *Greening foods*. Chief investigators in that project were Associate Professor Stewart Lockie and Professor Geoffrey Lawrence. Dr Kristen Lyons, Dr Janet Grice and Associate Professor Kerry Mummery also made valuable contributions that are reflected in the data presented here. The quantitative data generated by this survey was supplemented by a series of 13 focus group interviews conducted in regional and metropolitan Queensland and Victoria that explored the ways in which consumers conceptualised organic food.

The second data source was a smaller survey administered to 240 Rockhampton and 300 Brisbane residents in December 2001 using a drop off and collect distribution method that resulted in the return of 203 usable surveys for Rockhampton and 203 for Brisbane (Donaghy *et al.* 2003). This survey was conducted as part of a Master of Business dissertation undertaken by Peter Donaghy through Central Queensland University. This study was supervised by Associate Professor John Rolfe and Dr Jeff Bennett who, again, made a number of contributions that are reflected here.

While the first survey sought to collect data on a wide range of demographic, attitudinal and behavioural variables the second was focused far more specifically on the ways in which consumers value specific food attributes and their willingness to pay for these attributes.

Buying organic food

Over 40% of respondents to the national survey claimed to have consumed at least some certified organic foods over the preceding 12 months. Not surprisingly, the majority of these had consumed only a small amount of organic food with about 8% of respondents claiming that half or more of their total diet is organic. (Response categories for the question ‘Over the last year, what proportion of the food you ate was certified organic?’ were deliberately broad and descriptive – that is, all, most, about half, a little and almost none – due to inherent difficulties in collecting accurate data on food consumption using population surveys (Turrini 2000)). This suggests that something in the vicinity of half the total amount of certified organic food sold is sold to committed organic consumers while the rest is sold to occasional organic consumers.

Table 5.1 examines the question of where organic food is purchased. It shows that among those who consumed at least some organic food the primary place of purchase is supermarkets. However, it also shows high levels of support for smaller retailers and for alternative marketing approaches such as selling direct by farmers through either farm-gate sales or farmers’ markets.

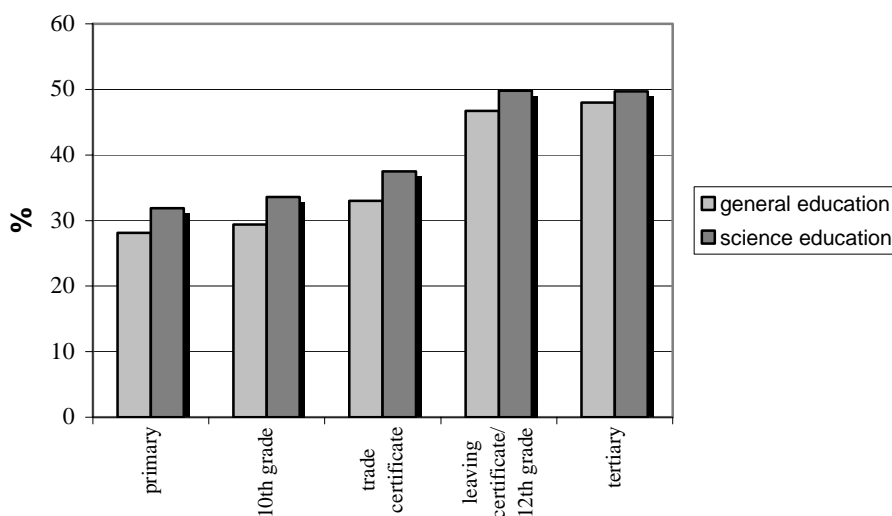
Table 5.1 Primary place of purchase for certified organic foods

Place of purchase	% of respondents nominating half or more of organic food purchases from this source
Supermarkets	42.0
Greengrocers	28.9
Farmers (farm gate, farmers’ markets)	15.5
Butchers	5.6
Home delivery	2.1
Restaurants, cafes	1.8

Demographic profile of organic consumers

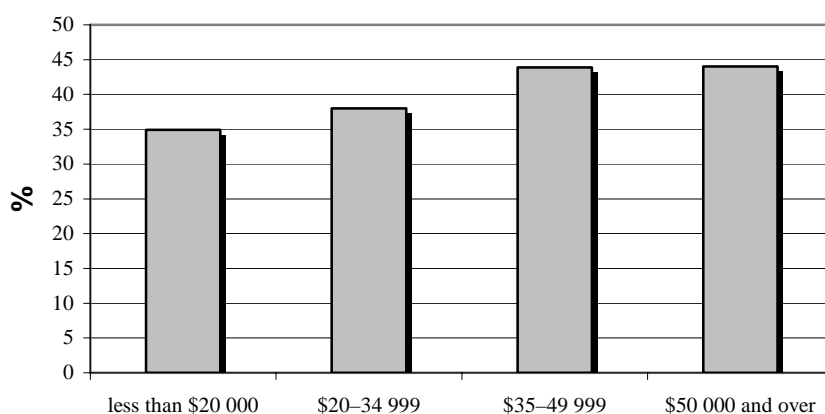
The most important demographic differences between organic and non-organic consumers are gender and education. In the national survey, some 44.1% of women claimed to have consumed certified organic foods compared to only 33.8% of men. In relation to education, Figure 5.1 shows that the number of people consuming at least some organic foods is substantially higher among those with higher levels of education, an effect that is also true for increasing levels of science education.

Figure 5.1 Organic consumption by education



It is widely assumed that income also has a major impact on levels of organic food consumption. Figure 5.2 shows that while this is the case, the effect is not as dramatic as many might think. A third of those earning less than \$20 000 per annum still consume at least some certified organic foods and those on over \$50 000 are no more likely to consume organic foods than those on \$35 000 to \$49 999.

Figure 5.2 Organic consumption by income



Organic consumption shows little variation across age groups until respondents reach their 60s. At this point, the number of organic consumers drops to 29.9%, suggesting that changes

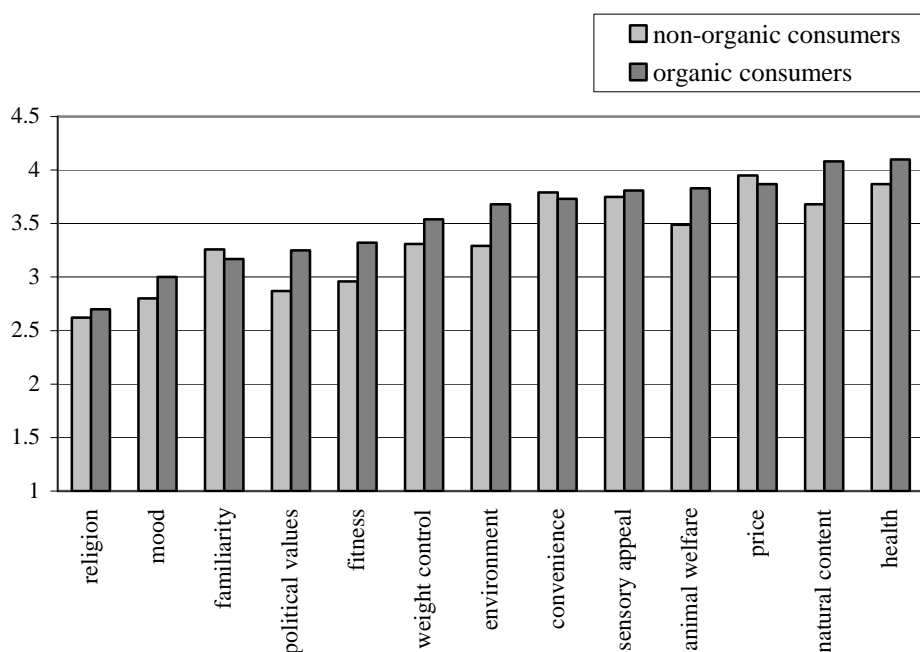
of income or priority associated with retirement have some impact on willingness to purchase certified organic foods.

Attitudinal profile of organic consumers

The attitudinal profile of food consumers was explored in the national survey in three ways. First, the level of motivation expressed by consumers to a range of factors believed to influence consumption decisions were compared for consumers of organic and non-organic products. Items on motivations affecting food consumption were drawn from the food choice questionnaire of Steptoe and Pollard (1995), with the addition of the expanded range of items on ethical food choice motives in Lindeman and Väänänen (2000). This instrument was designed to provide a multi-dimensional measure of motives related to food choice including health, weight control, ethical concerns, familiarity, sensory appeal, mood, convenience, natural content and price. Second, attitudes were examined in relation to specific food-related issues including food-borne risk, biotechnology and the health and quality attributes of organic foods. Third, these results were compared with the results of the focus group discussions to explore how consumers conceptualised and acted on their motivations and attitudes.

Figure 5.3 shows the mean scores for each motivating factor for organic and non-organic consumers. For several of these factors there are no statistically significant differences. These include convenience, sensory appeal, price, familiarity and religion.

Figure 5.3 Motivating factors behind food choice



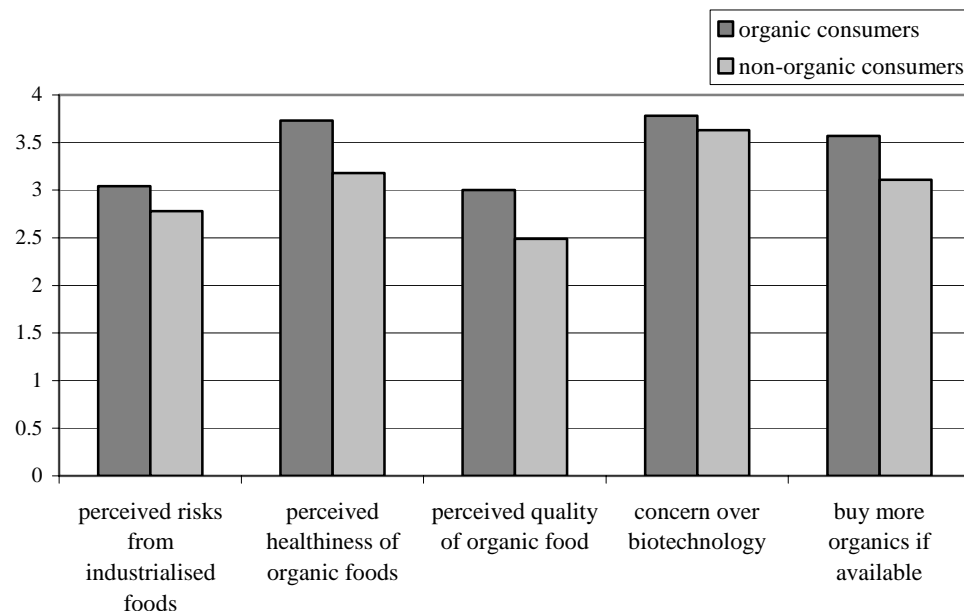
1 = not at all important, 5 = extremely important

Among those factors for which there are statistically significant differences it is notable that a similar trend was still evident between organic and non-organic consumers in terms of the relative importance of each of these factors. Natural content and animal welfare rate highest for both groups, followed by environmental protection and weight control. At the same time, therefore, that organic product consumers appear more motivated by each individual factor and more likely to rank these concerns over those such as price and convenience, they appear merely to be expressing what are, in fact, widely held values. This is not to say that there are not significant numbers of consumers who do not share these views (for example, who are not at all motivated to protect animal welfare) but that such consumers can be found in similar proportions in both groups.

Figure 5.4 shows the relative scores for organic and non-organic consumers on a number of scales designed to measure attitudes to food-related issues that may also influence people to purchase, or avoid, certified organic foods. Specific dimensions of these scales included:

- perceived risks from industrialised foods – chemical residues, genetically modified organisms, irradiation, artificial ingredients, antibiotics
- perceived healthiness of organic foods – lower residues, safer, healthier to eat
- perceived quality of organic food – taste, shelf-life, appearance
- concern over biotechnology – going too far, against laws of nature, risky, labelling, incompatible with organics
- buy more organic food if it was available – if I could find it, if it was available as convenience, packaged and pre-prepared food.

Figure 5.4 Attitudes to food-related issues



1 = strongly disagree, 5 = strongly agree, for all scales except 'perceived risks from industrialised foods' for which 1 = very low risk, 4 = very high risk.

As with the motivating factors behind food choice, levels of concern over food-related issues follow similar patterns for organic and non-organic consumers but with organic consumers expressing stronger levels of concern for each individual issue. Respondents were also asked

their views on the fairness of paying premiums to farmers for farming in an environmentally sustainable manner, with no significant differences emerging between organic and non-organic consumers.

Despite generally favourable motivations and attitudes towards organic foods and the attributes people believe them to represent, there is no reason to assume that this will lead in a simple and straightforward manner to large increases in organic food consumption. This is not because consumers profess values they fail to act on but because of the huge array of competing imperatives, needs and desires consumers must balance when making decisions. Not surprisingly, the focus groups suggested that the main factors limiting the consumption of organic foods were cost, convenience and availability. They also suggested, however, that many consumers are confused by the many contradictory claims about organic foods they are exposed to via the media and other sources. The main issues are the actual environmental, health and food safety attributes of organic foods; the ability of organic production systems to provide enough food to meet growing demand; the trustworthiness of organic labelling systems; and general quality attributes such as taste, appearance and shelf-life.

Factors influencing increasing rates of organic food consumption

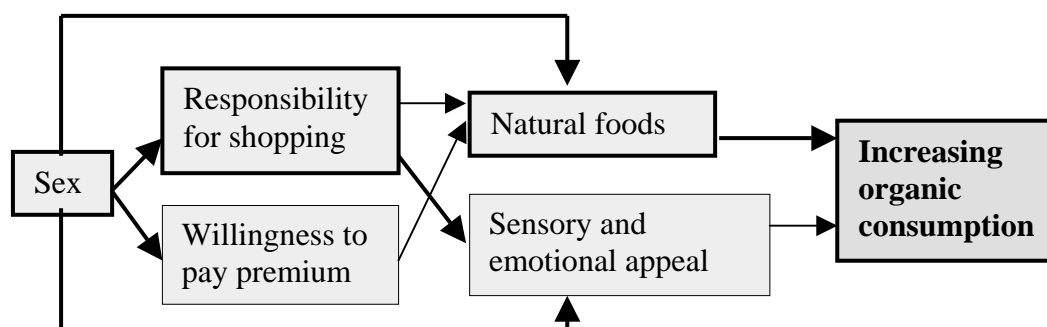
So far we have established that women, those who are more educated and those on moderate to high incomes are somewhat more likely to consume at least some organic food. We have also established that consumption of organic food has become mainstream in the sense that it is an activity in which people from diverse socio-demographic backgrounds participate and which reflects widely held motivations and attitudes regarding food consumption. The question this raises is what factors might influence people to increase their rates of organic food consumption above the low levels most organic consumers reported?

If we examine the same food choice motivations and food-related attitudes discussed above it is evident that, with the exception of increasing interest in weight control and fitness, increasingly strong motivations and attitudes are significantly correlated with increasing levels of organic food consumption. However, it is also the case that the strength of most of these relationships is weak; that is, a major increase in concern for, for example, the healthiness of foods results only in a very small increase in the likelihood of consuming more organic food. Those variables more strongly correlated with increasing consumption of organic foods are natural content ($\rho = .296$), environmental protection (.220), animal welfare (.163) and mood (.166).

To explore this further, a path analysis was undertaken to examine more specifically how the variables included in the survey interacted with each other to influence increasing rates of organic food consumption. Prior to conducting this analysis, however, those questionnaire items making up the motivational and attitudinal scales discussed above were re-examined, together with items on a range of relevant behaviours such as composting and use of other environmentally friendly products, using factor analysis to see if they coalesced into a smaller set of variables. This resulted in the development of a smaller number of scales including healthy food values, green consumption, sensory and emotional appeal, willingness to pay a premium for environmental values, acceptance of biotechnology, convenience, political and ecological values, and natural foods. These factors, together with the demographic variables of age, sex, income and education level, as well as responsibility for shopping, were used to conduct a path analysis predicting increasing rates of organic food consumption among those consumers who had consumed at least some organic food.

While only two scales (healthy food values and acceptance of biotechnology) did not have a statistically significant impact on the dependent variable *increasing organic food consumption* and were removed from the resultant analysis, most other relationships were also quite minor. Figure 5.5 shows a simplified path model in which only medium and major effects are included.

Figure 5.5 Simplified path model for increasing consumption of organic foods among those who had consumed at least some organic food over preceding 12 months



Major effect (>0.20 in magnitude) \longrightarrow

Medium effect (0.10–0.19 in magnitude) \longrightarrow

All relationships are positive. Further, a positive relationship in relation to sex indicates higher scores among women than men.

The major direct determinant of increasing rates of organic food consumption is consumers' commitment to the consumption of foods they perceive to be *natural*. Conceived in terms of freedom from artificial additives and unnecessary processing, the concept of naturalness is seen in opposition to a range of contemporary food technologies including genetic engineering, irradiation, pesticides, preservatives, animal growth hormones and antibiotics. Naturalness is perceived by respondents as being more or less synonymous with organic techniques. Commitment to the consumption of natural foods is itself determined primarily by gender, with women far more likely than men to be motivated by this concern. The next most important determinant of commitment to consuming natural foods is responsibility for the provision of foods, a responsibility dominated by women. This is followed by willingness to pay a premium for environmental values.

The next most important factor directly influencing rates of organic consumption is the level of motivation towards sensory and emotional appeal. Sensory and emotional appeal relate to the consumption of food that makes the respondent feel good, physically and emotionally, as well as to the enjoyment of the act of eating itself. Familiarity is an important element of this, implying that organic food is not only believed to taste and smell better, but that it acts as a kind of comfort food, evoking feelings of safety and tradition. Responsibility for shopping and gender are, as with natural foods, the major determinants of the level of motivation towards sensory and emotional appeal.

Willingness to pay for certified organic foods

The previous section shows that willingness to pay a premium for environmental values has an important, albeit indirect, impact on the amount that those eating at least some organic food are likely to consume. This section presents a selection of the results of three choice modelling experiments based on the Rockhampton and Brisbane surveys outlined above.

In a choice modelling study, respondents are asked to choose only one option from several alternatives. For the three choice modelling studies reported here, each choice was between conventional (that is, status quo), genetically modified and organic alternatives. The groupings of conventional and proposed alternatives (that is, genetically modified and organic products) are known as choice sets. The proposed alternatives in each choice set are differentiated by the condition of the environment described to respondents and the financial burden they impose. The descriptions of the environment and the financial impost involved are known as the attributes of the alternatives (Bennett 1999). Variation across the proposed alternatives in the choice sets is achieved by assigning different levels to the attributes.

Choice modelling enables the estimation of respondents' willingness to pay for changes in specified attributes (such as an environmental amenity) that correspond with resource allocation outcomes of interest to communities and governments (Bennett and Adamowicz 2001). By observing the choices people make when forced to decide between alternative levels of attributes, including financial costs, the value of a change from the status quo to a specific alternative can be derived (Bennett 1999). Each experiment was designed to estimate the values placed by consumers on similar agricultural commodities produced from organic, genetically modified and conventional production systems for beef, milk and tomatoes. Respondents were asked to indicate which alternative option they would choose (that is, organic, genetically modified or conventionally farmed), given the quantities of each attribute offered for each alternative. The attributes used to describe each system included environmental performance, food health, quality and animal welfare standards. Attempts were made to ensure that the choice sets offered to consumers were balanced with two positive, two negative attributes and an environmental attribute that could be either positive or negative for both organic and genetically modified goods. Using this data estimates can then be made of consumers' willingness to pay for either an organic, a genetically modified or a conventionally farmed product.

Keeping in mind that the results cannot necessarily be generalised to the Australian population in the same manner as the national survey, the choice modelling experiments suggested the following results specific to organic beef, milk and tomatoes.

Animal welfare. Both Rockhampton and Brisbane consumers are concerned to avoid reductions in animal welfare. They do not see the need to pay a premium for any additional animal welfare benefits that organically produced beef and milk might provide over conventionally produced alternatives.

Food health. Improving health through consumption of organic beef is seen as important by Rockhampton consumers but is not significant for Brisbane consumers. Respondents do not see food health as a differentiating factor in relation to tomatoes. Nor do Rockhampton consumers see it as a factor with regards to milk. Brisbane consumers, however, consider that organic milk may have health benefits they are prepared to pay a price premium for.

Environmental performance. Consumers in Rockhampton and Brisbane are willing to pay a price premium to avoid what they perceive as further environmental degradation associated with beef production and to lift the environmental performance of beef production above existing levels. Brisbane consumers are willing to pay only to lift environmental performance. Tomato production evokes less environmental concern with the avoidance of further environmental damage valued significantly by Rockhampton residents only. In contrast, both Rockhampton and Brisbane consumers value perceived improvements in environmental performance in organic milk production.

Quality. Rockhampton consumers are prepared to pay a premium for the improved tenderness they associated with organic beef. The appearance and freshness of tomatoes does not have any significant impact on choice.

By observing and modelling how people change their preferred option in response to the changes in the levels of the attributes, it is possible to determine people's willingness to give up some amount of an attribute in order to achieve more of another. By including a monetary amount (that is, the price of the product) in the attributes, it is also possible to estimate the amount that people are willing to pay to achieve more or less of a specific attribute. These estimates are referred to as implicit prices.

Table 5.2 shows implicit price premiums that have been derived from respondents' willingness to pay for perceived attributes of organic foods. Willingness to pay is measured in relation to a one unit improvement in each particular attribute. Given the inherent difficulties involved in framing some of these attributes (due, for example, to the number of factors with different measurement units comprising them), changes in product attributes were based on the common unit of percentage change.

Table 5.2 Implicit prices for organic food attributes^a

Product	Attribute	Value of a one unit improvement (\$A) ^b		Confidence intervals (\$A) ^c	
		Rockhampton	Brisbane	Rockhampton	Brisbane
Beef	Improve environmental performance above existing standards	0.07	0.09	-0.01-0.18	-0.01-0.21
	Avoid further environmental damage	0.12	ns	0.00-0.22	ns
	Improved tenderness	0.16	ns	0.06-0.31	ns
Tomatoes	Avoid further environmental damage	0.08	ns	0.04-0.21	ns
Milk	Improve environmental performance in general	0.09	0.07	0.06-0.22	0.05-0.10
	Food health	ns	0.05	ns	0.01-0.09

^a This table only includes those attributes for which statistically significant results were derived either in Rockhampton or Brisbane; that is, results in which there is at least 95% confidence that relationships between variables are not the outcome of sampling errors.

^b Values refer to price in Australian dollars per kilogram for beef and tomatoes and price in Australian dollars per 2-litre carton of milk.

^c Confidence intervals provide an estimate of the range in which lies, with 95% confidence, the true value for the population that has been sampled.

ns = not stated

While, as stated above, it is important not to overgeneralise from these results, it is noteworthy that the attribute of organically produced foods which consumers are most consistently willing to pay more for is the perceived contribution of organic methods to environmental performance. More individualistic motivations such as food quality and health are not necessarily disregarded but, in many cases, consumers do not see any additional benefits of organic products over conventional ones. Consumers also appear largely satisfied with existing standards in relation to animal welfare.

Another noteworthy result was that the majority of consumers nominating a preference for organic foods appear unwilling to pay more than a very modest price premium. Further, the implicit prices appear fairly constant across products, despite the substantial differences in base prices across these categories. This implies that consumers are more sensitive to price increases in absolute terms than they are in percentage terms and may be willing, therefore, to pay a proportionally more substantial premium for less expensive goods than for more expensive ones.

Conclusion

Organic consumers are drawn from a broad cross-section of Australian society. They do not conform to stereotypes of wealthy, fashionable and health-focused ideologues. It is certainly the case that some demographic and attitudinal differences are evident between those who consume at least some organic food and those who don't consume any. Organic consumers are more likely to be women. They are more likely to be educated, and they are more likely to have at least middle-level incomes. However, plenty of people who do not fit this pattern still consume organic food, albeit in smaller numbers. Further, the key motivations, attitudes and beliefs associated with consumption of organic food are widely shared, with differences between organic and non-organic consumers reflecting slightly different strengths of belief rather than diametrically opposed viewpoints. In fact, there is more variation within each of the two groups than there is between them. However, at the same time that organic foods may be seen as increasingly mainstream, they remain niche products in Australia in the sense that they are sold either in significant quantities to a comparatively small number of people, or in small quantities to a substantially larger number of people.

The choice modelling experiment offers some explanation of why this might be the case, while the path analysis offers more insight into who comprises the group consuming more organic food. The choice modelling exercise confirms the importance consumers place on many of the attributes attributed to organic foods, but indicates that many believe these are adequately catered for through conventional production systems. The attribute that stands out for many consumers in relation to organic systems is the perceived opportunity they offer for improved environmental outcomes. However, the premiums most people are willing to pay for these perceived environmental benefits are substantially less than the premiums often attached, in reality, to organic products. Under such circumstances, the majority of people who are favourably disposed to the environmental claims of organic production systems are still likely to limit their purchasing of organic products. Focus group discussions conducted in tandem with the national survey suggest that considerable confusion among consumers over the veracity of claims and counter-claims regarding the attributes of organic food and the reliability of labelling systems also contributes to reduced consumption of organic foods.

Analysis of the relationships between demographic, attitudinal and behavioural variables shows that those people most likely to make the decision to eat substantial quantities of

organic foods are those who are also most motivated to consume foods they believe are natural; that is, foods produced without industrialised technologies such as genetic engineering, irradiation, pesticides, preservatives, animal growth hormones and antibiotics. Respondents' motivation to consume food that makes them feel good, physically and emotionally, is also important. And, in both cases, women and those responsible for household food provision are those most likely to express these motivations. This does not imply that protection of the environment is not important to those consuming more organic foods but that this particular value is more widely shared.

Based, as they are, on different populations, it is reasonable to expect some difference in results obtained from the national and Queensland surveys. Nevertheless, the general willingness of Brisbane and Rockhampton consumers to pay more for environmental protection and the heightened motivation among committed organic consumers to source what they believe to be natural foods are far from inconsistent. Both results suggest that one of the keys to increasing the consumption of organic foods is to focus information dissemination on the environmental benefits to be obtained from the use of natural production methods and to explore ways of reducing the price differential between organic and conventional foods without undermining the livelihoods of existing organic producers.

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CHAPTER 6

Australian organic food exports and imports

Darren Halpin

Centre for Social Science Research, Central Queensland University, Australia

and Amarjit Sahota

Organic Monitor, United Kingdom

Australian agriculture is, by developed world standards, a largely export-focused industry. Around 80% of Australia's annual agricultural production heads overseas in unprocessed and processed forms. Significantly, over one-third of all exports by value are now exported to Japan, the United States and China (Department of Foreign Affairs and Trade 2003). The United Kingdom, once Australia's primary export market, is now the fourth largest export destination (only 4.2% in 2003). Consequently, Australia is largely self-sufficient in food terms and tends to import processed goods where and when quality is deemed by consumers as superior to that of locally produced goods. But how does this state of affairs translate into the organic industry?

The purpose of this chapter is to present data on the volume and, where possible, the value of certified organic imports and exports in and out of Australia. In mapping exports and imports one is hampered by an absence of data. The only data available on exports of organic products is that collected from AQIS. It administers the *Export Control (Organic Produce Certification) Orders 1997*, which oblige it to ensure that anything exported from Australia complies with the requirements of the importing nation. This is achieved by AQIS accrediting Australian organic certification organisations, which in turn provide Organic Produce Certificates to producers confirming that their produce meets necessary export requirements (for further information see Chapter 8 Regulation of the organic industry). There is no formal collection of organic import figures, as AQIS does not distinguish between organic and conventional food categories in its data collection and collation activities. No data on export values is recorded and exporters are not required to provide estimates of value.

Despite data difficulties and problems in estimating volumes and values, a number of reports have provided tentative estimates of the value of organic exports. According to AQIS (1997, p.71), in 1997 organic exports were valued at around \$30 million. More recent industry estimates suggest the figure to be somewhere between \$30 and \$50 million (Twyford-Jones & Doolan 1998, p.ix; McCoy & Parlevliet 2000, p.58).

Several reports also provide a synopsis of destinations for organic produce. Organic produce is said to have been exported to various Asian, European and American markets. Products

exported include a range of whole grains, fruit and beef (McCoy & Parlevliet 2000, p.6). Exporting destinations are reported to include the European Union nations plus more recently Switzerland, Japan, the United States, Singapore and Hong Kong (AQIS 1997, p.71; see also, McCoy & Parlevliet 2000, p.59). In terms of future export markets for Australia, McCoy and Parlevliet (2000) identify European Union member nations (particularly Germany, France, the United Kingdom and the Netherlands), the United States and Japan as the best export targets. In terms of export market development, one of the key drivers is said to be the added, generalised concerns of particularly European consumers about the so-called process quality of food (for example, the use of genetically modified organisms and the application of chemicals in food production) and concerns for general health and wellbeing (McCoy & Parlevliet 2000; von Alvensleben 2001). For those interested in identifying new export destinations, see Chapter 7 Export markets for organic food. Additional information can be found on the Austrade website or a range of other sources (see for instance, Twyford-Jones & Doolan 1998; Invest Australia & KPMG 1999, pp.21–27; McCoy & Parlevliet 2000; Victoria Department of Primary Industries 2002; Queensland Department of Primary Industries 2003).

Again, industry estimates also exist for import data. One report cites a 1996 figure claiming the total value of organic imports was \$5.2 million (Macarthur Agribusiness Quarantine and Inspection Resources 1999, p.3). This figure was expected to rise in line with any increases in domestic consumer demand, given the small scale of the Australian domestic industry. According to McCoy and Parlevliet (2000, p.62), imports are mostly of processed grocery lines, such as coffee, pasta sauces, olive oil, soy drinks, preserves and the like, primarily from the United Kingdom and the United States. Other commodities are imported to fill temporary shortfalls in domestic production. Examples include kiwifruit and other fresh produce from New Zealand.

Exports

As mentioned earlier, data on Australian exports of certified organic food products is collated by AQIS from Organic Produce Certificates issued by AQIS-accredited certifying organisations. This data is available from 1999 and is reported here until 2003. This data is the exclusive basis of the figures presented in this section. In analysing this data the intention was to categorise all entries by the hierarchical Australian and New Zealand Standard Product Classification (ANZSPC) at the most detailed level. However, a weakness of the export data is that certificates are completed at various levels of detail. For example, some entries are for carrots, lettuce and parsnips, while many others state merely mixed vegetables. In addition, some exports are entered as the weight of the processed form of the product such as flour, which leaves the researcher with the decision about the nature of the flour (for example, wheat, maize, rice). Consequently, data can only be reported at the highest resolution it is reported on certificates. For all but meat and animal products, this means the three-digit code level. Despite this weakness, the data is still relatively detailed and provides valuable insights into what is being exported, in what volumes and to where. The figures reported are as *standardised net mass* (kilograms or litres).

By way of explanation, Table 6.1 provides the product categories into which the export certificates were sorted and identifies the ANZSPC codes they include. The right-hand column provides an indicative list of the types of products these groups include.

Table 6.1 Product groups included in ANZSPC codes

Product group	ANZSPC code	Indicative products
Animal products	029	milk, honey, eggs
Beverage and spices	016	coffee and tea
Cereals (grains, pulses and oilseeds)	011 and 014	wheat, oats
Drinks and juices	214	fruit juices, soy milk
Fruit and nuts	013	apples, oranges, peaches, pears
Meat products	211	beef (portions and burgers)
Other	nec	plant material, seeds
Processed products	nec	muesli, flour, noodles, pasta and oils
Sugar	018	sugar
Vegetables	012	carrots, celery, onions, potatoes
Wine	242	red and white wines

nec = not elsewhere classified

Table 6.2 reports total masses of exports across all product codes by year. The right-hand column reports the percentage increase or decrease on the previous year's results. The overwhelming message from Table 6.2 is that exports of organic food products have grown year upon year from 1999 until 2001. The AQIS data suggests that the past two years have witnessed an overall decline in export masses. The most logical explanation for this drop is the effects of drought.

Table 6.2 Total certified organic exports by year

Certificate issue year	Sum of net mass standardised (kg or l)	% change on previous year
1999	774 058	–
2000	15 769 679	1937.27
2001	37 469 727	137.61
2002	16 195 319	–56.78
2003	4 089 026	–74.75

Source: analysis of AQIS export data.

In trying to make sense of this recent decline, Table 6.3 provides a more detailed breakdown of exports by product code by year. It illustrates that a large part of the drop in 2003 was due to a large decrease in exports of fruit, vegetables, beef products, cereals and processed products. While the drought has clearly had a significant impact on exports, the decline could also be associated with the increase in the Australian dollar and the possibility that domestic demand has increased, diverting product away from export markets. However, this apparent decline cannot be conclusively explained without further investigation.

Table 6.3 Certified organic exports by product group and year, standardised net mass, kg or l

	1999	2000	2001	2002	2003
Animal products	20 400	204 371	189 874	156 989	182 820
Beverage and spices	0	248 772	714 857	396 540	223 677
Cereals (grains, pulses and oilseeds)	252 248	10 572 251	26 306 775	9 290 306	1 297 723
Drinks and juices	3 919	39 866	424 629	723 594	380 290
Fruit and nuts	10 483	558 402	696 436	451 815	44 011
Meat products	27	102 496	396 270	682 250	243 683
Other	1 050	0	4 679	525	15 621
Processed products	462 806	3 072 839	6 094 564	3 843 265	1 196 660
Sugar	1 050	288	4 345	86 702	141 001
Vegetables	2 805	921 353	2 449 012	227 470	119 460
Wine	19 270	49 041	188 286	335 863	244 111
Total	774 058	15 769 679	37 469 727	16 195 319	4 089 057

Source: analysis of AQIS export data.

Table 6.4 shows the percentage of total export volume by destination in 2003. It illustrates that exports to Japan, the United Kingdom, France and New Zealand made up over 70% of the total mass of organic products exported from Australia in 2003. Other major destinations included the United States and European countries like Switzerland, Germany and Italy.

Table 6.5 provides a more detailed breakdown of export mass by export destination and by product group for 2003. It illustrates that the pattern of export destination differs with product group. For example, meat products are destined for the United States and Japan. By contrast, France, Belgium, Italy and Switzerland are the main destinations for organic cereal exports. Interestingly, Malaysia is a major export destination for fresh fruit, while the Netherlands takes a very large proportion of organic vegetable exports. The latter is perhaps explained by the role of the Netherlands as a distribution point for agricultural trade within the European Union. Japan, New Zealand and the United States are the dominant destinations for the export of processed organic goods.

As reported earlier, the value of exports has been estimated in several past reports. It would be difficult to make such an estimate given the variety of destinations, each with unique price conditions. The value of these exports could be accurately estimated by looking at the reported value of sales from one major player in each product group, gauging the fraction of total exports they are responsible for and extrapolating to the balance of the exports from that product group. This is easier in the case of beef sales where it is generally agreed that OBE Beef dominates the trade, according to one estimate accounting for 90% of export volume of organic beef. Such an approach yields an estimated value for 2003 beef exports of \$5.5 million. However, this approach is difficult in areas like vegetables, fruit and cereal exports where single major players are hard to identify and where sales figures are not readily available. In the absence of such data, and given the commitment of this report to differentiate between what is reasonably robust data, what is estimate and what is guess, it is better to leave the reader with this mass data, from which informed individuals can arrive at their own estimates.

Table 6.4 Percentage of total export volume by destination, 2003

Destination	Total mass (kg or l)	% of total export mass
Japan	1 373 701	33.59
United Kingdom	716 015	17.51
France	429 735	10.51
New Zealand	417 295	10.21
United States	250 223	6.12
Switzerland	187 512	4.59
Belgium	151 100	3.70
Germany	104 879	2.56
Italy	100 200	2.45
Netherlands	82 399	2.02
Malaysia	78 273	1.91
Singapore	56 081	1.37
Canada	36 944	0.90
China	31 600	0.77
Taiwan	22 362	0.55
Denmark	19 830	0.48
Hong Kong	14 091	0.34
Austria	3 840	0.09
French Polynesia	3 250	0.08
New Caledonia	2 481	0.06
South Africa	1 856	0.05
Dubai	1 440	0.04
Saudi Arabia	1 056	0.03
Korea	960	0.02
Israel	820	0.02
Noumea	526	0.01
Norway	360	0.01
Ireland	165	<0.01
Indonesia	63	<0.01
Total	4 089 057	100.00

Source: analysis of AQIS export data.

Table 6.5 Export mass of organic produce by category and by destination (standardised net mass, kg or l), 2003

Product category	Animal products	Beverage and spices	Cereals	Drinks and juices	Fruit and nuts	Meat products	Other	Processed products	Sugar	Vegetables	Wine	Total
Austria	3 840											3 840
Belgium			151 100									151 100
Canada	14 096					17 027		4 716			1 105	36 944
China									31 600			31 600
Denmark		19 350						480				19 830
Dubai				1 440								1 440
France			428 150					1 585				429 735
French Polynesia								3 250				3 250
Germany	12 261	22 456	52 160	3 840	8 000	58	158	2 934		3 012		104 879
Hong Kong	3 178		5 415	3 954	79			1 393			72	14 091
Indonesia											63	63
Ireland								165				165
Israel								820				820
Italy			100 000					200				100 200
Japan	26 208	106 915	26 095	332 687	258	114 165	14 179	730 290	20 750		2 154	1 373 701
Korea	960											960
Malaysia	1 944		16 429	3 551	27 285		30	5 640		23 394		78 273
Netherlands			135		903			1 110		79 347	904	82 399
New Caledonia			1 209					1 272				2 481
New Zealand	21 168	45 588	131 148	34 656	2 686		1 250	178 448	51	1 148	1 152	417 295
Norway					360							360
Noumea			454					72				526
Saudi Arabia		1 056										1 056
Singapore	3 125	3 831	28 123	162	4 440		4	7 995		8 041	360	56 081
South Africa								1 856				1 856
Switzerland	222		186 180					1 110				187 512
Taiwan			17 125			497		4 740				22 362
United Kingdom	95 818		154 000			57 851		76 927	88 600	4 518	238 301	716 015
United States		24 481				54 085		171 657				250 223
Total	182 820	223 677	1 297 723	380 290	44 011	243 683	15 621	1 196 660	141 001	119 460	244 111	4 089 057

Source: analysis of AQIS export data.

Organic food imports into Australia

This section was authored predominantly by Mr Amarjit Sahota, Director of Organic Monitor in the United Kingdom.

The value of imported organic products are estimates based on importers' revenues. The estimates come from discussions with key Australian importers conducted in 2003 and 2004. There are no official statistics for imports of organic products. It is difficult to accurately measure the levels of imports because most importers deal in imported and Australian organic products and they cannot always distinguish sales between the two. Furthermore, most companies import non-organic and organic products and cannot always distinguish between these.

The estimated value of organic products imported in 2003 was \$13 million (Organic Monitor 2004). Organic foods come into Australia from a wide range of countries including New Zealand, the United States and the United Kingdom. As well as organic food and drinks, non-edible items like cotton and personal care products are increasingly imported.

Processed foods

It is estimated that over half of all organic food and drink imported into Australia is processed products. The low level of organic food processing in Australia is believed to be responsible for companies looking offshore for processed organic products. Other important factors are the product range and quality of imported products. There is a relatively limited range of Australian organic processed products whereas importers can source an extensive range of high quality products. The organic processed products that are imported include biscuits, breakfast cereals, muesli, chocolate, pasta, soups and beverages. There are few if any imports of refrigerated or chilled organic products like yoghurt, ice-cream and ready meals. Imports are marketed under manufacturer brand names or under brand names of importers or distributors.

Most global organic food processing occurs in North America and the European Union and these two geographic regions supply the majority of organic processed food imports into Australia. The United States is an important source of pasta and pasta sauces, soups, vinegar, rice drinks and tomato products like ketchup. Canada is an important source of organic breakfast cereals and maple syrup. Organic chocolates, biscuits and breakfast cereals are imported from the United Kingdom. Austria, France, Holland Germany, Italy and Greece are sources of organic cereals, soups, sauerkraut, tomato products and pasta. The United States and Italy are important sources of organic vinegar.

Organic tea is imported mainly from the United Kingdom and Japan. Specialty teas are mainly imported from the United Kingdom as finished products. East Timor, Papua New Guinea and Colombia are important sources of organic coffee. Organic coffee is imported as finished product as well as coffee beans.

Other imports

Apart from processed foods, organic herbs and spices are imported into Australia. These come from a number of sources that include the European Union, the United States, South Africa, India and Sri Lanka.

Organic cereals, grains and dry products are also imported. Europe and the United States are important sources of organic dry products like lentils and beans. Organic grains are mostly imported in bulk from a number of countries. Organic soybeans are mostly imported from China and South America. Turkey is an important source of organic nuts and dried fruits like apricots and raisins. India is a source of organic rice. Most organic dry products are imported in bulk, packaged in Australia and marketed under importer brand names.

Organic fruit and vegetables account for most fresh produce imports. New Zealand is the major source and the main products are kiwifruit, carrots and onions. Australian companies import from New Zealand to meet the shortfall in domestic production levels. There is hardly any import of organic meat or dairy products into Australia. Low volumes of organic butter are imported from New Zealand and marketed under importer brand names.

Other organic products imported into Australia include honey and olive oil. Greece, Spain and Italy are major sources of organic olive oil and olive products. Organic sunflower oil is also brought in from European countries. Organic honey is mainly imported from New Zealand.

Apart from organic food and drinks, an increasing number of organic non-food items are imported into Australia. Internationally, there is growing demand for organic personal care products such as skin care products, hair care products, deodorants and soaps. The United States is the main source.

Supply chain

About 85% of organic food imports are brought into Australia by companies that specialise in distributing organic products or more commonly specialise in health foods and natural products. The most important importers in Australia include Kadac, World Whole Foods, Eco Farms, Kas Organic and Organic By Nature. The remaining 15% of organic food comes into Australia through importers of conventional foods or through the sales offices of large food companies that deal in conventional and organic foods. A significant amount of organic food comes in from New Zealand via this route.

Importers of organic food usually play a dual role, importing products and distributing to the retail trade. Some of the smaller firms appoint wholesalers for retailers outside their region. Some companies also re-export products to other countries in the Asia-Pacific region like New Zealand, Singapore and Malaysia.

Most of the imported organic processed foods are marketed under manufacturer brand names. Other products like organic dry products, cereals and grains are imported in bulk, packaged in Australia and distributed to the retail trade. Importers distribute organic products to organic food retailers, health food shops and supermarkets. Some firms, particularly the larger importers, market most volume to supermarkets and others deal mostly with small retailers such as health food shops.

Future outlook

Many European and American manufacturers of processed organic foods produce primarily for their large home markets, where they achieve economies of scale, and then export. Considering the small size of the domestic market, Australian companies will find it hard to compete with them unless they include the export market into their production plans.

The low volume of Australian organic herb and spice production is offered as the major reason for imports of these products. This is also the reason for imports of organic coffee and tea. It was reported that organic juices and rice drinks are imported because of the perceived higher quality of foreign products.

Imports of these organic products will continue to increase in line with growth of the Australian organic food industry unless steps are taken to encourage organic food production in Australia. The lack of processing of organic foods needs to be addressed if Australian consumers are to have access to the wide range of quality organic products at low prices that American and European consumers have.

Conclusion

This chapter has provided an overview of exports and imports into Australia. Analysis of AQIS data reveals over 4 million standardised net mass units (kilograms or litres) of organic produce was exported in 2003. In terms of export levels over the past two years, the trend revealed a decline. While the cause is unclear, one could assume that the drought and its effects are large contributing factors. Increased domestic demand could also be a factor in reducing export volumes. For these reasons a long-term trend for export volumes is hard to identify. Given the rapid growth of the industry, even five years of data is insufficient to establish a trend.

While data is difficult to quantify, exports of organic produce are likely to significantly exceed imports. Imports are predominantly made up of processed goods. Other imports are generally to compensate for shortages in inputs for processing (for example, juice concentrate) and in fresh fruit and vegetables. But to what extent are these imports meeting existing deficits? Or are they competing with domestic products? There is no evidence to conclusively answer these questions.

Data from one of the largest certifying organisations provides a list of certified processed products currently produced in Australia. These products include jams, sauces, olive oil, processed and packaged meat (meat portions and burgers), grains (flour), apple juice, pasta sauce, dried fruit, bread, muesli, breakfast cereal, noodles and pasta, wine, dairy products (cheese, yoghurt, milk powder, cream), salad mixes, coffee, chocolate-coated nuts, honey, and tea tree and herb oils. As this chapter highlights, many of these products are also imported.

What are the reasons for this import trade? Is it because of the price non-competitiveness of Australian processors or because foreign imports have a quality that consumers prefer? On the basis of the import data alone, one may conclude that a key challenge for the Australian organic industry is to build sufficient capacity for home-grown processing activities to replace imported products. However, the export data shows that processed goods are a large proportion of total exports. This puzzle is important to unlock; further investigation is clearly warranted.

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CHAPTER 7

Organic food in overseas markets

Department of Foreign Affairs and Trade
and Austrade

The first section of this chapter, on organic markets in Asia, is an extract from a publication of the Australian Government Department of Foreign Affairs and Trade (2004), *Subsistence to supermarket II: Agrifood Globalisation and Asia, volume III: Asian Agrifood Demand Trends and Outlook to 2010*. The second section of selected market summaries was contributed by Austrade.

The growth of organic markets in Asia

There has been a growth of consumer interest in organic foods in higher income economies in Asia, especially in Japan, albeit so far generally on a lesser scale than in Europe, North America, Australia or New Zealand. There are only approximate estimates available for the possible scale of consumer purchases of organic food and beverages in Asia which could comprise approximately 10% of the world's total consumption of organic food and beverage products, estimated to have been worth around US\$26 billion in 2001 (*Business Line India* 2003b). However an important aspect of the prospective appeal of organic food to consumers in all Asian economies is that amidst the consumer concerns about food safety, *organic* is increasingly perceived as equivalent to safe and clean food. In addition, in the agriculture and food-processing sectors of both developed and developing Asia, there is strong interest in winning market share in the growing world demand for organic food and beverages.

Japan

Japan is most likely the largest market for organic food sales, estimated by the United States Department of Agriculture (USDA) to be worth around US\$2.5–3 billion in 1999, though this was based on a broad definition of organic including the category *reduced chemical* (Sogo Market Research 1999), before the Japanese Ministry of Agriculture, Fisheries and Forestry revised its original 1992 voluntary organic guidelines. The non-government organic agriculture organisation, the International Federation of Organic Agriculture Movements, estimated that the Japanese market for organic products based on the broad definition was worth around US\$2–2.5 billion by 2000, but possibly only about US\$250 million using a new stricter definition of organic (International Federation of Organic Agriculture Movements 2003). Estimates from traders put annual sales of organic products at under 1% of Japan's total food sales by 2001, which would be less than US\$3 billion, which seems close to the USDA estimate but is probably also based on the broad definition of organic (*Taipei Times* 2002).

Fresh fruit and vegetables reportedly account for as much as three-quarters of organic food sales in Japan, with rice and some processed foods (such as organic soybean-based foods) making up the balance. Japanese consumers generally perceive organic as healthier, safer and more nutritious than conventional foods but might not purchase them more than occasionally because of limited distribution and lack of availability in their local food retail outlets, small product variety, lack of well known brands, high prices and general uncertainty about product integrity and veracity of organic labelling against the backdrop of numerous false labelling incidents in recent times (USDA 2000c). There is also considerable overlap in consumers' understanding of the terms *organic*, *chemical-free*, *non-genetically modified* and so on; for example, Japanese consumers appear to have accepted the category of non-genetically modified soybeans as a reasonable equivalent of organic soybeans in soybean-based food products (USDA 2000c). In response to consumer confusion about what *organic* meant, and consumer distrust about organic labelling, the Ministry of Agriculture, Fisheries and Forestry introduced the new Japan Agricultural Standards for Organic Agricultural Products, and the Japan Agricultural Standards for Processed Foods from Organic Agricultural Products, which came into effect in April 2000 (USDA 2000b). The new standards tightened the definition of *organic* and made certification by a ministry-registered third party compulsory for use of the term *organic* in labelling of agricultural products or food and beverages. The new guidelines allowed other voluntary labelling terms such as *no-pesticide*, *no chemical fertiliser* and so on for products which did not qualify as organic.

A number of Japanese food companies have seen an opportunity in the concept of organic food to appeal to consumers concerned about food safety, so that *organic* can be used as code for safe food and as a marketing tool. For example, one operator of a chain of *izakaya* (Japanese style pubs), Watami Food Service Co, has embarked on organic vegetable farming to supply its pubs and restaurants, as one way of distinguishing itself from competitors (Nikkei.net 2003b). Another food service company, Nippon Restaurant Enterprise Co (a subsidiary of East Japan Railway Co), has a joint venture in California to make *o-bento* (lunch boxes) using all organic ingredients for supply to Japan (Siamfuture.com 2001). The Lawson convenience store chain operates several joint venture organic vegetable farms and two vegetable processing plants in China for supply of fresh or frozen product to its operations in Japan, including for use in its lunch boxes and prepared meals (Department of Foreign Affairs and Trade 2002). A number of supermarkets, restaurants and cafés have opened which brand themselves as organic. Organic restaurants, popularly called *natu-res* (natural restaurants), are appearing all over Japan, such as the Kyushu-based Dorobushi which developed from a single organic restaurant in Kumamoto in 1991 to become a chain, and recently started opening outlets in Tokyo (Nikkei.net 2003a).

South Korea

The Korean market for organic food and beverages is assessed to be fairly small, estimated by the USDA to be worth around US\$90–100 million per annum in retail sales in 2002, with the largest share of this (about US\$70 million) being organic baby food, which accounted for around 20% of total baby food sales (USDA 2002). However like other higher income economies in Asia, various media revelations about unhygienic, substandard and unsafe food production have appalled Korean consumers and increased concerns about food safety and healthiness (Korea Times 2003), so that there is growing interest by many Korean consumers in organic food as identifiably safe and healthy food. In response to the market demand, more local farmers have changed to produce organic rice, fruit and vegetables under the Environmental Agricultural Products guidelines established in the 1990s. The Korean Ministry of Agriculture and Forestry has set out conditions for labelling of fresh produce as

organic, and the Korean Food and Drug Administration has set out conditions for labelling of processed food and beverages as organic (USDA 2002), with the latter updated in 2003 to nearly parallel United States organic labelling requirements (USDA 2003a). Linked to the widespread antipathy towards genetically modified foods and food materials, there is also growing demand for non-genetically modified or organic feed materials for the livestock sector (USDA 2003b).

Taiwan

One estimate has put the value of organic food and beverage sales in Taiwan at around US\$10–15 million per annum in 2000 (USDA 2000e). There is reportedly growing interest in organic food among urban Taiwanese consumers, mainly in Taipei and other cities in northern Taiwan, which has led to increasing numbers of supermarkets and convenience stores offering some organic food and beverage products, with the most popular items being organic rice, vegetables, fruit and pulses, but including other products also such as soy-based foods, vegetable and fruit juices, tea, wine, pasta, soup, sauces and edible oils (USDA 2000e). Prices are reportedly at least twice as high as for normal food and beverage products. In 1996 the Taiwan Council of Agriculture (COA) introduced its National Organic Standards for organic agricultural production of rice, fruit, vegetables and tea, an organic certification process, and a labelling sticker – ‘COA Organic Food’ – for certified products as part of its policies to encourage local farmers to increase their supply to this growing domestic market for organic products, particularly of these four types of products. In its Challenge 2008 Development Program, organic foods were identified by Taiwan’s Council for Economic Planning and Development as one of 15 industries for priority development (*Taiwan Economic News* 2002).

Hong Kong

Hong Kong’s market for organic food and beverages is estimated to be very small but recently growing quite fast, possibly by 20 to 25% per annum according to Hong Kong’s Trade Development Council (Hong Kong Trade Development Council 2003). If one estimated it to be around 0.5% of total food retail sales (it is unlikely that much organic food is used in the food service sector), this would be perhaps US\$45–50 million by 2000. According to the USDA, demand for organic products is no longer limited mainly to resident Westerners and Japanese but better educated Hong Kong consumers are showing some interest, especially among those who have spent some time abroad (USDA 2000a). Consumer demand for organic food and beverages is expected to grow because of consumer concerns following various food safety scares, increasing interest in healthy foods in general and the identification of organic with healthiness, and also widespread preference for foods that are clearly not genetically modified. Hong Kong has no specific standards or regulations for organic food, requiring only that they conform to normal food laws; however importers usually require organic certification obtained in the exporting country. Hong Kong has some limited local production of organic vegetables and fruit such as lettuce, melon, beans and carrots.

China

In China in the early 1990s, recognising the growing domestic consumer interest in safety and healthiness of food and beverages, the Ministry of Agriculture developed its Green Food Standard with two grades, A and AA, with the lower A grade directed at consumers interested in safe food but unwilling to pay high prices and the AA grade close to Western organic

standards and more costly, so affordable mainly by higher income Chinese consumers (USDA 2001a). The China Green Food Development Center was set up as the owner of the Green Food trademark and the certifying agency, with provincial, county and city level sub-offices. But in 2001, the State Environmental Protection Agency introduced its own stricter organic standard which was similar to the organic standards of Western countries, so that there were then two different organic-type standards (USDA 2001a). In late 2003 the Ministry of Agriculture said it was endeavouring to set a unified set of standards for organic, linked to its interest in increasing its exports of organic food (*Business Daily Update* 2003). However there remain some credibility problems in relation to organic labelling of products from China because of inconsistent rigour in inspection and certification, as revealed in numerous instances of substandard organic products (Reuters 2003). The USDA estimated that China's retail sales of organic food and beverages probably reached about US\$6 million by 1997 (USDA Economic Research Service 2001), so it would be reasonable to estimate this as US\$10 million by 2001.

Singapore

The Singapore market for organic food and beverages was put at under US\$4 million in annual retail sales in 2000 by the USDA (2001b). Only a very small portion of the food service sector offers organic menus. Singapore has no particular standards for organic foods but all imported organic foods are required to comply with normal food regulations set for meat, fish and fresh produce by Singapore's Agri-Food and Veterinary Authority and set for processed food and beverages by the Ministry of Environment's Food Control Department. So Singapore consumers purchase organic foods as certified by supplier countries (*The Straits Times* 2003). Most Singapore consumers reportedly do not properly understand what *organic* means but increasingly identify organic with chemical-free, safe and healthy foods, so there is growing interest in organic food and beverages. People with medical conditions are reportedly particularly inclined to choose organic food and beverages in order to improve the quality of their diet and to avoid pesticide and chemical residues, antibiotics, additives and so on (USDA 2001b).

Malaysia

Consumer awareness and understanding of *organic* remains fairly low in Malaysia but one recent estimate put annual retail sales of organic food and beverages at around US\$10 million in 2002, with the observation that the range of organic products had expanded well beyond the initial focus on vegetables, that the number of stores offering organic products was expanding and that the price differential from non-organic products had fallen from four times as high to only twice as high, so that more middle-income consumers were purchasing organic (Lee 2003). In 2001 the Malaysian Departments of Agriculture and Health, in consultation with other experts, developed a Malaysian standard for 'the production, processing, labelling and marketing of plant-based organically produced food', in recognition of growing consumer and farmer interest, though mainly concerned with organic vegetables and fruit, which are the main organic products being produced in Malaysia (Malaysian Department of Agriculture 2002). Inspection and certification systems have been developed to implement the new standard.

Thailand

In Thailand, one recent estimate put annual retail sales of health foods at around US\$65 million (*Bangkok Post* 2003c), so that organic food and beverage sales could possibly

comprise about 10 to 20% of this. Some observers suggest most consumers do not understand what organic is, and think it means something like chemical-free (*Bangkok Post* 2003b), but in Bangkok sales of organic and natural food products are reportedly growing (*Bangkok Post* 2003d). The combination of growing consumer concerns about food safety and extensive toxic chemical residues in locally produced foods, and the increasing production of certified organic foods such as jasmine rice, vegetables, shrimp, coconut milk and coffee in Thailand, coordinated by major Thai agrifood companies for export to Europe and elsewhere, is likely to bring about wider understanding and interest in organic products. An influential organic rice production project was set up in 1998 in the north-east region by the Thai royal family, with the brand 'Thai Hom Mali Rice, Product of Royal Rice Mill', which sells to both domestic and export markets (*Bangkok Post* 2003e). In mid-2003 the Thai Ministry of Agriculture announced a program for soil restoration and the promotion of organic farming (*Bangkok Post* 2003a). The Organic Agriculture Certification Thailand scheme was established in 1995 by a non-government organisation and local consumer groups, which in 2001 received accreditation from the International Federation of Organic Agriculture Movements (*Bangkok Post* 2003c).

Indonesia

In Indonesia consumer awareness of organic food and beverages remains low, with only a small number of high-income consumers willing to pay the necessary price premium (*Down to Earth* 2001). There is no national standard or labelling system for organic food and beverages. There is more interest on the production side, in organic farming as a way for small farmers to reduce expenditure on pesticides and chemical fertilisers, and gain better prices, with a number of projects underway with non-government organisation or corporate backing. One United States biodiversity group project, started in Sumatra in 1996, has grown to include about 3000 farmers producing organic spices for export to Western markets, with certification by various Western organisations. Another Indonesian biodiversity non-government organisation started a project in 1997 to develop organic production of native rice varieties in Java (Scialabba et al. 2002).

The Philippines

There is reportedly increasing interest in organic, chemical and pesticide-free, and natural foods among high-income consumers in the Philippines, with the USDA estimating annual retail sales of organic food and beverages at around US\$6 million in 2000, with approximately half supplied from local production and half imported (USDA 2000d). Local production of organic rice, sugar, soybeans, vegetables and fruit, and livestock products is supplying both local demand and export markets. The Philippines Organic Producers Trade Association, established in 1995, has been a major proponent of organic agriculture and in conjunction with various non-government organisations, drafted the Philippine Standards for Organic Agriculture, based on the International Federation of Organic Agriculture Movements standards (USDA 2000d). In April 2003, the Philippines Government issued Administrative Order No. 13, 2003, Guidelines on the Accreditation of Certifying Bodies for Standards on Organic Agriculture. The Philippines Export Development Plan for 2002–04 identified organic and natural products as one of 10 export product groups deemed to have high growth potential (Government of the Republic of the Philippines 2002).

Vietnam

While the primary focus in Vietnam is on increasing organic agricultural production for export, so far mainly of organic rice (*Viet Nam News* 2003), tea and vegetables, some of this is being marketed domestically through modern food retail outlets such as Metro Cash & Carry (*The Saigon Times Daily* 2003).

India and South Asia

It is difficult to estimate the size of the market for organic food and beverages in India. On the one hand, only a small number of high-income urban consumers are thought likely to pay the price premium for certified organic food and beverages but, at the same time, some of India's expanding production of certified organic products is definitely being sold in the domestic market. For example, in 2002 Rajshree Sugars and Chemicals Co launched its Demerara brand of organic sugar in the southern state of Tamil Nadu (*India Business Insight* 2002). Another dimension of the picture is that many Indian farmers already use low or negative levels of pesticide or chemical fertiliser due to cost and could be considered as practising organic agriculture by necessity, or 'organic by default' as some call it (*Business Line India* 2003a). However over 2000 to 2002 the Ministry of Commerce's Agricultural and Processed Food Products Export Development Authority established the National Standards for Organic Production and an official Indian organic logo to be used by certified products (*Business Line India* 2002). This is part of India's strong interest in expanding exports of certified organic food and beverage products, worth approximately US\$15 million in 2002 (*Business Line India* 2003b), to Europe, North America and elsewhere. In 2003 the Ministry of Agriculture announced the establishment of a National Institute of Organic Farming, one of whose tasks would be to promote organic products for the domestic market (*The New Farm* 2003). India's main organic products currently include spices (pepper, cloves, thyme, chilli powder, dry turmeric, dry ginger, dry tamarind, nutmeg, mace), tea and some processed fruits (pineapple, banana) (*Business Line India* 2003c).

The trend for organics is similar in the rest of South Asia – some organic agricultural production is already occurring, aimed at supplying export markets as well as reducing chemical pesticide and fertiliser use and developing more sustainable agriculture, but domestic consumer awareness is limited, except among higher income, better educated consumers. For example, Sri Lanka exports some organic tea, cashews, coffee and spices. Pakistan produces some organic basmati rice for export. Pakistan, Bangladesh and Sri Lanka all have organic farmers' organisations.

Selected market summaries

For statistics on the volume of Australian food exports to these markets see Table 6.5 in Chapter 6. Also see the section on export market access in Chapter 8 Regulation of the Australian organic industry for information on the recognition of Australian organic standards in overseas countries.

Japan

Market size

Japan is a priority market for many Australian organic food exporters. The market for certified organic product in Japan is steadily growing with demand considered to be greater than supply. See the previous section for further details.

Consumer trends

Organic food sales are being driven by a general demand for healthy foods and products that can be traced back to the source. Tokyo and Osaka are the biggest organic produce markets in Japan. Japanese consumers in these markets have a relatively high awareness of environmental issues, want assurances about food health and safety and are prepared to pay a premium for certified organic products. These factors help to make Australian certified organic products an attractive option.

Retail developments

Growth in Japanese retail has been in the convenience store segment. There are more than 40 000 convenience stores nationwide. The convenience retail chain Anew features organic and natural foods and has over 500 stores nationwide. They also distribute via catalogue and home delivery. The larger retailers see organic food as a way to differentiate their product range from their competitors and some are increasing the amount of shelf space dedicated to organic and natural foods and beverage products (Cummings 2003).

Opportunities

Domestic supply is constrained in Japan due to the limited land area available for farming. This is an advantage for foreign suppliers. The main areas of opportunity for organic products in Japan include soybeans and soy-based products, corn, corn-based products, grains and flours, edible oils, meat and fresh produce. However, with fresh produce, fumigation may be a barrier as the fumigation process can render the product inorganic.

Other considerations

- Japanese consumers demand high quality products.
- Apart from a niche group of consumers, the tolerance for paying a premium for organic products has levelled at around 10% in relation to the price of other food products.
- Japanese consumers commonly prefer Japanese products.
- Marketing in Japan has a high cost.
- Labelling laws are complex.
- Import duties on some products are high.
- There is a potential requirement to commit to long-term contracts.

The United States

Market size

According to the Organic Trade Association, the United States organic food market was worth US\$10.38 billion in consumer sales in 2003. Although this figure equates to only 1.9% of total United States food sales, organic food represents the fastest growing segment of the

food market, with an annual growth rate of 20.4%. Organic products are now available in around 20 000 natural food stores and 73% of conventional grocery stores (Greene & Dimitri 2003). There tends to be greater demand for organic food on the West Coast and in the north-east states than from the southern and mid-western states.

Consumer trends

Awareness of the ill effects of obesity and the importance of a good diet in maintaining long-term health and wellbeing is gaining among Americans and is helping to drive organic food sales. A study by the United States Food Marketing Institute in 2002 found that 61% of American consumers believed that organic foods were more beneficial to health than non-organic foods and that 57% of all shoppers had purchased organic food in the past six months. The profile of these shoppers indicated that they are interested in disease prevention and fitness, are concerned with the levels of pesticides in foods and want food with better taste. Price and variety are among the main factors which keep American consumers from choosing organic alternatives (Euromonitor 2004a).

Retail developments

Originally only readily available at farmers' markets and local cooperatives, organic foods have made major inroads into the mainstream consumer market, primarily through independent natural food chains such as Whole Foods Markets, Wild Oats and Wegmans. These chains have recorded impressive growth in recent years. Whole Food Markets, the largest natural food chain store, has 143 stores operating across 25 states. Wild Oats Markets has 102 stores, followed by Wegmans Food Markets with 65 stores in the New York area.

As the American consumer has become more aware of nutrition and the effect of food on wellbeing, demand for organic products has grown. Through increased demand, organic foods have begun penetrating the major grocery and supermarket chains with consumers prepared to pay a premium for organically grown produce and specialty items. According to the Organic Trade Association, independent natural food stores represented less than 30% of organic food sales in 2003. The mass market channel which includes supermarkets, grocery stores, mass merchandisers (for example, Wal-Mart and Target) and club stores (such as Costco) accounted for 44% of organic food sales, according to the report. The consumer interest in organic foods is forecast to continue growing. According to the United States Department of Agriculture, sales of nearly US\$8 billion in organic foods in 2000 are expected to double to US\$20 billion by 2005.

Two of the major health food retail chains, Whole Foods Market and Wegmans, have launched a private label range of organic food products to present a competitive price point to branded organic product and attract a greater share of consumer spending. Some retail chains have integrated their organic lines into their general offerings rather than placing them in a separate section.

Opportunities

The top organic food items sold in the United States include fresh produce, cereals and grains, dairy products (yoghurt and long-life milk), dried pasta and health bars. Areas of greatest growth are fresh produce, fresh meat, seafood and nutrition bars. Keeping up with demand for organic products from mainstream consumers has supermarkets adding organic versions of many of their core product category items. No longer confined to fresh produce and meat,

opportunities for Australian packaged or processed organic foods exist in categories ranging from dairy to breakfast cereals, salad dressings, soups and confectionery. A further opportunity for organic food growers is to supply the food service industry, with white-tablecloth restaurants increasingly adding organic versions of their popular dishes to menus.

Germany

Market size

Germany has a long tradition of growing and marketing organic products. In 2003 the total value of organic food retail sales in Germany was estimated at US\$2.6 billion. Germany is the largest retail market for organic food sales in Western Europe followed by the United Kingdom. It is expected to grow fastest of all Western European markets for organic food (Euromonitor 2004b). The first retail stores selling organic products, the reform shops (Reformhäuser), started more than 100 years ago. Now there are more than 2200 stores in Germany with a further 400 in Austria (Reformhäuser 2004).

Consumer trends

Consumers in this market purchase organic food for a variety of reasons including a belief that organic food tastes better, concerns about food safety and a desire to reduce their exposure to pesticides in food. In addition, a health and fitness trend is aiding sales of organic food. Around 40% of all German households buy some organic food products each month. Consumers tend to be in the 45 to 55 age group and organic food suppliers intend to focus efforts to capture the under-35 market as well (Euromonitor 2003a).

Retail developments

The distribution of organic products to German consumers may be through a variety of channels. This can be through a farm shop, cooperative shop, independent retailer, street market vendor, organic retail chain store, wholesaler, catering/hotel/restaurant supplier, mail order/direct marketing, factory shop or conventional chain retailer (with up to 10% organic products). There are 26 supermarket chains dedicated to the sale of organic products. In addition to Reformhäuser, the retail chains Bio and Naturkostläden are the largest sellers and promoters of organic products in the German market. There are a number of others (including Reformhäuser) who sell both food and consumer products. This segment of retail is growing at a faster rate than many of the conventional retail chains. In addition to the specialty organic stores, many of the major conventional retailers, including Aldi, stock many lines of organic products.

Opportunities

The top-selling organic categories in the German market are fruit and vegetables (led by carrots, tomatoes, onions), sausages, milk and meat products. Sales of organic beverages and juices are on the increase. While sales of organic meat products are high, this is not a growth segment. Demand for various organic confectionery items is growing and there is potential for high quality, differentiated products.

United Kingdom

Market size

The United Kingdom has the third largest organic market in the world, after the United States and Germany (*Marketing Week* 2004). Between 2001 and 2002 sales of organic food in the United Kingdom grew 15% in value (the Soil Association reported in Euromonitor 2003b) and by 2003 the total value of organic food sales had reached around US\$1.6 billion (Euromonitor 2004b).

The majority of organic food sales were unprocessed meat, fruit and vegetables. While demand for organic meat is currently greater than supply, many domestic meat producers have converted or are converting to organic. This is starting to replace some imported product. As a proportion of total packaged food sales in 2003, organic made up less than 1%, with the most popular organic products being sauces, condiments, soups and dairy products.

Consumer trends

Consumer demand for organic products is steadily growing. This has been driven by food scares in recent years and demand for foods grown without pesticides. According to the Acxiom shoppers' survey, the United Kingdom organic food industry is growing at 10% annually. It found that 42% of households buy one or more organic product per month. The survey also found that the retail chain, Sainsbury's, attracts the biggest share of organic consumers, with 52% of shoppers stating that they buy an organic product each month from a Sainsbury's store. Correspondingly, Tesco has 46.2% of shoppers buying an organic product each month, Asda 41% and Morrisons/Safeway 41% (*Marketing Week* 2004). Another consumer survey, conducted by research firm Mintel, found that only one-quarter of shoppers thought organic food was worth the extra money and that the price premium required of organic products would continue to be a barrier to the growth of this segment (Derbyshire 2004).

The Prince of Wales is a patron of the Soil Association. This has raised the profile of organic food production in the United Kingdom.

Somewhat like the German market, some commentators believe that demand in the United Kingdom for organic foods has peaked, with the rate of growth to slow over the next few years. Possible reasons for a slowdown in growth include the containment of health scares and a growing public understanding of issues such as genetically modified foods and pesticides in food.

Retail developments

Supermarkets dominate the retail channel for organic food sales in the United Kingdom, accounting for around 82% of the total market share (Euromonitor 2003b). A growing segment in supermarket retail, some chains state that they have more than 1000 product lines. The majority of specialist organic retailers are smaller independents or farm shops that tend to be concentrated in the south of England. An example is Planet Organic, which has two stores in London. There are also a number of home delivery companies specialising in organic fruit and vegetables. Another indicator of growth is the foreign investment by American chain

Whole Foods Markets in the specialty retail chain Fresh & Wild, with aims to expand upon their seven existing stores (*Marketing Week* 2004).

Supermarkets prefer to support local and regional farmers where possible. This reflects the idea that shipping product across the world using fossil fuel might negate any environmental benefit of organic agriculture.

Opportunities

Imports accounted for 56% of organic food and drink sold in the United Kingdom during 2002–03, falling from 65% in 2001–02 and 70% in the previous year (Green & Haward 2003). Strongly performing segments include packaged and processed foods (particularly gourmet and specialty), chocolate, coffee, juices and pasta sauces. These are some of the key areas of opportunity for Australian organic food exporters.

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CHAPTER 8

Regulation of the organic industry

Australian Quarantine and Inspection Service

The role of the Australian Quarantine and Inspection Service

With increased demand for organic produce in Australia and the world, the Australian export certification system for organic and biodynamic produce was created with the aim of ensuring the organic integrity of production, certification, identification and labelling of exported organically grown produce. The certification system, administered by the Australian Quarantine and Inspection Service (AQIS), ensures that all stakeholders including overseas importers can be confident that Australian certified produce has been grown and processed according to organic or biodynamic principles.

The Australian organic industry has worked closely with AQIS to develop the program that requires organic exporters to adhere to the National Standard for Organic and Biodynamic Produce (Organic Industry Export Consultative Committee 2002), the AQIS administrative arrangements (AQIS 2004) and the *Export Control (Organic Produce Certification) Orders 1997* (Cwlth).

The Australian export certification system for organic and biodynamic produce is a co-regulatory system between industry and government that is primarily based on third party audit principles. Co-regulation of the Australian organic industry provides a cost-effective program that is underpinned by regulation and standards, administered by AQIS, with the responsibility for ensuring compliance resting with the industry. It is consistent with other international programs and has contributed to Australia's ability to access new markets as well as maintain and improve our current market position.

Under this co-regulatory arrangement, AQIS-approved certifying organisations perform the essential certification and inspection services, with AQIS maintaining overarching verification and regulatory responsibilities. The essential inspection services provided by the AQIS-approved certifying organisations cover farms, processors, wholesalers, transporters, exporters and in some instances domestic retailers. The application of sanctions and penalties where non-compliance is evident is an essential component of this co-regulatory system. AQIS-approved certifying organisations are authorised to issue Organic Produce Certificates on behalf of the Australian Government for certified organic and biodynamic produce that is exported.

To become an AQIS-approved certifying organisation, AQIS conducts a review of the certifying organisation's documented system (known as the QM system, which is generally contained within the QM manual) and at least one initial audit. A satisfactory review of the

system results in AQIS approving the certifying organisation. The certifying organisation is then subject to annual audit by AQIS to ensure that the administrative and operational systems continue to comply with the national standard, the AQIS administrative arrangements, the *Export Control (Organic Produce Certification) Orders 1997* and importing country requirements.

Since the implementation of this co-regulatory arrangement in the mid-1990s, the number of AQIS-approved certifying organisations has grown to seven organisations servicing the needs of approximately 2345 certified operators (producers, exporters, processors and retailers) throughout Australia.

Legislation

AQIS operates under three levels of regulation. The first is the *Export Control Act 1982* (Cwlth 1991), which prescribes broad requirements for export. The second regulatory level is the *Prescribed Goods (General) Orders* as amended. These orders go into greater detail than the *Export Control Act 1982* by describing the common requirements for all goods that are exported. The final level of regulation is the commodity orders. For organic and biodynamic produce, this means the *Export Control (Organic Produce Certification) Orders 1997*. These came into effect on 22 October 1997 and provide the legal basis for AQIS activities. For example the Export Control Orders require AQIS to conduct an audit of any approved certification organisation. Where an organisation satisfies these legal requirements, it is then permitted to issue organic certification for export purposes. It should be noted however that AQIS continues to issue any additional health or phytosanitary certificate required by the authorities in the importing country.

Administrative arrangements

AQIS-approved certifying organisations are required to maintain a documented system based on the requirements of the AQIS administrative arrangements. These arrangements are based on International Standard (Guide) 65 (International Organization for Standardization/International Electrotechnical Commission 1996) and European Standard 45011 (European Accreditation of Certification 1995) and stipulate the administrative policies and operational procedures for certifying organisations. These include such things as objectivity and integrity, structure and training, sanctions and penalties, inspection and certification procedures, and export and import requirements.

The AQIS administrative arrangements have been developed to enable AQIS-approved certifying organisations to:

- harmonise interpretation and application of the requirements of the National Standard for Organic and Biodynamic Produce
- form the basis for mutual recognition agreements with other AQIS-approved certifying organisations that also consistently satisfy these requirements.

The administrative arrangements also outline the parameters for organic inspectors when inspecting certified operators. For example, the inspector must ensure that a certified operator complies with the requirements of the national standard. AQIS activities include reviewing documentation and verifying procedures of the QM system against the QM manual of the organisation. AQIS will also accompany an organic inspector during an inspection of a certified operator in order to confirm documented requirements of the approved certifying

organisation and the techniques employed by the inspector during the course of the inspection. Where clear non-compliance is evident, AQIS will take the necessary action to ensure the problem is addressed.

AQIS regulatory mark

Supplementing the administrative arrangements and the national standard is the AQIS regulatory mark. The concept for a regulatory mark began in 2001 when the matter of a single industry logo was raised. At the time, AQIS suggested that a mark could be developed and incorporated into the Prescribed Goods (General) Orders, so that any misuse could be dealt with legally. The suggestion received favourable support and after some eight months of consultation with stakeholders the design and wording were finalised and included in the orders. In conjunction with the regulatory mark, a *Requirements for Use* document was developed that specifies the conditions under which the mark may be used. Use of the mark is voluntary and is not intended to replace any existing logo of an approved certifying organisation.

The National Standard for Organic and Biodynamic Produce

The national standard was first published in Australia in February 1992 following extensive consultations between AQIS and the Australian organic and biodynamic sector. A revision of the standard in 1998 resulted in the publication of the second edition of the standard. Since then there have been advancements in organic products and systems that necessitated a complete revision of the standard in 2001 and 2002. The third edition, a substantial transformation from previous editions, was finalised and implemented on 3 December 2002.

The overall principles of the national standard remain largely unchanged and aim to:

- protect consumers against deception and fraud in the market-place
- protect producers of organic produce against misrepresentation of other agricultural produce as being organic
- harmonise national requirements for the production, certification, identification and labelling of organically grown produce
- ensure that all stages of production, processing and marketing are subject to inspection and meet at least the predetermined requirements
- provide a guide to farmers contemplating conversion to organic farming.

The standard sets out specific requirements for primary production, including the conversion phase to organic practices. For example, farmers must be capable of satisfying the requirements of the standard for at least one year before product may be labelled as *organic in conversion*, after which they will spend a further two years before being permitted to use the word *organic*. Other specified requirements cover soil management, landscape and biodiversity, plant and plant products, and livestock production including aquaculture, and animal husbandry and welfare.

The national standard permits the use of farming and processing inputs in organic and biodynamic systems provided they are not derived from synthetic or genetically modified sources. The standard itself includes a list of allowable inputs for soil management, pest and disease control, and animal health, to name a few. The standard establishes special conditions for the processing of agricultural products. For example, processors are required to keep the

certified produce completely separate and identifiable at all times from conventional agricultural products.

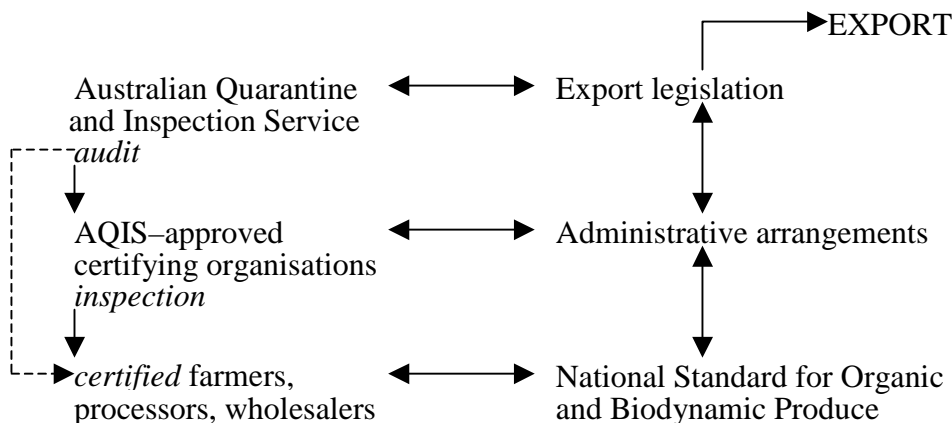
To ensure truth-in-labelling, the standard establishes trade description requirements in order to protect consumers from deceptive labelling. For example, the term *organic* is not permitted on labels unless more than 70% of the total ingredients have organic origin. Products with 70% organic components can only refer to the fact that one/more of the ingredients is organic, not that the product is organic.

The national standard requires every person who produces, manufactures or markets organic or biodynamic produce to be certified with at least one AQIS-approved certifying organisation. This undertaking then has benefits for the certified operator by allowing the produce to carry an organic or biodynamic description. However as part of the integrity process, approved certifying organisations carry out inspections on operators to ensure ongoing compliance with the standard. Whilst the standard is mainly focused on positive performance and outcomes, there are a few prohibitions, in particular the two associated with production and processing:

- prohibition of the use of irradiation, and
 - prohibition of the application of biotechnology in plant, animal or processing materials.
- Any producer or processor who complies with the standard may export certified produce irrespective of which certifying organisation conducts the inspection and certifies the operator.

Figure 8.1 shows the interrelationship of government and industry under the Australian regulatory model for organic and biodynamic produce.

Figure 8.1 The regulatory model for organic produce



On the horizon – possible future inclusions in the national standard

As the demand for organic and biodynamic produce becomes greater so too does the demand for an increasing range of products, especially non-food items. Worldwide there is a growing demand for skin care products and pet products (including pet food) that are produced in accordance with organic principles. While these products are currently not covered by the national standard, these and other products may be included at some time in the future should the organic sector wish them to be.

Other standards and regulations

Codex Alimentarius

The Codex Alimentarius Commission implements the Joint Food and Agriculture Organization/World Health Organization Food Standards Program, the aim being to protect the health of consumers and promote fair practices in the food trade. The Codex Alimentarius is a collection of internationally adopted food standards providing requirements for food control that may aid enforcement authorities.

With the growing production and international trade in organically produced foods, the Codex Committee on Food Labeling developed the *Guidelines for the production, processing, labelling and marketing of organically produced foods* (Food and Agriculture Organization 2001). This document provides guidelines that aid harmonisation of international organic requirements and help establish national organic regulations. Australia views the Codex guidelines as important, as many of our international trading partners use the guidelines in developing their own standards for organic products. Australia plays a key role in developing and revising the guidelines through its participation on the Ad Hoc Working Group for the Guidelines for the Production, Processing, Labeling and Marketing of Organically Produced Foods. The ad hoc working group has met every year for at least 10 years, developing and refining the guidelines.

International Standard 65 and European Standard 45011

The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) develop ISO/IEC guides. Members participate in the development of standards that have international recognition. ISO Guide 65 specifies requirements for certification bodies operating third party auditing systems. The guidelines ensure reliable and consistent operating procedures that can be recognised nationally and internationally (ISO/IEC 1996).

The European Accreditation of Certification consists of members from accreditation bodies in Europe who together aim to develop a single accreditation system. European Standard 45011 outlines guidelines for bodies operating product certification. The document provides general criteria that certifying organisations have to meet to be recognised at a European and national level. This standard aids mutual recognition between certifying organisations and demonstrates that the operation's procedures are competent and reliable (European Accreditation of Certification 1995).

Consultation

Contributing to the regulatory system for organic and biodynamic produce are the consultative processes between the Australian Government and its stakeholders. For the Australian organic and biodynamic sector, consultation with AQIS occurs via the Organic Industry Export Consultative Committee. This committee comprises representatives from each AQIS-approved certifying organisation; two state governments; the Organic Federation of Australia; the International Federation of Organic Agriculture Movements; the manager of the Rural Industries Research and Development Corporation Organic Produce Research Program; a representative from the Quarantine and Exports Advisory Council, and representatives from the Australian Government Department of Agriculture, Fisheries and

Forestry. The committee meets twice a year to discuss operational matters, plan market access activities, discuss financial performance and business planning, and draw attention to industry issues.

In 2001 a national standard subcommittee was formed following agreement from the Organic Industry Export Consultative Committee. The subcommittee comprises four industry-elected representatives and one government officer and is responsible for reviewing applications to amend the national standard. Submissions can be made by stakeholders and other interested parties on matters concerning the standard. Submissions can relate to the production, processing, packaging and transportation of certified organic produce, matters of parity and equivalence with international standards and other importing countries, and any other relevant matter of standards and protocol affecting the Australian organic industry and the government. Recommendations are made after extensive deliberations on the positives and negatives of suggested amendments, after consultation with relevant agencies and experts. The recommendations made by the subcommittee are passed onto the consultative committee for consideration and final decision before amending the national standard.

Domestic regulation

The interstate trade and labelling of organic and biodynamic produce falls under the legislative requirements of the *Trade Practices Act 1974* (Cwlth), enforced by the Australian Competition and Consumer Commission. For trade of organic produce within state or territory boundaries, fair-trading laws apply as administered by the offices of fair trading in the states and territories.

Australian Competition and Consumer Commission

The Australian Competition and Consumer Commission (2003) is an independent Australian Government statutory authority. It was formed in 1995 and is responsible for enforcing the Trade Practices Act and the equivalent state and territory legislation. The purpose of the Act is to contribute to the welfare of Australians by providing fair trading and consumer protection. It helps protect consumers from false claims or implications. The Act also includes provisions for relationships between suppliers, wholesalers, retailers, competitors and customers.

For interstate trade, the Trade Practices Act provides guidelines and sanctions to ensure produce sold as organic or biodynamic and labelled as such has been produced in accordance with public expectations. The Act protects customers from fraudulent claims that a product is organic.

Imports

Organic food products that are imported into Australia must comply with all of the requirements of the Australian New Zealand Food Standards Code, as required under the provisions of the *Imported Food Control Act 1992* (Cwlth). Neither the code nor the Act set out any requirements regarding the organic status of a food. The authenticity of claims about the organic nature of the food is therefore not checked at the border when the product lands in Australia. Rather, the Trade Practices Act protects consumers of organic and biodynamic products against fraudulent claims. Any person who trades in food and makes fraudulent or

misleading claims as to the organic nature of the product is liable to prosecution under this Act. When determining whether an organic claim is fraudulent or not, the courts would be guided by the principles for organic and biodynamic production, labelling and marketing that are described in the national standard.

The situation is different when an imported product is to be either incorporated into another organic product and offered for export or is repackaged or relabelled and then offered for export. Under these circumstances organic claims on the product must be substantiated by an AQIS-approved certifying organisation before the goods are exported.

Export market access

For the producers of Australia's organic and biodynamic produce, access to international markets is crucial. While increasingly most of Australia's organic and biodynamic produce is exported to South-east Asia, our traditional markets have been the European Union, Japan and to a lesser extent Switzerland. AQIS considers it important to establish strong relationships with the authorities in these markets in order to negotiate favourable access for Australia's organic produce.

As a result of these negotiations, Australian organic and biodynamic exporters have preferential access to the European Union, Switzerland and Japan for all plant-based products. In all of these markets, the national standard has been deemed equivalent to the standard operating in the respective markets. Negotiations for access for livestock products to the European Union and Switzerland continue. A positive result is anticipated. Japan has only recently introduced a draft standard to cover livestock and Australia will be making application to the authorities for preferential access once the standard has been finalised.

Another market of interest for Australian exporters is the United States with its considerable consumer market. While two AQIS-approved certifying organisations are recognised by United States authorities, AQIS is negotiating with the United States Department of Agriculture for recognition of Australia's export certification system for organic and biodynamic produce. Once these negotiations are finalised, all AQIS-approved certifying organisations will be able to certify supplies to this market.

Australian exporters also want AQIS to negotiate preferential access to the Republic of Korea, the People's Republic of China and Thailand. While negotiations are only in their early stages, AQIS will continue to press for a satisfactory outcome for exporters of Australian organic produce.

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Food and Agriculture Organization 2001, *Organically produced foods: Guidelines for the production, processing, marketing and labelling of organically produced foods*, Joint Food and Agriculture Organization /World Health Organization Food Standards Programme, Codex Alimentarius Commission, Rome.

International Organization for Standardization and International Electrotechnical Commission (ISO/IEC) 1996, *ISO Guide 65 General requirements for bodies operating product certification systems*, 1st edition, Switzerland.

Organic Industry Export Consultative Committee 2002, *National Standard for Organic and Biodynamic Produce*, 3rd edition, Organic Industry Export Consultative Committee, Canberra.

CHAPTER 9

Government resources and assistance

Please note that the information contained in this chapter has been obtained from a few publicly available sources in mid-2004. It is not a comprehensive guide to Australian Government funding. The information is of a general nature: its timeliness and accuracy cannot be guaranteed. Anyone interested in using these programs should contact the agency concerned and obtain up-to-date guidelines and criteria.

Australian Government assistance

GrantsLINK

A first point of contact for information on Australian Government funding is GrantsLINK, which has a website at <<http://www.grantslink.gov.au>>. GrantsLINK helps individuals and community groups find suitable and relevant grants from the many Commonwealth grants that are available. GrantsLINK also helps users find the best source of funding and complete application forms. The Australian Government Department of Transport and Regional Services manages GrantsLINK.

Natural resource management

Australian Government Envirofund

The Australian Government Envirofund is the local action component of the \$2.7 billion Natural Heritage Trust. It helps communities undertake local projects aimed at conserving biodiversity and promoting sustainable resource use. The Envirofund enables community groups and individuals to apply for grants of up to \$30 000 to carry out on-ground and other actions to target local problems.

Australian Government Envirofund
Natural Heritage Trust
GPO Box 787
CANBERRA ACT 2601

Email: envirofund@daff.gov.au
Phone: 1800 303 863 (toll-free)
Fax: 02 6272 3626 (attention: Envirofund Section)
Website: <<http://www.nht.gov.au/envirofund/index.html>>

Environmental management systems

Environmental management systems (EMSs) are ways of establishing and maintaining sustainable production systems. An environmental management system is a methodical

approach to continuous improvement in planning, implementation and review of an organisation's efforts to manage its impacts on the environment.

There are three elements of Australian Government involvement in environmental management systems:

- the EMS National Pilot Program to develop and assess the value of environmental management systems as management tools and performance management frameworks
- the EMS Incentives Program to provide a rebate to producers who adopt environmental management systems, and
- the Pathways to Industry EMS Program in which the Australian Government and industry in partnership develop environmental management systems and environmental assurance approaches to meet the needs of industry groups.

EMS Contact Officer
Natural Resource Management
Australian Government Department of Agriculture, Fisheries and Forestry
GPO Box 858
CANBERRA ACT 2601

Email: ems@daff.gov.au
Phone: 02 6272 4531
Fax: 02 6272 4960
Website: <<http://www.daff.gov.au/ems>>

National Landcare Program

The National Landcare Program seeks to increase the engagement of industry and resource users in caring for the land and in natural resource management activities, with a focus on developing partnerships in sustainable primary industries.

National Landcare Program – Community Support

Grants are available for community and industry Landcare projects in natural resource management and sustainable agriculture that are consistent with priorities in accredited regional plans and investment strategies. Funding of about \$25 million will be available for Community Support projects in 2004–05. The projects complement the Natural Heritage Trust, the National Action Plan for Salinity and Water Quality and the Envirofund.

National Landcare Program – Natural Resource Innovation Grants

One-off grants are available to groups or individuals to investigate or test innovations that will contribute to improved natural resource management in primary production or processing. Total funding of \$1.5 million is available in 2004–05. Grants are available for 50% of eligible project costs, and are generally limited to \$150 000 per project for a 12-month period.

National Landcare Program – Sustainable Industry Initiatives

This invests in projects which help industry identify the natural resource management issues facing them nationally and provides the frameworks and tools to address these issues, including information, training and best practice approaches. Investments complement

specific measures and tools that are supported through other programs such as research and development programs or environmental management systems.

Landcare and Sustainable Industries
Australian Government Department of Agriculture, Fisheries and Forestry
GPO Box 858
CANBERRA ACT 2601

Email: landcare.contact@affa.gov.au
Phone: 1800 657 220 or 02 6272 4350
Fax: 02 6272 4526
Website: <<http://www.daff.gov.au/landcare>>

Innovation and industry development

New Industries Development Program

The New Industries Development Program (NIDP) helps people in agriculture, food processing, fisheries and forestry turn innovative business ideas into competitive, profitable and sustainable commercial ventures. The Australian Government has committed over \$38 million to NIDP from 1999 to 2011. NIDP helps Australian agribusinesses commercialise new products, services and technologies. This assistance is designed to develop the skills and knowledge necessary to capture new market opportunities.

New Industries Development Program
Australian Government Department of Agriculture, Fisheries and Forestry
GPO Box 858
CANBERRA ACT 2601

Email: nidp@daff.gov.au
Phone: 1300 884 588
Fax: 02 6272 4367
Website: <<http://www.daff.gov.au/agribiz>>

National Food Industry Strategy

Launched in 2002, the National Food Industry Strategy (NFIS) is a government-industry partnership for growth in the Australian food industry to which the Australian Government has committed \$102.4 million over five years.

National Food Industry Strategy – Food Innovation Grants

The Australian Government is providing \$34.7 million under the Food Innovation Grants (FIG) Program to help the food industry find scientific and technical innovations that will expand markets and lead to a commercial benefit. The program provides matching funding to food businesses undertaking research and development. Grants range from \$25 000 to \$1.5 million.

National Food Industry Strategy – food centres of excellence

The Australian Food Safety Centre at the University of Tasmania and the Centre for Functional Foods at the University of Wollongong are being funded by the NFIS Ltd for four years to conduct research and gather scientific evidence that will improve food safety and expand the market share of functional foods (foods which have added health benefits).

National Food Industry Strategy – proposed organic food chain demonstration project

The NFIS Food Chain Program is exploring a possible supply chain demonstration project in organic foods. The purpose of this project is to demonstrate the business advantages of cooperation and collaboration through the organic chain to create customer value, to build chain efficiency and to demonstrate innovation in chain management for the benefit of the sector. The project seeks also to build chain management skills among participants. The project will provide a focus for the coordination of Australian organic food exports, initially for processed foods to the Japan market but extending to organic food ingredients and fresh organic products that can consistently meet customer needs.

National Food Industry Strategy Ltd
Locked Bag 4911
KINGSTON ACT 2604

Email: nfis@nfis.com.au
Phone: 1300 130 360
Fax 02 6270 8888
Website: <http://www.nfis.com.au>

Commercialising Emerging Technologies

The Commercialising Emerging Technologies (COMET) program supports businesses and individuals to commercialise innovative products, processes and services. Commercialising Emerging Technologies is a competitive, merit-based grants program delivered by private sector consultant business advisers.

Email: hotline@ausindustry.gov.au
Phone: 13 28 46
Website: <http://www.ausindustry.gov.au>

Commercial Ready Programme

The Australian Government has committed more than \$1 billion over five years from 2006–07 to the Commercial Ready Programme to encourage the growth of innovative Australian companies in emerging and high-technology industries. More than 1700 small and medium-sized firms will be supported to undertake research and development, proof of concept, technology diffusion and early stage commercialisation.

Email: hotline@ausindustry.gov.au
Phone: 13 28 46
Website: <http://www.ausindustry.gov.au>

Australian Tourism Development Program

The Australian Tourism Development Program provides funding to businesses for the development of tourism attractions, facilities, special interest markets, and cultural and heritage attractions that will encourage regional tourism.

Email: hotline@ausindustry.gov.au

Phone: 13 28 46

Website: <http://www.ausindustry.gov.au>

Agriculture – Advancing Australia

Agriculture – Advancing Australia (AAA) is a package of programs designed to help rural businesses face the challenges of the future by becoming more competitive, sustainable and profitable. Since 1997, Agriculture – Advancing Australia has focused on improving the business and risk-management skills of primary producers and helping farm families in serious financial difficulty.

AAA – FarmBis helps farmers, wild catch fishers and land managers to develop business and natural resource management skills by funding education and training.

AAA – Farm Help provides support for farm families in severe financial difficulty.

AAA – Farm Management Deposits enable primary producers to set aside pre-tax primary production income in good years as cash reserves to help meet costs in low-income years.

AAA – Industry Partnerships is a one-year initiative that aims to help targeted industries build self-reliance and manage change and adjustment pressures.

AAA – International Agricultural Cooperation (formerly Farm Growth Through Export Growth) aims to strengthen bilateral agricultural relationships with key trading partners, especially China, Indonesia, Thailand and the Philippines.

AAA – Rural Financial Counselling Service provides grants to rural community groups to contribute to the cost of employing a rural financial counsellor.

AAA – Rural Industries Leadership aims to improve recognition of the contribution that women, young people and indigenous people make to rural industries and to encourage them to become part of the decision-making process in their industries.

Phone: 1800 686 175

Website: <http://www.daff.gov.au/aaa>

Export market development

Austrade

Export assistance programs

Austrade offers a range of export assistance programs. Any Australian individual, partnership, company, association, cooperative, statutory corporation or trust that has carried on an export business during the year can apply for a grant.

Export Market Development Grants Scheme

The Export Market Development Grants Scheme provides assistance to small and medium Australian businesses committed to, and capable of, seeking out and developing export markets. Applicants may qualify for up to 50% reimbursement of eligible export promotion and marketing expenses above \$15 000 per year to a maximum of seven grants. Up to \$150 000 per year may be reimbursed.

Phone: 13 28 78

Website: <<http://www.austrade.gov.au>>

Research and development

Rural Industries Research and Development Corporation

Organic Produce Research Program

The purpose of the Rural Industries Research and Development Corporation (RIRDC) is to manage and fund priority research and to translate results into practical outcomes for rural industry development across Australia. The focus is on new and emerging industries as a means of diversifying Australian rural enterprises. The role is enhanced by research and development for key generic issues confronting the rural sector. RIRDC's vision is a more profitable, dynamic and sustainable rural sector. Its support for the organic food and farming sector is consistent with this purpose and vision. RIRDC has recently restructured its portfolio with its activities in support of organic industry development becoming part of the Sustainable Systems key program. Allocation of research and development funds is in line with the Organic Produce Research and Development Plan 2001–2006. The desired outcomes from RIRDC's investment in the organic industry are strong domestic and export markets, improved environmental management through adoption of organic farming practices and demonstrated improvements in the quality of the food we consume. Funding is allocated for research and development into organic production, conversion processes, regulation, validation and market access, supply chain management and intelligence, and communication and facilitation. In 2004–05, RIRDC will commit \$335 000 to the Organic Systems program.

Rural Industries Research and Development Corporation
PO Box 4776
KINGSTON ACT 2604

Email: rirdc@rirdc.gov.au

Phone: 02 6272 4539

Fax: 02 6272 5877

Website: <<http://www.rirdc.gov.au>>

Other research and development corporations

Dairy Australia
Locked Bag 104
FLINDERS LANE VIC 8009

Phone: 03 9694 3777
Fax: 03 9694 3733
Website: <<http://www.dairyaustralia.com.au>>

Grains Research and Development Corporation
PO Box 5367
KINGSTON ACT 2604

Email: grdc@grdc.com.au
Phone: 02 6272 5525
Fax: 02 6271 6430
Website: <<http://www.grdc.com.au>>

Grape and Wine Research and Development Corporation
PO Box 221
GOODWOOD SA 5034

Email: gwrdc@gwrdc.com.au
Phone: 08 8273 0500
Fax: 08 8373 6608
Website: <<http://www.gwrdc.com.au>>

Horticulture Australia Limited
Level 1, 50 Carrington Street
SYDNEY NSW 2000

Phone: 02 8295 2300
Fax: 02 8295 2399
Website: <<http://www.horticulture.com.au>>

Meat and Livestock Australia
Locked Bag 991
NORTH SYDNEY NSW 2059

Phone: 02 9463 9333
Fax: 02 9463 9393
Website: <<http://www.mla.com.au>>

Sugar Research and Development Corporation
PO Box 12050
George Street
BRISBANE QLD 4003

E mail: srdc@srdc.gov.au
Phone: 07 3210 0495
Fax: 07 3210 0506
Website: <http://www.srdc.gov.au>

Cooperative Research Centres

The Cooperative Research Centres (CRC) Programme was established to bring together researchers and research users. It emphasises the importance of collaborative arrangements to maximise the benefits of research through an enhanced process of utilisation, commercialisation and technology transfer. It also has a strong education component with a focus on producing graduates with skills relevant to industry needs.

An application to set up a Cooperative Research Centre for Organic Food and Farming Technologies, involving 34 organisations around Australia, successfully passed the preliminary stage in March 2004. A full application was submitted in July 2004. If successful, the centre will run from July 2005 to June 2012 and will invest over \$100 million in research, development and education that will contribute to the growth of the Australian organic industry.

Cooperative Research Centres Programme
Website: <http://www.crc.gov.au>

State government assistance

New South Wales

New South Wales Agriculture conducts a number of research and development activities in organic agriculture. Two full-time extension staff, based at Yanco and Bathurst, are dedicated to organic farming. They provide advice and education on organic farming and are involved in projects to encourage organic conversion and the development of production alliances and regional marketing. The department also offers short courses in organic farming at the Tocal and Murrumbidgee Colleges of Agriculture and has produced a number of publications on organic production.

The department has a number of other organic projects:

- The New South Wales Agriculture Centre for Organic Farming at Bathurst was officially opened in July 2001. There are three full-time and one part-time staff dedicated to organic farming issues.
- An established organic farming demonstration site is at Yanco in the Riverina. In 2001 the site was approved for organic certification.
- The Rankin Springs Central West Farming Systems trial is comparing a number of farming systems, including an organic system. The long-term trial is in its second cropping year.

- The department is investigating methods to increase crop yield and cropping frequency on organic broadacre livestock-cereal farms by improvements in soil fertility in the pasture phase and by establishing criteria to determine the best rotation intervals.
- A national project coordinated by New South Wales Agriculture to facilitate the adoption and production of organic seed and seedlings is under way.

Organic Farming Liaison Officer
Yanco Agricultural Institute
YANCO NSW 2703

Phone: 02 6951 2735

Organic Horticulture Industry Development Officer
Bathurst Agricultural Research and Advisory Station
BATHURST NSW 2795

Phone: 02 6330 1212

Website: <<http://www.agric.nsw.gov.au/reader/organic>>

The New South Wales Department of State and Regional Development has 19 regional offices that offer a broad range of business services to help agricultural enterprises and communities maximise their profitability and sustainability and explore opportunities to diversify. Export advisers can also offer advice, guidance and assistance to help regional companies capitalise on export opportunities.

The department has other assistance programs that could be relevant to the organic industry:

- The New Market Expansion Program helps small and medium-sized regional businesses develop new confidence, networks and skills to realise opportunities outside their traditional markets and local economies.
- The Regional Business Development Scheme offers financial and other assistance to businesses investing in, expanding within or relocating to regional New South Wales.
- The International Trade Missions and Market Visits Program offers export-ready New South Wales companies a pathway to identify new business opportunities and to acquire the knowledge and networks critical to export success.
- The department's innovation services can help a business grow through value-adding and adopting new technologies.
- The Developing Regional Resources Program provides funding for regional organisations, industry associations or alliances of regional firms to investigate and pursue new opportunities.

Department of State and Regional Development
PO Box N818
SYDNEY NSW 1220

Phone: 02 9228 3111

Fax: 02 9228 3626

Website: <<http://www.business.nsw.gov.au>>

Tasmania

The Tasmanian Government offers a number of forms of assistance to the organic industry. The Department of Primary Industries, Water and Environment employs an Industry Development Officer – Organic Agriculture providing a full-time advice and referral service to the organic industry. A Ministerial Organics Advisory Group provides advice to the Minister for Primary Industries and Water on issues relating to the development of the organic industry. The Department of Economic Development employs client managers who provide advice, support and referrals on business planning and enterprise development matters.

Tasmanian Government assistance programs that could be relevant to the organic industry are:

- The New Market Access Program has been set up to help small to medium enterprises profitably enter the mainland Australian market as a first step to reaching global markets.
- The Enterprise Development program aims to improve the managerial capacity of small to medium enterprises so they can manage growth and improve international competitiveness. The program provides practical assistance with strategic planning, marketing, finance, operational improvement and supply chains.
- The Partnership to Jobs program aims to increase employment opportunities for disadvantaged job seekers, including the long-term unemployed.
- The Women in Business Program aims to develop and expand business opportunities by increasing the management skills of women.
- The Commercialisation Ready Program aims to increase the commercial success of innovative products, processes and services, and is broadly aimed at established businesses involved in research and development.
- The Innovation Grants program is designed to assist small and medium-sized businesses to commercialise innovative new products and services.

A one-hectare organic conversion trial is underway at Grove in the south of Tasmania. Two varieties of apples and several varieties of olives (as a windbreak) are on trial with a view to expanding production of those varieties that give the best results. This trial follows a successful vegetable conversion project in the north-west of Tasmania which gained full certification in 2002.

Department of Economic Development

Website: <<http://www.development.tas.gov.au>>

Department of Primary Industries, Water and Environment

Website: <<http://www.dpiwe.tas.gov.au>>

For specific information on organics: click on Food and agriculture, then Organic farming.

Victoria

The Victorian Department of Primary Industries provides a network of experienced research and extension officers throughout the state to respond to enquiries from primary producers on organic and biodynamic production and marketing. This covers a range of industries including grains, meat, dairy and horticulture. This network is coordinated by a dedicated position. Regionally based marketing officers also assist primary producers, processors, wholesalers, retailers, exporters and other businesses to develop effective organic or biodynamic supply chains.

Through its website the department provides a range of specialist information notes on organic production and marketing, certification, and weed and pest management for organic systems. Agnotes are provided free of charge to the members of the public.

Through the Naturally Victorian Initiative, the department has a research and extension project to increase organic lamb production in Victoria. Another project under this initiative invests in research and development to identify and communicate sustainable practices in the horticulture industry for the benefit of primary producers. Organic farming systems have a key role in this project.

The Victorian Department of Primary Industries, in partnership with the Rural Industries Research and Development Corporation, invests in research and development to improve the establishment and management of perennial pastures for organic mixed farming systems. This project began in 2004 and aims to provide primary producers with sustainable organic methods of establishing perennial pasture.

Primary Industries Research Victoria maintains two field-based research sites at Mildura and Rutherglen to benefit primary producers and the Victorian organic and biodynamic industry. Both sites are certified organic and reflect intensive irrigated horticultural production and broadacre crop and sheep production respectively.

Organics Coordinator
Department of Primary Industries Victoria
Chiltern Valley Road
RUTHERGLEN VIC 3685

Phone: 02 6030 4500

Website: <<http://www.dpi.vic.gov.au>>

For specific information on organics: click on Agriculture and food, then General farming, then Organic agriculture.

The Victorian Government also has a range of business programs and industry assistance, details of which can be found at <<http://www.business.vic.gov.au/programs>>.

Western Australia

The Department of Agriculture Western Australia conducts a number of research and development activities in organic agriculture. One full-time development officer, based at South Perth, is dedicated to organic farming. The department provides advice and education on organic farming and is involved in projects to encourage organic conversion and the development of supply chain alliances, trade and markets. The department provides an equipped office for the Organic Growers Association of Western Australia.

The department has produced a number of publications on organic production and markets, and is currently involved in several projects associated with organic production systems and industry development:

- organic conversion demonstration (mangoes) at Kununurra
- organic apple industry development
- organic vegetable industry development

- weed control in organic wheat production
- organic dairy industry study.

Other departmental activities of value to the organic industry include aspects of breeding and selection, integrated pest management, non-chemical controls for pest, disease and weeds, and agronomic and animal husbandry research.

Development Officer, Organic Agriculture
Department of Agriculture Western Australia
Baron–Hay Court
SOUTH PERTH WA 6151

Phone: 08 9368 3960

Website: <<http://www.agric.wa.gov.au>>

Queensland

The Department of Primary Industries and Fisheries (DPI&F) website contains information to assist food producers in making informed business decisions about whether their enterprise is suited to organic production systems. It also includes information for consumers interested in finding out more about organic food. There is basic information on production, marketing, trade, and certification. Also included are contacts and links to further information.

Department of Primary Industries and Fisheries

Phone: 13 25 23 (interstate: 07 3404 6999)

Website: <<http://www.dpi.qld.gov.au>>

For specific information on organics: click on Horticulture and fresh produce, then DPI and organics.

South Australia

Department of Primary Industries and Resources, South Australia
<<http://www.pir.sa.gov.au>>