Green Marketing and EMS
Assessing potential consumer influence on EMS development in fresh food chains

A report for the Rural Industries Research and Development Corporation

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Foreword

On-farm Environmental Management Systems (EMSs) establish farm management frameworks to achieve continuous improvement in natural resource management by integrating best available management practices and relevant codes of practice.

This project investigates the level of consumer demand for food produced according to codes of practice ensuring sustainable use of natural resources. The rationale for the project is to better harness the power of consumers and commercial food markets to deliver improved environmental outcomes via EMSs in food production and in food processing and marketing.

The findings from this research will influence the development and elaboration of improved environmental management systems in food production and marketing.

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Abbreviations

BMP          Best Management Practice
EMS          Environmental Management System
EUREPGAP     Euro Retailer Produce Working Group for Good Agricultural Practice
FSC          Forest Stewardship Council
HACCP        Hazard Analysis and Critical Control Point
ISO14001     International standard specification for developing an EMS against which certification can occur
LCA          Life Cycle Analysis
NFIS         National Food Industry Strategy
NGOs         Non-Governmental Organisations
QA           Quality Assurance
SFI          Sustainable Forest Initiative
VEMA         Voluntary Environmental Management Arrangement
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Executive Summary

This project investigates the likely demand for food produced according to codes of practice ensuring sustainable use of natural resources. The rationale for the project was to better harness the power of consumers and commercial food markets to deliver improved environmental outcomes via EMSs in food production and in food processing and marketing.

The project explores the perceived level of understanding of linkages between food products and sustainable land management; and likely consumer willingness to purchase food and food products certified as sustainably produced. The likely consumer responses to green marketing initiatives were explored through in-depth interviews conducted with key informants in Australian food companies and by an extensive review of international literature related more broadly to green marketing. The interviews with key informants in food companies focused on the feasibility and perceived viability of food branding and authentification programs for sustainably produced food.

The interviews with key informants indicated that there is confusion, lack of understanding, and skepticism regarding the nature of food produced to environmentally sustainable standards, in contrast to foods labeled as organic. As a consequence, food industry informants indicated that, in general, it was not currently feasible to market food asserted as produced to environmentally sustainable standards. This situation is caused and confounded by the difficulty in identifying the ‘sustainably produced’ properties of food products; the lack of appropriate labeling and branding strategies; the lack of veracity and certification of claimed production and processing practices; the lack of a credible environmental management system for food products; and by consumer confusion or indifference.

A key finding is that the meanings of the labels “sustainably produced” and, to a lesser extent, “environmentally friendly” are confused and, in contrast to “organic”, not widely agreed by the industry or consumers. This confusion, and the assessment that currently there is relatively insignificant demand for sustainably produced food, will result in considerable delay in the eco-labelling of food products. Organic food products and naturally produced food are often perceived as surrogates for sustainably produced food. From a retailing perspective, sustainably produced food is more than sustainably used natural resources at the farm level. It necessarily includes sustainable practices throughout all elements of the food the supply chain to the point of retail.

The findings of this study concur with international experience that there is little clarity regarding what green, sustainable, or environmentally friendly production systems mean and what benefits these systems deliver to the consumer. This suggests a necessary, but not sufficient, condition for progress in green food marketing is that clear protocols, guidelines and accreditation processes must be established if generic labelling is to be adopted to communicate the benefits to consumers and facilitate the market development for sustainably produced food products.

Experience with organic products, with established production and accreditation protocols, suggests that market growth for food labelled as sustainably produced will be slow and substantially constrained by low margins in the industry, higher production costs, and low consumer demand. It would appear that the market for food products that are sustainably produced, or produced in an environmentally friendly way, will not be commercially viable in the short-to-medium term.

Introduction of EMSs will have to fit with the purchasing protocols of the large food retailers which have QA systems, applied at the production level, for fresh produce. These QA systems tend to be HACCP based and are third-party audited. The introduction of new EMSs asserting sustainable production is likely to be incremental to these existing supply arrangements.
Introduction

Environmental Management Systems (EMSs) focus on the environmental impacts of production and establish management frameworks that achieve continuous improvement in natural resource management by integrating best available management practices and relevant codes of practice. One of four themes of the National Food Industry Strategy (NFIS) is environmental sustainability – to ensure development of a sustainable, globally competitive Australian food industry. The NFIS policy encourages the food industry to improve natural resource management, including biodiversity and land and water conservation.

The EMS process allows landholders to respond, in a transparent and authenticated way, to consumer concerns regarding appropriate farming methods, environmental degradation and quality assurance. The recent discussion paper National Framework for Development of EMSs in Agriculture recognizes the vertical integration of EMSs – reflecting the market and supply chain features of EMSs for agriculture and the potential role of the consumer. Currently, in Australia, most EMS development has been driven by a producer and agency focus in seeking to implement appropriate industry codes of practice that have been, or are yet to be, developed. While farmers have a range of views and inclinations about protecting the environment (see Williams and Cary 2002), there are powerful limitations on the capacity of food producers to adopt more sustainable environmental management practices where there are no economic incentives to do so (Cary 2000; Cary, Webb and Barr 2002). In countries other than Australia EMSs frequently have been established by private sector institutions (usually food retailers) in the food supply system.

Most of the current discussion of EMSs, BMPs and industry codes of practice in agriculture has been about the production end of the supply chain. This project focuses on the customer end of the chain for promoting the implementation of EMSs. Identification – and subsequent transmission – of consumer demand for sustainable produced food products from resilient agricultural systems will prove a catalyst enabling the development and implementation of EMSs. Such EMSs are likely to be operationally more effective.

The Federal and State Governments’ National Action Plan for Salinity and Water Quality (Commonwealth of Australia 2000) and the Natural Heritage Trust recognised the importance of finding economic drivers for improved resource management. EMSs have a potentially central role as economic drivers for improved natural resource management. EMSs that are able to assure food consumers that authenticated codes of environmental practice are in place present possibilities for encouraging the sustainability and competitiveness of agricultural industries in given localities.

The objectives of this project were:

- to establish the level of consumer demand for food produced according to codes of practice ensuring sustainable use of natural resources; and
- to harness the power of consumers and commercial food markets to deliver improved environmental outcomes via EMSs in food production.

These broader objectives were limited by funding for the project. Thus, more specifically, the objectives were directed towards achieving the following outcomes:

- a secondary assessment of the level of consumers’ willingness to purchase food and food products certified as sustainably produced, as assessed by relevant personnel in the food industry
- establishing how food processors, wholesalers and retailers regard the perceived viability and feasibility of food branding and authentification programs for food produced using sustainable management practices.
Environmental Management Systems

Australia’s first national workshop on environmental management systems in agriculture provided initial steps in the difficult, some would say fraught, task of developing a national approach to the use of EMS in Australian agriculture (Carruthers and Tinning 1999). Mech and Young (2001) in an analysis of the possibilities of voluntary environmental management arrangements (VEMAs) for enhancing environmental management canvassed supply chain driven environmental change and harnessing green consumer preferences. They pointed out that design specifics of VEMAs determine the level of consumer confidence and marketplace recognition associated with different schemes.

Mech (2002) noted the limits of public regulatory and related incentive approaches to environmental protection in bringing about improvements to aspects of environmental quality in a wide range of industry sectors. EMSs hold promise as a business tool to help farmers, land and rural industry managers to address complex environmental and NRM issues (Mech, Low and Cole 2003).

In Gunningham and Sinclair’s (2002) broad-ranging review EMSs in agriculture are more broadly considered as environmental partnerships. Gunningham and Sinclair categorised three types of partnership. EMSs can be considered as partnerships between: farmers and industry, farmers and government, or multi-party environmental partnerships (for example, between farmers, industry and an environmental NGO such as the Australian Conservation Foundation).

- EMSs as partnerships between industry and farmers are relatively uncommon in Australia. In countries other than Australia EMSs have been established largely by private sector institutions (usually food retailers) in the food supply system (Morris 2000). Such partnerships reflect supply chain relationships spanning from retailers (responding to perceived consumer demands) to growers or producers. Commonly in Europe and the United Kingdom supermarkets seeking to provide environmentally preferred products have established and driven supply chain EMSs. Gunningham and Sinclair (2002) note that farmer – industry EMSs will be more successful where it is possible to differentiate between what is being supplied by different retailers and where the consumer particularly cares about the environmental credentials of what is supplied.

- In Australia there has been considerable discussion about EMSs as potential partnerships between government agencies and farmers implemented as public voluntary programs or negotiated agreements. The proposed Australian Landcare Management System, which would be linked to Catchment Management Groups, is one such example (Douglas, Gleeson & Turner 2002). Such approaches are promoted as being able to build on existing Landcare values and infrastructure (Douglas, Gleeson & Turner 2002; Webb, Cary and Campbell 2002). Gunningham and Sinclair observed that partnerships between a government agency and farmers have only modest success, generally, because of the centrality of farmers in the target-setting process, the scope for free-riding by others, a lack of sanctions with participants’ commitments being non-enforceable, and poor monitoring of compliance (Gunningham and Sinclair 2002; OECD 2000).

- EMSs involving multiple partners potentially have the advantage that additional partners can provide additional attributes that the initial two partners lack; however additional partners increase the complexity of the relationships (Gunningham and Sinclair 2002). Often multi-party partnerships involve environmental groups. In the broader market context, environmental groups and environmental organizations create the conditions that lead consumers to be concerned about sustainable food production. When involved in such partnerships the environmental group can be a valuable source in helping the industry firm to understand the issues, develop appropriate solutions and assist with implementing an appropriate EMS (Polonsky and Rosenberger 2001). Importantly, environmental organisations can provide credibility and authenticity to the quality assurance of an EMS. They also provide a strategic bridge between the industry partner and environmentally-orientated consumers (Polonsky 2001).
Both producer-focused and consumer-focused EMS partnerships have strengths and weaknesses. Under most circumstances, most farmer–government designed EMS partnerships are unlikely to exclude the majority of farmers and thus will operate at low or negligible levels of certification. The multiple objectives of industry–farmer EMS partnerships, while involving consumer concerns about food production, will be limited by the fact that consumer purchasing behaviour does not reflect concern about sustainable food production. In contrast, food consumers appear much more concerned about food and health, food safety and animal welfare.

Several issues arise from Gunningham and Sinclair’s (2002) review and from assessments of recent experience in Europe and Asia:

- Supply chain pressure is becoming more important for a number of environmental problems that are likely to be addressed through industry–farmer supply chain arrangements. This is likely to be most commonly implemented by supermarket chains seeking independent certification of their suppliers for quality related to environmental management using appropriate EMSs.

- The success of industry – farmer EMSs is likely to be dependent on the extent to which consumers care about the environmental credentials of the different foods they purchase. As consumers’ understanding of the environmental impact of unsustainable production systems increases their willingness to purchase products with EMS assurance can be expected to increase.

- The greater sensitivity of many European markets and the Japanese market means the provision of environmental quality assurance is likely to be of increasing importance for Australian vegetable and fresh fruit producers. Producers exporting into Northern European markets will be exposed to the market power of the large European supermarket chains. The role of European supermarkets, such as Sainsburys and Tesco in forming environmental partnerships in the supply chain is well established.

  In Japan, a major export destination for Australian food exports, ISO 14001 – the ISO standard for Environmental Management Systems – has been implemented by companies much more extensively than in Australia (Regional Institute of Environmental Technology 2000).

Toyne, Cowell, and Mech (2004) have noted that, while a number of environmental assurance schemes enjoy success in the marketplace, overall the market forces driving environmental standards development are not strong and public concern over environmental issues and consumer behaviour in buying environmentally differentiated products are not identical.

In the following chapter we undertake an extensive review of the literature examining environmental labelling and green marketing, and we examine the roles and demands of consumers and others in the supply chain in relation to food and related products produced in an environmentally friendly way. The literature review is supported by in-depth interviews of those involved in the food supply chain. In subsequent chapters we examine the views of key informants, from a wide spectrum of the food industry, regarding the potential viability of food related eco-labelling schemes.
Green Marketing and Eco-labelling

In the first section of this chapter we present an overview of the literature on environmental marketing and “green” consumer behaviour. We then consider eco-labelling issues related to food production and marketing. The initial investigation of green marketing and eco-labelling is a wider consideration of products rather than exclusively on food products. Within the literature much of the discussion of labelling and eco-labelling relates to a wide cross section of products and issues.

Green Marketing

While it may seem un-necessary to start out discussing basic marketing it is important to establish a common point of reference in regards to marketing issues within a environmental framework. Marketing is a term that is used in various contexts and a baseline understanding is essential.

The term marketing is used to describe activities that create value through voluntary exchange between parties (Kotler et al. 2003). Within the marketing framework this involves an organization designing an offering comprising a range of characteristics, referred to as the 4-Ps (Product, Price, Place, Promotion). These characteristics can be combined in many ways to meet the needs of consumers or customers, evidenced by the diverse range of products available within a product category. This applies even within the area of environmentally responsible products. For example, it was suggested that in the 1990s there were many new environmentally friendly products introduced in Australia, which competed alongside traditional products (Anonymous 1990). In some industries it would appear that all firms have incorporated environmental characteristics into their products. Almost all packaged tuna products identify the fact that they are “dolphin safe” (Anonymous 1991).

The inclusion of environmental attributes into marketing activities has been discussed in a number of academic works in journals (for example Menon and Menon 1997, Polonsky and Rosenberger 2001), books focusing on this issue (Ottman 1998, Fuller 2001), governmental bodies (FTC 1995, OECD 1991), as well as in the popular press (Anomous 1991). It would appear that firms have taken a diverse range of approaches to using green marketing activities (Crane 2000, Polonsky and Rosenberger 2001). Firms have undertaken green activities for various reasons (Menon and Menon 1997). In some cases firms have embraced environmental issues because they have recognised that they have a duty to behave responsibly. For example, the Australian producer Blackmores has had a longstanding environmental emphasis, because of an ideological slant (Polonsky and Rosenberger 2001). Many firms that have become involved in organic food production do so because of an emotive concern for environmental issues (Dimitri and Greene 2002).

Unfortunately, some firms seem to have integrated environmental issues into their activities simply to differentiate themselves from competitors, without necessarily making any substantive change in the organisations environmental activities (Polonsky and Rosenburger 2001). The rational for such superficial changes is that consumers seek to make their consumption more responsible and will therefore be attracted to “green” products (Ottman 1998). In many cases consumers rely on firms’ marketing activities for product environmental information, simply because it is difficult for them to evaluate products environmental characteristics (FTC 1995, Latvala and Kola 2000, Morris et al. 1995), which is referred to as the credence characteristics of the information.

Unfortunately, firms that position themselves as green, even when their activities are not green, or at least are no greener than competitors, result in consumer scepticism of all types of green marketing claims, which in turn may lead to difficulties for all firms who seek to leverage their products environmental attributes in the market place (Carlson et al. 1996, Crain 2000, Davis 1993, Polonsky and Rosenburger 2001). Making environmental claims without any substantive support has been termed “greenwash” and is one of the reasons that governments around the world have sought to regulate green marketing activities (Polonsky and Kangun 1995). As far back as the early 1990s the OECD identified that there have been a range of governmental attempts to control environmental information given to consumers, as well as to promote programs that improve environmental

However, more recent research suggests that consumers may be less negative of some types of environmental marketing. For example, Bjørner et al. (2004) have suggested that the Nordic Swan environmental label has been effective promoting the purchase of some “green” products. Within the food area there also appears to be an increased demand for environmental and organic food products being sold (Maier and Finger 2001, McEachern and McClean 2002, Walley et al. 2000) and a number of retailers have introduced ranges of organic or “green” food products. This includes Tesco in the UK (Tesco 2004), Billa/Metkur Group in Austria/Germany (Grabner-Krauter and Schwarz-Musch 1999) and Monoprix in France (Eurepgap 2004). In addition there are increases in programs related to individual environmental food and agricultural products, such as Bananas (Winthrop 1999), coffee (Eurepgap 2004) and wood products (Higgins 2000).

Green Consumers

The greening of consumer behaviour has ebbed and flowed since the early 1970s, moving through various stages of evolution (See Table 1 which has been taken from Connolly et al. 2004). As with any issue, consumers’ environmental concern has not moved at the same pace across all segments of consumers and concern also varies globally. For example a 2000 Roy Morgan Poll suggested that 31% of people in the US thought environmental issues were exaggerated compared with 24% in New Zealand 23% in Australian and 22% in the UK. In the same poll it was suggested that environmental behaviours also differed, with 83% of Australian participating in Recycling, followed by 71% in NZ, 65% in the US and only 61% in the UK (Levine 2002). Interestingly 55% of Australians have also reported that they were a “bit of a Greenie at heart (Roy Morgan 2000) and thus there may be changes in green concern over time.

Table 1. Categorisations of Green Consumers in the literature (Connolly et al. 2004)

<table>
<thead>
<tr>
<th>Consumer categorisation</th>
<th>Published literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible Consumers</td>
<td>Fisk 1973</td>
</tr>
<tr>
<td>Environmentally conscious consumers</td>
<td>Dembowski &amp; Hammer-Lloyd 1994</td>
</tr>
<tr>
<td>Downshifters</td>
<td>Schor 1991 1998</td>
</tr>
<tr>
<td>Conserving Consumer</td>
<td>Pickett, Kangun &amp; Grove 1993</td>
</tr>
<tr>
<td>Humane Consumers</td>
<td>Ger 1997</td>
</tr>
<tr>
<td>Ethical simplifiers</td>
<td>Shaw &amp; Newholm 2002</td>
</tr>
<tr>
<td>Green, Ethical &amp; Charitable Consumer</td>
<td>Schlegelmilch 1994</td>
</tr>
</tbody>
</table>

Environmental concern has also been found to vary based on the issue or product being considered. For example, in the UK Walley et al. (2000) found that there were four different “clusters” of green
consumers, who each had different levels of environmental concern across a range of food issues. Consumers with differing levels of environmental concern, in general, have also been identified in other countries (Ottman 1998). Bhate (2002) found that consumers in the UK, India and Greece also had differing views in regards to a range of environmental issues. Including their willingness to modify purchase behaviour based on environmental issues.

One of the possible goals of greening products is to encourage consumers to modify behaviour. Results suggesting that consumers are willing to change their behaviour to consume green products are important. This of course needs to consider the price of green products relative to traditional goods. For example, some studies have suggested that consumers are willing to pay more for some green goods (Ottman 1992). Although, more recent results in the Morgan Polls (2002) suggest that, globally, the majority of consumers believe green goods are over priced (Australia 65%, NZ 66%, UK, 74% and USA 72%). This has been supported in other polls as well, where Mori Polls (2003) found that in the UK sustainable consumption was seen as not being accessible for many consumers, especially low-income consumers. This might then impact on whether consumers are willing to purchase green goods, if these goods have a price premium.

There will always be variations in consumer segments and nations. Latvala and Kola (2000) found that in Finland almost 60% of a sample of 1640 respondents indicated they would pay for more information about beef product quality (including environmental products). This was supported by (Reck undated) who found that US consumers were willing to pay a premium for environmentally labelled chicken products. While in the US, the ERS (2002) found that consumers were willing to pay a premium for organic baby food. Furthermore, Efforts and Meinicke (2004) identified that large proportions of consumers across countries were concerned with getting more information on food products and production processes.

Some research has suggested that consumer stated willingness to pay a premium for green products is overstated and consumers are only willing to pay a minimal premium of 5%-10% (Capelins and Strahan 1996). This is supported in the work of Tails et al. (2002) who found that for forest products there was not a sustained willingness to pay more for environmentally labelled wood products. If these latter studies are representative of actual consumer behaviour, it might result in firms re-considering their support for environmental programs including labelling, if the costs of implementing these programs are not recouped. Having said this, there are examples of where consumers have demanded environmental improvements from individual firms, industries and governments (Anonymous 1991, Niva and Timonen 2001).

If a business does consider environmental or green aspects of a product to be of important, it is necessary to communicate these benefits to potential consumers (Ottman 1998, Peattie 2001). As with traditionally marketed goods, a consumer information search can be facilitated by the provision of appropriate information by means of labelling, including eco-labelling (for example, Golan et al. 2001, Bjørner et al. 2004, Roe et al. 2001, de Boer 2003). The next section of this report discusses aspects associated with eco-labelling.

**Eco-Labelling**

Labelling of food products has had a long history. According to Golan et al. (2001) the first US mandatory food labels started in 1950. Labelling, which includes foods and eco-food labelling, can take a range of approaches (de Boer 2003, Prudencio 1996). The objective of these, and other labels, is to give consumers information about product attributes (Kotler 2003). In many cases labels explicitly are designed to address the credence quality of information and provide some external “validation” of the information provided (Roe et al. 2001). While labels might be designed to communicate information, consumer research in US, UK, Australia and South Africa suggests that some consumers interpret environmental information on packaging in ways that are potentially different to what was anticipated by marketers (Polonsky et al. 2002). For example, Polonsky et al. (2002) found that consumers interpreted a label certificating that a product was Vegan approved as demonstrating the product was environmentally safe. Whereas other consumers were sceptical of
products that promoted environmental awards that they had won, because these awards were not clearly defined in terms of the criteria evaluated. Other research has also identified that the impact of eco-labelling on consumers varies (Morris et al. 1995, Bjørner et al. 2004, Tails et al. 2002).

The question of what type of environmental information should be provided on labels can cover a range of issues (Polonsky et al. 2002, Blackshall 2000, Carlson et al. 1996). For example, the Consumer Union in the United States has a web site whose sole purpose is to discuss the range of eco-labels used in the US (Eco-Label 2004). This site includes 115 different types of labels and claims, which do not include all possible firm based labels or most international programs. Having said that, a large proportion of the labels discussed relate to food products, with an emphasis on organic products.

The specific criteria used in eco-labels also vary. In some cases these might relate to specific types of claims being made relating to the composition of products and packaging – biodegradable or recyclable (FTC 1995); process issues – dolphin-free or made with X% recycled content; use issues - saves X energy; certifications based internationally, nationally or by industry – ISO 14001, Nordic Swan, EUREPGAP, Integrated Pest Management or Forestry Stewardship Council. In this way labels are not merely messages but also claims about particular environmental properties or features of a product (de Boer 2003). Given the extensive number of types of claims and labels (Eco-Labels 2004), it is no wonder that consumers might get confused with the volume of information or lack of consistency (Mendleson and Polonsky 1995).

Whichever environmental labelling approach is used, it is important that the environmental benefits represented are credible and of importance to potential consumers (FTC 1995) although some systems also have objectives of making specific environmental improvements as well (Kangun and Polonsky 1995, Blackshall 2000). If the claimed benefits do not matter to consumers, or they do not believe these claims, then there is minimal benefit in adopting eco-labelling. Further complicating the process is the fact that the credibility of the label developer will also influence how consumers evaluate it (Mendleson and Polonsky 1995). For example, while the Forest Stewardship Council’s FSC logo may be respected, the Sustainable Forest Initiative logo (SFI) has been criticised by a range of environmental organizations for being misleading (RainForest Action Network 2003).

The source of eco-labelling claims may be roughly grouped into three broad areas, first, second and third party sourcing (Prudenco 1996). First party programs or self-declaration labels are made by the producers, distributors, and other members of the supply chain. Second party programs involve group certifications and generally emanate from trade associations that are related to the product class in question. In both first party and second party claims there are benefits in protecting the firm’s interest, as those developing the programs benefit from their use (Golan et al. 2001, Stoeckle 2004). As such, these programs are not seen as objective (as occurred with the SFI program).

Third party programs are independently monitored by external groups (government, non-profit, or other private sector organizations). In this way the environmental integrity is protected by those maintaining the program, which should increase the program’s credibility in the market place (Naidu 1997, Ozanne 2003, Prudencio 1996). Of course there might be conflict between the objectives of those licensing the labelling and those seeking to be labelled. Maier and Finger (2001) found that there was conflict between a Swiss retailer and an organic labelling body, as the retailer did not see organic issues as being critical to all their activities and thus was not willing to make all the changes required.

The type of eco-label not only varies by who develops and manages it, but also by the scope of issues considered. Logos might relate to narrowly defined issues including environmental performance during use (“produces no greenhouse gases”) to the production process itself (“made with recycled materials”) (Barham 2002, de Boer 2003, Scammon and Mayer 1995). Whereas in other cases the eco-labelling might apply to the overall production process as occurs in many organic-labelling systems (Eco Labels 2004, McEachern and McClean 2002). However, in other cases these programs might cover a much broader set of issues. For example the Better Banana Program relates not only to
environmental issues but also includes issues associated with labour practices (Winthrop 1999). It is therefore critical that those who design eco-labelling programs, and those who use eco-labelling programs, consider the scope of these programs to ensure that there is a positive consumer response (Alberini and Segerson 2002, Kaberger 2003, Roarty 1997).

Toyne, Cowell and Mech (2004) have identified different types of environmental labelling, certification and branding initiatives in the agri-food sector. Their overview of environmental assurance schemes included labels and brands developed by individual farmer-entrepreneurs, labels and brands developed by farmer associations, regional labels and brands, independent third-party certification for environmental, food safety and quality assurance, and supermarket brands (Toyne, Cowell and Mech 2004). We consider eco-labelling from performance-based, processed-based, and supply chain perspectives. We will consider eco-labelling from the broader perspective incorporating life-cycle analysis (LCA) as well as from an environmental labelling perspective which Toyne, Cowell and Mech (2004) identify as labelling to denote any type of environmental information provided to consumers.

**Performance-based eco-labelling**

An eco-labelling scheme based on product performance, such as labels claiming biodegradability of packaging, sustainability in production processes or non-pollutant aspects of product usage, will require certain trust on the part of the consumer. In most cases it will be impossible for consumers to ascertain the existence of technical attributes or characteristics (Carlson et al. 1996). For example, can consumers independently test food to determine levels of pesticides used? Or do they have the ability to determine whether growing practices are sustainable? In some cases consumers might not even be able to identify all the environmental characteristics of products. For example, would consumers consider the application of drip irrigation with regard to growing food products? Consumers may also be unaware of the various environmental hazards posed by a product’s failure to deliver in some environmental areas (Bech-Larsen 1996, Bentley 1995, MacNamara and Pahl 2003).

While consumers may be incompletely informed as to the actual environmental impact of claimed product performance, research has shown that they are increasingly concerned about environmental issues. This suggests that producers need consider the consumer-perceived environmental consequences of their marketing efforts (Beamon 1999, Bech-Larsen 1996, Bigsby and Ozanne 2002, Dosi and Moretto 2001, MacNamara and Pahl 2003, Ozanne and Vlosky 2003, Peattie 2001, Titterington et al. 1996).

When consumers are concerned about an environmental performance, but are not fully informed or able to measure environmental performance, third party certification might be an appropriate approach to eco-labelling, as the external body’s credibility enhances consumer confidence (McEachern and McClean 2002, Mendleson and Polonsky 1995). This might be why external organic eco-label programs appear to have been successful, as they certify performance that consumers cannot evaluate (Binney et al. 2000). The multiplicity of such programs will cause consumer confusion. For example, there are 54 different organic labelling programs listed on the Consumer Union’s eco-logo web site (Eco-Label 2004).

Thus, when making any performance-based claim it is important that these claims are verifiable (Eco-Labels 2004, FTC 1995, Carlson et al. 1996). For example, there has been ongoing criticism that garbage bags claimed to be biodegradable when exposed to sunlight, may not be technically supported, as landfills do not expose these products to sun or air (Mendleson and Polonsky 1996, Ottman 1998). Thus this performance-based claim is potentially spurious (Ottman 1998).

The scope of eco-performance labelling is wide spread. While it has been extensively used in the organic food area (Eco Labels 2004), it has also been used in areas such as tourism, where a range of bodies, have established global eco-tourism certification schemes (Font and Tribe 2001, Ottman 1998).
In many cases the performance-based logos examine specific outcomes such as reduction in the use of pesticides. These logos also can relate to system wide activities, as well. For example, the Better Banana’s program deals with a complex range of issues related to the complete process of production (Winthorop 1999), as does EUREPGAP certification dealing with green coffee (Eurepgap 2004).

**Process-based eco-labelling**


This sort of assessment might represent more difficulties for consumers as the programs relate to a cross section of issues relating to complex environmental impacts across a diverse set of activities. For example, greening the retailing process needs to be concerned with not only what goods are sold, but also must deal with store design, waste disposal and energy usage (Nadel 1999). It will be difficult for consumers to evaluate all environmental issues across any system, let alone be able to aggregate the environmental impact across activities.

Consumers, whilst relatively under-educated regarding the true environmental consequences of production process eco-impacts, nonetheless are interested and concerned about these issues. To illustrate, several studies have indicated that environmental concerns regarding production ranked near point-of-origin (i.e., local vs. non-local) characteristics as primary purchase decision aids (Bigsby and Ozanne 2002, de Boer 2003, Golleau and ben Abid 2001, Kaberger 2003, Lee 1995, Titterington et al. 1996).

The Life Cycle Analysis process for food can be complex (Sustainable Agri-Food Production and Consumption Forum 2004, Vis and Standish 2003); and examining a hypothetical example for one agricultural production process highlights the issues that any eco-labelling system would need to consider. This would involve a producer considering the eco-impact of the following steps/issues, which would then need to be communicated to consumers to be valuable:

- **Land usage**: is the cropland/pastureland capable of sustaining a viable production effort? Must it lay fallow for a period of time? Ought crop rotation occur in order to maintain soil nutrient balance? Must grazing be rotated between paddocks? Is the intensity of animal grazing going to affect vegetation cover or soil health?

- **Water usage**: are the crops/animals to be raised dependent on natural or human-supplied water sources? Does local precipitation provide an adequate supply or will water supplementation be necessary? What erosion/runoff factors need be considered, especially affecting waterways, the local water table, landscape, soil recovery period, and other nearby farms?

- **Feed/fertilizer usage**: is there adequate feed/nutrient in the farmed area or must these be supplemented? What is the source, sustainability, and polluting index involved in supplementary feed/fertilizer? Will runoff contributions have a negative impact on the surrounding environment?

- **Pest/disease control**: is the use of pesticides/herbicides excessive, or necessary and desirable, or would a program involving the introduction of natural predators be environmentally preferable? Will inoculations or dietary supplements result in a “chemically enhanced” classification for livestock production?
• Pollution production: will the livestock produce inappropriate amounts of effluent (solid wastes, liquid wastes, methane/other gaseous wastes), and can the waste stream be re-utilized? Will the carbon dioxide/oxygen plant interchange affect local conditions?

• Harvesting: how much energy is expended during crop harvest? Are there environmentally preferable methods of harvesting crops?

• Shipping and handling: how much energy is required for on-site storage? How will the produce be picked up, handled, shipped, delivered, and stored by shippers, wholesalers, retailers, and other supply chain intermediaries?

• End use: how will the product be packaged? Will non-recyclable or pollutive presentation methods detract from the overall environmental emphasis? How much effort is required by the consumer in the effort to minimize overall environmental impact and complete a “cradle to grave” commitment to decreasing the environmental footprint?

Complex LCA labelling or whole of life process schemes require extensive commitment by all those involved in the production and distribution process (Miettinen and Hämäläinen 1997). The Better Banana scheme comprised 19 pages of criteria that need to be meet for bananas to be certified (RainForest Alliance 2004). A collaborative systems approach is critical for developing such life cycles approaches, which is beyond the control of individual producers and requires commitment by multiple members of a supply chain (van der Grijp and den Hond 1999).

Eco-Labelling and the Supply Chain

A systems approach to the eco-labelling of food and other products requires the involvement of multiple stakeholders as one party’s actions affect others’ environmental performance (Zhang et al. 1999, van der Grijp and den Hond 1999). The stakeholders that need to be involved in greening food activities include producers, distributors, retailers, government/public policy groups, non-governmental organisations (NGOs) or special interest groups (SIGs) and consumers (Blackshaw 2000, Walley et al. 2000).

We will now discuss the potential role of several of the supply chain members in this greening process focusing on food chains as well some potential positive and negative implications of eco-labelling on stakeholders. First, however, an approach to the concept of an eco-conscious supply chain might allow a better understanding of the situation, before discussing other stakeholders who may have impact on the desirability of eco-labelling (van der Grijp and den Hond 1999).

Traditional and Extended Supply Chain

A traditional supply chain for goods might start with the supply of raw materials being introduced to the manufacturing process, with the finished product delivered to consumers via distributors, retailers, or a combination of the two (Vis and Standish 2003, van der Grijp and den Hond 1999, Simms 1992). The concept of an extended supply chain adds to this integrated manufacturing process, concerned mainly with the movement of goods, towards consideration of the immediate and long-term environmental impact of the product and the process utilised to produce it (Business for Social Responsibility 2001, Zhang et al. 1999). At each stage of the supply chain, product and process consideration allows an organization to incorporate environmental objectives into the operational framework (van der Grijp and den Hond 1999), which ideally will positively improve the corporate returns through increased sales, reputation or profits (Business for Social Responsibility 2001, Menon and Menon 1997). These benefits, from a financial standpoint, come from reductions in product life cycle costs as well as from a reduction in short and long-term liability costs (Beamon 1999, Porter and van der Linde 1995).

Further benefits that might accrue from such a departure from the traditional manufacturing-focussed supply chain include the reduction of waste materials at various stages of a production/supply process
(Polonsky and Rosenburger 2001). Waste materials may be recycled and resold for profit notwithstanding their original functional identity, re-used whilst retaining that identity (a "used" version of the original), or even re-manufactured back into the process, possibly allowing for the inclusion of improved techniques (Polonsky 2002). As well, waste stream energies may be targeted for re-utilisation, thus reducing energy input costs (Beamonn 1999, Clift and Wright 2000, Ottman 1998).

Integration of environmental issues into all aspects of an extended supply chain may allow a producer to exert increased control over stages and actors in their business relationships, thereby allowing demonstrable conviction, should they choose to eco-label all or part of the product or process (Backshall 2000, Business for Social Responsibility 2001). The use of eco-labelling may add to a more positive corporate image in the minds of consumers and end-users, and potentially represent a competitive advantage or point of differentiation in many industries (Carlson et al. 1997, Morris et al. 1995, Tails et al. 2002).

However, will any organization have complete control over all aspects of an extended supply chain and be able to into account environmental impacts at each stage of a raw materials – goods to market – process? In some situations macro environmental issues are managed and regulated by governmental bodies that take responsibility for making these decisions (OECD 1991, van der Grijp and den Hond 1999). However, in voluntary supply systems the environmental oversight may be more problematic even when there are clearly defined standards such as ISO14001 (Business for Social Responsibility 2001) or other voluntary environmental programs (Eco-Label 2004).

The following subsections briefly examine the various stakeholders in the supply chain, and many of the current and potential actors involved (for example, as have been defined in Walley et al. 2000).

**Suppliers**

Suppliers of raw materials for manufacturing may choose to augment their core product, for instance livestock feed or coffee beans or timber, by claiming that these raw materials were produced in an environmentally sustainable manner considering a wide rage of ethical production issues (Winthrop 1999). A timber supplier might label the wood supplied to manufacturers of cabinets as sustainably derived, from purpose-grown trees, or even from controlled growing environments where soil degradation, water run-off and wildlife habitat are taken into account. Feed producers may indicate that their products are the result of ecologically-motivated crop rotations that require reduced irrigation or are herbicide/pesticide free. Growers of coffee beans might point to their non-use of socially unacceptable harvesting methods such as child labour, or their insistence on not clearing rain forest to increase crop acreage (See Eco-label 2004 for programs including these criteria).

Assuming that such supplier eco-labelling is indeed valid, a number of potential benefits might accrue. One benefit is that suppliers participate in responsible behaviour thus minimising the negative impact of production on the environment (Winthrop 1999). Suppliers of raw materials might be able to charge eco-premiums for their produce if the foregoing is true, even using this labelling as a method of quality assurance (de Boer 2003, Ozanne and 2003). It may be that a prerequisite for doing business with certain users of raw materials requires this environmental responsibility, for example when supplying others who have adopted environmental programs such as ISO 14001 (Anonymous 1997, Mech, Low and Cole 2003). In this case one member of the supply chain, be it manufacturer or retailer or others requires all suppliers to exhibit similar environmental standards (Simms 1992). There exist a number of instances of this, like food/beverage retailers such as McDonalds to Starbucks Coffee requiring recycled/recyclable/sustainably-produced packaging for their products (Ottman 1998, Peattie 2001, Titterington et al. 1996). This could also hold true for legally required eco-labels, such as exist in the chemical industry to ensure that emission standards are met according to policy guidelines (See Eco-Label 2004).

There are potential drawbacks to eco-labelling by suppliers, which may include the long-term viability of eco-claims due to potentially questionable practices. For example the
Rainforest Alliance has criticised the Sustainable Forestry Industry logo as being misleading and not providing meaningful environmental information (Rain Forest Alliance 2003). Similar types of criticisms have been raised in regards to other eco-labels developed by suppliers.

Other concerns include potentially prohibitive costs associated with a move towards sustainable production, from the retention of experts to examine current impacts and re-design "new and improved" processes to their actual implementation (Porter and van der Linde 1995). Associated costs may include integration of non-traditional partners in the production and oversight process, such as waste-management facilities, or even interest groups (local and otherwise) who may insist upon input into the use of natural resources. The environment itself may suffer should an imminent switch to ecologically-desirable, if more costly, processes instigate an increase in ecologically-unfriendly activities prior to the enactment of more capital-intensive programmes (Dosi and Moretto 2001, Porter and van der Linde 1995).

If suppliers of raw materials choose to eco-label their products for more than idealistic motivations, it is highly likely that producers/manufacturers of finished goods are integral to this decision, as they traditionally represent perhaps the linchpin member of the supply chain (Backshall 2000).

Producers and Processors

Much environmental impact arises with regard to producers or processors who, for many products have the greatest impact on supply chain outcomes (Bhat 1995). That is if there are not responsibly produced inputs to the chain, other members may have limited ability to address eco-issues and thus apply meaningful eco-labelling. The decision for producers or processors to participate in eco-labelling their products or processes can be associated with a number of benefits as well as drawbacks.

From a market-competitive standpoint environmentally sound business practices, as indicated by eco-labelling, can take advantage of the increased consumer interest in environmental issues (Barham 2002, Beamon 1999, de Boer 2003, Clift and Wright 2000, Kaberger 2003, Roarty 1997). This might lead to a perceived competitive advantage (Porter and van der Linde 1995) and thus product differentiation (such as occurs in the Organic food sector). Production based eco-labelling may also serve as a price point differential (McEachern, and McClean 2002). Eco-labelling may also have a positioning benefit in regards to raising the profile of producers (Dosi and Moretto 2001, Lonergan et al. 2001).

In utilising labelling as a source of product, process, and/or performance information, the producer or processor is partnering with other members of the supply chain to address current socio-economic and philosophical trends as reflected in increasing concern for the environment (Van der Grijp and den Hond 1999).

From a product and/or process approach, proactive environmentally sound business may yield direct benefits to the producer. These include cost savings associated with reductions in the use of inputs to production (Vis and Standish 2003). Cleaner technologies may result in the decrease of health and safety concerns for employees, the more efficient utilisation of resources and raw materials via reduced waste and reduced waste disposal costs, and overall reduction in both external and internal liabilities (Porter and van der Linde 1995, Winthrop 1999). When such practices are highlighted by use of eco-labelling, a firm may be able to more effectively attract and maintain customer and employee loyalty (Buccholz 1999, Ottman 1998). All these factors reflect economic benefits for the producers or processors (de Boer 2003).

Eco-labelling might also aid a producer's or a processor’s ability to enter supply chains or countries that require specific levels of environmental performance such as ISO 14000. This can occur in other ways as well with some markets restricting the use of the use of growth hormones and/or other genetic modifications to foodstuffs (Grolleau and ben Abid 2001). In this case eco-labels serve to allow producers access to markets, that non-labelled or certified products may not enjoy.
There do, however, also exist a number of possible pitfalls associated with producers using eco-logos and these need to be considered prior to adapting eco-labelling. Given that some eco-logos relate to overall life-cycle processes it may be difficult for producers to control all their channel members’ eco-activities (van der Grijp and den Hond 1999). The mapping of cradle to grave environmental activities is also complex and might be beyond the abilities of individual producers (Miettinen and Hämäläinen 1997). In this regard the integrity of the producers’ reputation is dependent on their suppliers’ performance and failures of suppliers to perform will harm the producers image (Polonsky 1999). One possible solution would be to have external eco-labels that are verified by appropriate organisations, which may assist producers, although this usually comes at a cost.

Simply complying with cradle to grave activities might result in increased costs for producers. For example, there might be expensive costs and operational complexities associated with producers if they are expected to operate reverse logistic systems to manage waste streams (Beamon 1999, Clift and Wright 2000, Peattie 2001).

Producers and processors may be unable to adequately control all stages of the supply chain and thus choose to eco-label only portions their activities. While this would in some ways ensure that the information provided is accurate, it does potentially open the organisation to criticism, as there may be other supply chain components that are less responsible. For example, disposable diapers might be more environmentally friendly than the cloth alternative in regards to water usage, but are less responsible in regards to production and waste issues (Clift and Wright 2000, Paulos 1998).

There is also the potential for producers and processors to have eco-labels associated with environmental issues that are of little concern to consumers or end users. While these may have benefits for the environment, there may not be an increased demand from producers or other organisations (de Boer 2003, Stoeckl 2004). That is these eco-logos would not result in a demand-driven competitive advantage (Peattie 2001). These programs may still be useful for producers, or others in the supply system, if they want to educate consumers or increase environmental efficiency (Porter and van der Linde 1995). In this way the logos are designed not simply to provide market based outcomes.

Of course the application of eco-logos would also be dependent on the user’s image within the community. It may be difficult to eco-label a product if the claimant firm has been the subject of negative publicity regarding past environmentally unfriendly behaviour, or other business practices that have had negative social impacts. For example, Exxon Corporation would have difficulty claiming environmental responsibility after the huge oil spill from the Exxon Valdez tanker in Alaska, as would Union Carbide following the Bhopal gas leak (Peattie 2001, Piascik et al. 1998).

Summarising this discussion, eco-labelling may hold competitive promise for producers or processors if this strategy is valid, reliable, and takes into account a number of impact factors which may be beyond their direct control. The success of an eco-label program may hinge, in part, upon the firm’s ability to manage its overall environmental footprint, which in turn can limit the ability to communicate environmental commitment portion to interested audiences. This may also hold true for intermediate supply chain members, such as wholesalers, distributors, and retailers, who attempt to engage in eco-labelling.

**Wholesalers/Distributors/Retailers**

As intermediate members of the supply chain, wholesalers, distributors and retailers of eco-labelled products may not be in a position to influence the validity of claimed environmental benefits. Channel power may, however, play a role in influencing other parties’ decisions to collaborate on an eco-labelling strategy. For example Starbucks Coffee requires that suppliers conform to company eco-standards of sustainable sourcing, recyclability, and similar considerations. There are several examples of European food retailers developing environmental products (Van der Grijp and den Hond 1999). For example, the Billa/Merkur group in Austria and Germany developed an extensive...
line of environmental focused food products, which were exceptionally successful (Grabner-Krauter and Schwarz-Musch 1999). Part of this company’s success may have been related to developing the product at the right time, with regard to consumer interest. It may also be related to the fact that store based brands are generally better regarded in Europe than in other regions (Erdem et al. 2004). In another case, Tesco and Sainsburys have been very successful in the marketing their store brands of food in the UK (Husson 2002) as well as environmentally labelled food products, although these food products tend to be organically focused (Van der Grijp and de Hond 1999). The role of store brands might be problematic for Australia retailers, as store brands are not as successful in attracting market share in Australia as they have been in Europe. This might reflect that store brands are in an earlier stage of development in Australia, thus these might grow in popularity in the future.

In some situations intermediaries might introduce eco-labelled products as a subset of their total offerings. They might have a selection of eco-labelled products rather than shifting all corporate activities to being green (Anonymous 1990, Grabner-Krauter and Schwarz-Musch 1999, Van der Grijp and den Hond 1999). This strategy allows intermediaries to target different sets of consumers. However, it might result in green consumers viewing firms as being hypocritical, whereby one set of products are “responsible” alongside traditionally less eco-friendly products (Polonsky 2002). The complexity of greening the whole retailing experience means that food stores need to change a range of practices and need to consider how even support activities (waste disposal, store design etc) impact on the environment (Nadel 1999).

The motivation to green activities by intermediaries has often been driven by customer and consumer demand (Bjørner 2004, McEachern and McClean 2002, Roe et al. 2001, Thogersen 1999). For example, consumers have sought out alternatives to traditional goods, such as phosphate-free detergents, recycled paper products, sustainably produced wood and other building materials, and organically grown foodstuffs. The question of how much emphasise these goods are given in the supply systems will vary based on the demand and any price premiums, which in turn would contribute to shelf space allocation (Bigsby and Ozanne 2002, Kaberger 2003, Otman 1998, Paulos 1998, Roarty 1997). Carrying some green products might allow intermediaries to meet green consumers’ expectations, while shifting responsibility of verification of environmental attributes back to producers, manufacturers and third party certification programs. Having an integrated retail system that supports green activities would involve substantial investment and involvement by intermediaries (Van der Grijp and den Hond 1999).

Some retailers have sought to adopt a green positioning for all their activities, although in the food sector these tend to be more specialized retailers. For example Ben & Jerrys Ice Cream has incorporated social responsibility as a key plank to their business activities (Dennis et al. 1998). In the general retailing sector the most recognised green retailer is The Body Shop, which touts environmental and social responsibility by itself and its suppliers (Dennis and Neck 1998). In this case The Body Shop has taken on the role of verifying eco-labels, as well as the technical performance of the products, similar to the source producers. Thus the credibility of The Body Shop is what makes or breaks the eco-branding strategy (Peattie 2001). The complexities of environmental issues, the lack organisational control and concern about eco-positioning the firm might all contribute to a reluctance for intermediaries to take on a whole scale shifts in eco-orientation, including eco-labelling.

Retailers are likely to be more willing to adopt eco-labelling when it is consumer-driven (for example as occurred with organic produce) and or when backed by legislative support (for example, the reverse logistic systems in Germany) (Simms 1992). In this way it appears that channel intermediaries are dependent upon supply and demand conditions in regard to their support for eco-issues. However there are examples of where individual retailers have positioned themselves as green by incorporated green issues into activities (Van der Grijp and den Hond 1999).

Consumers

We have previously discussed consumers’ greening behaviour in some detail, but will again refer to
issues associated with the adoption of eco-labels. Consumers’ response to eco-marketing has been equivocal with regard to eco-labelling claims, ranging from acceptance of assertions on faith to distrust of so-called greenwash or non-credible claims of environmental responsibility on the part of the purveyor of the product (Polonsky et al. 2002). “Over claiming” has resulted in consumers generally being wary and cynical of green claims (Davis 1993). Nonetheless, consumers seem to have a willingness to purchase goods that are evidently produced in an environmentally or ecologically sensitive manner (Paulos 1998).

Consumers see well-defined eco-labels as providing valuable information (FTC 1995, Latvala and Kola 2000). Within the food industry consumers appear to have an appreciation of a range of environmental issues (McEachern and McClean 2002). However, consumers wish to ensure that environmental information delivered allows them to evaluate the real environmental impact of products (FTC 1995, Imkamp 2000, Peattie 2001).

It is important that consumers have confidence in claims being made. There is more consumer confidence in third party certifications than in company or industry certifications; third party certifications have been shown to be much more consumer-credible than first or second party claims (Binney et al. 2000, Bjørner et al. 2004, Ozanne and Vlosky 2003, Tails et al. 2002). Consumers, however, do not follow any labels blindly and governmental regulation of information ensures that consumer information is accurate or at least minimizes misleading information (FTC 1995, Eco-Label 2004).

For consumers, eco-labels hold a number of advantages, primarily as an aid to purchase decisions (Carlson et al. 1996, Prudencio 1996). From a buyer's perspective, shifts in motivations might occur because of an intrinsic motivation to “do the right thing” (Thogerson 1999). In this way eco-labels provide an attribute of differentiation (D’Souza 2000). Consumer evaluation of eco-labelled products is becoming more sophisticated and consumers more easily understand or perceive the environmental safety of a product labels (Maronick and Andrews 1999). As such, when consumers are exposed to environmental information they do not accept it blindly, but want to have this information explained before they are willing to use it to make decisions (Polonsky et al. 2002). This may backfire on firms if compulsory eco-labelling, as with genetically modified foodstuffs, causes the consumer to view the product as less natural or less green” (MacPherson et al. 2000).

It appears that some caution is called for when considering consumers’ response to eco-labelled products. The consumer is more sophisticated, more cynical, and leans toward more, rather than less, green product information.

**Special Interest Groups**

Special interest groups (SIGs) have had several obvious impacts on eco-labelling, and may have the ability to exert pressure for full-disclosure eco-labelling on most other stakeholders in the process, if their influence is supported or understood by the consumer (Ottman 1998). This may take the form of consumer representation or education of the issue at hand (Mendleson and Polonsky 1995).

Special interest groups are credited with being the driving impetus behind the development of a code of practice and labelling scheme for Dolphin safe tuna (D’Souza 2000). Other special interest groups have also facilitated the development of labelling programs for environmentally friendly power generation (Roe et al. 2001). In the broader context special interest groups also have become involved in directly endorsing specific products and thus their credibility is transferred to products (Mendleson and Polonsky 1995). For example the Australian Conservation Foundation has endorsed a range of products including laser printers (Mendleson and Polonsky 1995). Special interest groups also have taken the role of acting as a watch dog for the acceptability of eco-labelling programs (Eco-Label 2004) and, in some cases, raise concerns with specific types of programs (Rain Forest Alliance 2003).

Special interest group impact, or reaction, is perhaps an important consideration when evaluating the
opportunity to eco-label. It appears that the fuller the disclosure of information on the eco-label, the more likely it is that special interest groups will be willing to work with, rather than against, eco-claiming producers (Roe et al. 2001). It appears that special interest groups, by definition, may have the impetus for deeper understanding of a particular issue – be it old-growth timber logging or CFC-laden aerosols – and thus be in a position to educate consumers and to pressure legislative bodies (Mendleson and Polonsky 1995). Most eco-labelling programs need to consider the role of special interest groups.

**Summary**

In a survey of the expectations and attitudes of members of various Australian environmental groups in relation to pastoral production Longworth and James (2004) found these respondents had a high degree of awareness of environmental issues associated with grazing, including the loss and removal of native vegetation, erosion and soil loss associated with stock activity, grazing unsustainably and overstocking, the detrimental effects on habitat and biodiversity, and the poor use of water resources. However, these respondents were also sceptical about environmental-care claims.

Toyne, Cowell and Mech (2004) have noted that the potential and practicalities of environmental labelling and branding schemes for food and fibre products to drive environmental improvement in agriculture via the incentive of consumer-driven market benefits is limited. They have observed that while environmental labelling and branding schemes hold some promise to help farmers and food producers address some environmental and natural resource management issues, it is unrealistic to view environmental labelling and branding schemes as an environmental management panacea.

We turn now to an investigation of the perceived Australian realities of eco-labelling for food that might be asserted to be sustainably produced.
Methodology

A central question in this study was whether businesses and their customers understand or adequately differentiate between food which might be labelled as “organic products”, “green products”, “produced in an environmentally sustainable manner”, or “environmentally friendly”. This is an important question for two reasons.

Firstly, most of these descriptors or concepts have been widely used in past studies, in the popular press, by environmentalists, and authors of various reports (including studies commissioned by industry and R&D corporations). For example, past marketing programs initiated by government agencies such as Dairy Australia, and Horticulture Australia have portrayed food produced in Australia as being “clean and green”. Do these promotional messages, for example, convey to the target market that the food is processed under sustainable or environmentally friendly protocols or that the foods were produced with little or no use of chemical fertilisers, pesticides or artificial enhancers? As a result of observations such as these it was important to establish whether descriptors such as “organic products”, “green products”, “produced in an environmentally sustainable manner”, and “environmentally friendly” conveyed anything particular to key informants in food companies. In addition, we sought to establish from key informants whether, based on their market understanding, they perceived these terms had any coherent meaning for food customers.

A second reason for determining whether key informants in industry had clear perceptions of what each of these descriptors meant was to assess the importance of the associated production and marketing protocols from a business opportunity or corporate responsibility perspective. It was postulated that the more clearly a key informant was able to explain the different protocols and differentiate between different protocols, the more important is the protocol to the industry. The responses were cross checked and validated by direct questions on what actions and responses the business, and customers of the business, undertook in relation to the marketing of organic produce, green produce, sustainable produce, or environmentally friendly produce.

Specifically, the objective of the interviews was to elucidate whether:

- each of the terms organic production and marketing, green production and marketing, sustainable production and marketing, and environmentally friendly production and marketing demonstrated or implied differences in beliefs regarding product characteristics, product attributes and product qualities to the interviewee
- the interviewee believed that each of these terms demonstrated or implied differences in product characteristics, product attributes and product qualities to the customers of the business; and
- there were advantages in labelling and marketing the products of the firms as being organic products or green products or sustainable produced goods, or environmentally friendly goods.

The Interviewees

The persons selected for interview were “key informants” in food companies. A schedule of the individuals interviewed, their position in the company and the activities of the company are summarised in Table 2. The information solicited from these individuals was designed to examine their views regarding the potential viability of a food related eco-labelling scheme.

Most interviewees, especially interviewees from small-to-medium scale companies, were the owners and managing directors of the enterprises. In the case of larger organisations, the individuals interviewed were senior managers. These individuals were identified by discussions with personnel within the company and by network contacts in the industry who had information on the individuals within a company most likely to be knowledgeable of the issues being explored.
<table>
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<tr>
<th></th>
<th>Company</th>
<th>Person Interviewed</th>
<th>Description of Business</th>
<th>Position in Value Chain</th>
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<tbody>
<tr>
<td>1</td>
<td>Dairy Bell Ice Cream (Aust.) Pty Ltd</td>
<td>John Stanford General Manager</td>
<td>Dairy Bell produces under its proprietary brands and also contract manufactures private label brands for supermarket chains. The company also owns and operates its own retail outlets.</td>
<td>Manufacturer, distributor and retailer</td>
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<tr>
<td>2</td>
<td>Toyota Tsusho (Australasia) Pty Ltd</td>
<td>Stuart Griffiths Division Manager (Life Products &amp; Service Division)</td>
<td>Australian subsidiary of an international trading house of the Japanese company Toyota. Toyota Tusho procures food and other products globally and markets these to retail and food service outlets throughout the world. The company owns and operates a number of food service outlets in Japan.</td>
<td>Distributor</td>
</tr>
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<td>3</td>
<td>Melrose Health Supplies Pty Ltd</td>
<td>Geoff Steinicke Managing Director</td>
<td>Manufacturer, importer and exporter of a range of health foods and other products. Sells through supermarket chains but has a much stronger presence in health food shops and delis.</td>
<td>Manufacturer and distributor</td>
</tr>
<tr>
<td>4</td>
<td>Jensen’s Choice Foods</td>
<td>Stig K. Jensen Managing Director</td>
<td>Manufacturer of a range of culinary products including pasta and spaghetti sauces under its own brand name. The company also contract packs private label products for supermarket chains and has a significant and growing export market.</td>
<td>Manufacturer, distributor, contract packer and exporter</td>
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<td>Company</td>
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<td>5</td>
<td>Berri Limited</td>
<td>Bill Kelsall</td>
<td>Manufacturer and distributor of a range of fruit juices under its proprietary brand and also contract packs private labels for large supermarket chains.</td>
<td>Manufacturer, contract packer and distributor</td>
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<td>Marketing Director</td>
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<td>6</td>
<td>Blue Lotus Foods Pty Ltd</td>
<td>Su Beng Eu</td>
<td>Manufacturer and distributor of a range of soymilk based food products to supermarkets and health food shops.</td>
<td>Manufacturer and distributor</td>
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<td>Managing Director</td>
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<td>7</td>
<td>Scalzo Food Industries</td>
<td>Dim Sakkas</td>
<td>Importer, manufacturer and distributor of nuts and other food products to supermarkets and health food shops.</td>
<td>Manufacturer and distributor</td>
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<td></td>
<td></td>
<td>General Manager</td>
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<td>(Retail)</td>
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<td>8</td>
<td>Sealane Food Service</td>
<td>Shun King Li</td>
<td>Importer, exporter and distributor of food products to retail and food service outlets.</td>
<td>Distributor, importer and exporter</td>
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<td>Manager</td>
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<td>9</td>
<td>Food Service Consultants Australia Pty Ltd</td>
<td>Tim Smallwood</td>
<td>Consultants to hotels and food service outlets in developing kitchens and other food service facilities.</td>
<td>Consultant</td>
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<td>Director</td>
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<td>10</td>
<td>Poseidon and Black Swan Dips</td>
<td>John Batzias</td>
<td>Manufacturer of a range of dips and spreads and distributor to supermarkets and other retail outlets.</td>
<td>Manufacturer and distributor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technical Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nick Kharsas</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marketing Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Ancient Distributors Pty Ltd</td>
<td>Trevor Mayhew</td>
<td>Distributor of food products.</td>
<td>Distributor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Produce One</td>
<td>David Costas</td>
<td>Contract grower, packer and distributor of fruits and vegetables.</td>
<td>Producer and distributor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Managing Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Addamo Fresh Pty Ltd</td>
<td>George Miltiado</td>
<td>Contract grower, packer and distributor of fruits and vegetables.</td>
<td>Producer and distributor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Managing Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company</td>
<td>Person Interviewed</td>
<td>Description of Business</td>
<td>Position in Value Chain</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------</td>
<td>-------------------------</td>
<td>-------------------------</td>
<td></td>
</tr>
<tr>
<td>14 Coles Myer Pty Ltd</td>
<td>Tim Hockings</td>
<td>Retailer</td>
<td>Food retail and wholesale</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Business Development Manager</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Woolworths Pty Ltd</td>
<td>Stephen Bate</td>
<td>Retailer</td>
<td>Food retail and wholesaler</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Manager (Fresh Food)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Michael Batycki</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Senior Business Manager (Produce)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 The Christou Group</td>
<td>Nick Christou</td>
<td>Contract grower, packer and distributor of fruits and vegetables</td>
<td>Producer and distributor</td>
<td></td>
</tr>
<tr>
<td>17 Horticulture Australia Ltd</td>
<td>Richard Bennet, Professional Services Officer</td>
<td>Industry R&amp;D and Marketing</td>
<td>R&amp;D facilitator</td>
<td></td>
</tr>
</tbody>
</table>

We now examine the understandings and expectations of those involved in the food supply chain in relation to food and related products produced in an environmentally friendly way.
Findings of Key Informant Interviews

This chapter analyses and compares the attitudes, beliefs, practices and the understanding of interviewees in the food industry to sustainably produced food and sustainable marketing issues.

Clarity of Terminology and Concepts

Notwithstanding the initial contentions of most interviewees that each of the terms is clearly different with respect to farming and production processes, and their perceptions of product characteristics and attributes, the analysis of responses indicates that, with the sole exception of the term “organic goods”, most interviewees could not clearly canvass the differences between the other terms. At some stages in the interview nearly all interviewees indicated that, at best, the terms are sub-sets of one another (Table 3).

<table>
<thead>
<tr>
<th>Production Systems</th>
<th>Clearly Different</th>
<th>Somewhat Different</th>
<th>Subset</th>
<th>Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td>15</td>
<td>-</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>Organic vs. Green</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Organic vs. Sustainable</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Organic vs. Environmentally Friendly</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>12</td>
</tr>
</tbody>
</table>

The comments of a senior executive of a large food company demonstrate a characteristic response from many of the interviewees. The company did not manufacture any products classed as organic, green, sustainable or environmentally friendly. The executive started with the position that each of the terms conveyed a significantly different type of production or product characteristic or attribute; and shortly thereafter indicated that the descriptives are subsets of one another:

... I will treat them all as quite different ... organic is a particular prescriptive set of requirements ... sustainable ... can be repeated on an on-going basis and ... not depleting our resource by using it ... green ... what we are doing is not harmful to the environment ... environmentally friendly ... I might choose to grow fruit and I might do it in a way it is sustainable but I might be using chemicals ... that have some residual effects on the environment ... so while it might be sustainable ... I might not be able to continue doing it for the foreseeable future ... green would say that what we are doing is not harmful to the environment. ... so I would see them all slightly differently ... I would say that organic is a subset of green and I would think that mostly organic would be in itself a subset of sustainable ... green is a subset of sustainable ...

Most interviewees proposed that the term “organic products” was at the top of the hierarchy in that organic products are farmed and processed without the use of chemical fertilisers and pesticides. They asserted that organic products are subject to strict inspection and accreditation regimes and therefore are clearly understood by them and their customers to be produced according to rigorous protocols (Table 4). In contrast to this belief, most interviewees observed that, to their knowledge, “sustainable” or “environmentally friendly” categorisation was neither supported by any accreditation, quality assurance or legislative controls that resolved consumer or environmentalist
concerns nor incorporated any accreditation, quality assurance or legislative controls that authenticated that the production process is sustainable or environmentally friendly. A number of interviewees used the terms sustainable production and environmentally friendly production interchangeably and some even contended that HACCP and ISO14001 accreditation involved conforming to various elements of sustainable or environmentally friendly production protocols.

Table 4
Beliefs and Perceptions of the Attributes of Production Systems

<table>
<thead>
<tr>
<th>Production Systems</th>
<th>Strict Protocols (1)</th>
<th>Consumer Awareness (2)</th>
<th>Accreditation (3)</th>
<th>All (1+2+3)</th>
<th>None (1+2+3)</th>
<th>Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td>15</td>
<td>9</td>
<td>15</td>
<td>9</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>Green</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Sustainable</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Environmentally Friendly</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>15</td>
</tr>
</tbody>
</table>

Notwithstanding this position, even with organically produced foods some interviewees expressed concern and lack of confidence in the accreditation process. These interviewees indicated that there were a number of accrediting bodies and that the value and credibility of organic status was diminished by the fact that there was no single, industry-wide accrediting agency. Perhaps, the authenticity and beliefs regarding labelling a product as being “organic” could be substantially enhanced if the protocols were clearer and the accreditation was managed by one highly recognisable agency. The following comments by an executive in one of the supermarket chains illustrate strongly differing views (albeit among a minority of the interviewees) that even with organic products there is potential confusion about protocols:

… tell me what is organic, what is the certification process, I mean there’s seven certification bodies in Australia for organics. The biggest issue we have here is, I want an organic product tell me what it is, tell me what I’ve got to do to ensure it is organic so that I can put it in front of a customer …

Notwithstanding the concerns about the accreditation process, a number of interviewees implied a strong belief in organic products and asserted, because of the accreditation process, it was the only descriptive label that was of value. Such beliefs were particularly strong among interviewees from four companies that produced or marketed organic goods. This sentiment is best captured by the comments of a small-to-medium scale food processor that also exports its products and contract packs non-organic products for large supermarket chains:

We label products organic but it is in effect certified organic because we are a certified organic producer … to label products green or sustainable or whatever, well it’s wishy washy … sounds great and will probably appeal to some consumers but we have not gone down that road. We will label products that are certified organic when it is manufactured, when the raw materials come from certified organic suppliers, when the process has been certified organic process and the product is truly a certified organic product.
The comments of another interviewee (from a company that manufactures and markets a small range of organic products) and a company that is currently almost completely dependent on producing mainstream products and contract packing private label products for the supermarket chains illustrate the predominant sentiments and beliefs of most interviewees:

*organic means sustainable because … organic is much broader than just not pumping poisons into the environment … much broader than not destroying the soil … organic is all about sustainable production … adoption of farming methods, processing methods that are sustainable …*

There was only one very clear dissenting opinion to this belief pattern. This interviewee indicated that, notwithstanding that organic products had many good attributes, organic products introduced problems with regard to hygiene (because of product handling systems) and product traceability.

*… traceability is going to become more and more critical and essential …the main problem with meat … is fecal contamination occurring during the slaughtering and processing. It just seems to me that thirty years ago the instances of food poisoning that could be traced back to fecal contamination of meat were quite low and now you just assume that all meat is contaminated …also with environmentally friendly or organic foods …problems … cross-contamination at the source of production … because by its very nature it’s less controlled than a mainstream production environment … for example, eggs from a chicken house compared to battery production where eggs laid comes down a conveyer system … washed with a chlorine solution … with free-range eggs again the problem of fecal matter on the eggshell … when it comes anywhere near other foodstuff there is great potential for cross-contamination … a person can just be touching an egg, picking it up …*

Most interviewees suggested that “green” was nothing more than a marketing term. The term ‘Green’ *implied* that the product was grown in a pollution free and hygienic environment, and that although the produce or product did not conform to any strict protocols (as would have been the case with organically produced goods) and was produced under an intensive or large-scale production process, it was safe and hygienic primarily because of the production and regulatory standards of the country or region. In essence, green was perceived as a country-of-origin, or region-of-origin, marketing message for Australian grown or produced goods into countries where such production and hygiene protocols were less rigorous. A characteristic response was that, “clean and green” moved away from details of the production process and offered significant advantages to the producer and marketer as it was a low cost marketing and production initiative and therefore was commercially more attractive to businesses.

Generally, the opinion was that sustainable production took cognisance of longer-term effects on the environment and considered problems such salination, soil degradation, pollution, chemical residue, loss of bio-diversity etc. that are attributed to large scale production processes. A few interviewees suggested that there was location specific interest in sustainability and environmental issues and that communities near salinised areas or degraded river systems would be more concerned about such issues than the public at large. In general, interviewees indicated that all these issues are to a large extent captured by the advantages that are canvassed for organic cultivation and production process and that it is difficult for customers to differentiate between a product labelled as “organic” and another that is labelled as “sustainably produced”. The interviewees suggested that the term “sustainably produced” is, perhaps, more applicable in large-scale cultivation or mass production to imply that protocols are in place to check on some of the damaging effects of large-scale commercial agriculture or mass production.
The general opinion was that sustainable production was a subset of organic production and that the term “environmentally friendly” production was not a very clear concept and perhaps was a term that is more applicable to non-foods rather than food products. In fact, two interviewees ventured to say that “environmentally friendly” is a superficial term and may include recycling and is a consumer-oriented concept whereas sustainability is an industry-oriented concept. The following comment by one of the interviewees captures the general sentiments of most interviewees in regard to sustainable and environmentally friendly production:

*Sustainability … far more holistic statement in respect of food … will take account of all inputs and the sustainability of the inputs … what fuel they might have used in the tractor … green …fertiliser used were natural and that the soil was treated in a natural way … organic food … no fertiliser only. … on grading organic at low level, green just a little bit above and then sustainable quite a bit above that … environmentally friendly… cloued concept*

Another interviewee elucidated the issues surrounding sustainable production and marketing, and environmentally friendly production and marketing in the following manner:

… it would depend on the product category … for something like timber it would be really meaningful. … most people would assume that in agriculture you could continue to farm a piece of land in perpetuity subject to water table not falling, salt not rising … so if you are offering me timber products or paper products … from sustainable, renewable production rather than from old growth … I will find that attractive … for products like meat or wheat, I will just assume that it was sustainable …it might matter to me that as much as possible was recyclable … I am not sure what environmentally friendly means … what it means to one and what it means to another could differ… for me to make a claim about environmental friendliness and put it on the pack, while it would be important, there would have to be an industry definition against which we can be audited …

Another food processor strongly canvassed the proposition that production processes should be environmentally friendly but then pointed out that government and industry policies did not seem to match the rhetoric and that, perhaps, this was the gap to adopting more sustainable production protocols.

… sustainability is one of the biggest challenges we have ahead of us. Is it green and sustainable because we use our scare water resources to make it green … we grow products that we shouldn’t grow in this country … in this climate … it could be possible that some people would buy something just because it has a label that says it is “Green” or “Sustainably” produced … yet quite happily hop into a car and, you know, travel one person in a car using up non-renewable resources, causing a lot of environmental damage … maybe it is a feel good factor … to be organic means green, sustainable and environmentally friendly

Several interviewees identified a further conundrum in pursuing sustainable production and marketing. This was to separate the authenticity of claims with regard to the core product and the augmented product. Interviewees indicated that they were confused as to the extent to which they had to go to justify that the product was a sustainable product. For example, if the produce or raw material was produced according to protocols that are deemed to be sustainable, what would happen during the production process (in terms of waste management, pollution control etc)? What would happen when the product is packaged in terms of the production of the packaging material and the constituents of the packaging and labelling (such as foil lining in tetra-brick packs and the ink used in the labels)? In sum, the predominant position, especially, in the few cases where the interviewee had considered a whole of chain perspective to the issue, was that the more transformed the product the more difficult it is for producers and marketers to make claims about the product conforming to sustainable or environmentally friendly production and marketing protocols.
In all cases where interviewees supported their arguments about environmentally friendly production and marketing with examples, the examples were of non-food products such as cleaning products, aerosols, minerals etc. It would appear, subconsciously, the interviewees have not considered the relevance of production and marketing in a sustainable or environmentally friendly manner with regard to the core business activity in food-production or food marketing.

Several companies including small-to-medium scale food processors demonstrated a high level of responsibility and proactive behaviour toward environmental issues and clearly demonstrated environmentally and socially responsible behaviour. For example, Dairy Bell (Australia) Ltd, with ten retail outlets in Melbourne, actively encourages customers to recycle the plastic packaging containers through recommending various household uses for containers of different sizes. The company also encourages customers to use calico string bags to carry their ice cream tubs. Growers or packers of fresh produce explained that water use and water conservation issues were becoming important in their industry and such sustainability issues were emerging as important production and marketing considerations. The Christou Group, for example, is engaged in an R&D project to use recycled water for cooling fresh produce. The supermarket chains have introduced and are increasingly adopting various quality assurance protocols that incorporate elements of sustainable and environmental controls, including the promotion of reusable shopping bags. However, pre-eminently the current emphasis in the industry is on food safety, quality and traceability issues.

**Marketing Initiatives**

Given the overwhelming response which suggests that, other than with organic products, interviewees believe that they and most of their customers cannot differentiate nor trust and value descriptives such as “green” “sustainable” or “environmentally friendly”, it is obvious that the companies do not adopt marketing programs that highlight product attributes and characteristics based on these differences. The predominant opinion is that, because of the absence of controls and accreditation, consumers would not trust such claims and that there are no competitive advantages in marketing their products as green or sustainably produced or produced according to environmentally friendly protocols. Several interviewees indicated that describing products as organic and highlighting organic accreditation delivers competitive advantages in reaching a niche market (Table 5). Many interviewees indicated that it is “very important” or “becoming important” to develop and market organic products. In contrast, only very few interviewees believe that there are competitive advantages in categorising products as “green”, “sustainable” or “environmentally friendly”. A number of interviewees indicated that sustainability and environmentally friendly categorisations could become important in the longer term.

<table>
<thead>
<tr>
<th>Production Systems</th>
<th>Very Important</th>
<th>Becoming Important</th>
<th>Not At All Important</th>
<th>Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Green</td>
<td>-</td>
<td>2</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Sustainable</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Environmentally Friendly</td>
<td>3</td>
<td>12</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

**Table 5**

*Adoption of Production System Referenced Logos or Trademarks*
Several producers, processors and even retailers reported that there was a competitive advantage in developing a range of organic products and that increasingly consumers are developing positive beliefs (health, flavour, behaviour etc) about organic products and that a small but growing number of customers are switching to organic products. Some interviewees attributed the growing market to “feel good factors” such as showcasing that the buyer decision maker (in most cases the mother) was a responsible person and was careful in what the family consumed, others indicated that food scares such as BSE and the bird flu were making consumers more concerned and agreeable to paying a premium price for more wholesome products. Two interviewees indicated that consumers believe that organic foods taste better.

Notwithstanding the positive beliefs, demand for organic products is still relatively small. Interviewees from food processing companies indicated that high production costs, diseconomies of scale and shortages of organically produced raw materials were major constraints in developing the market for processed organic products. Interviewees from the supermarket chains suggested that, while demand for organic products is increasing, their research and experience suggests that consumers are not prepared to pay the price premiums that the products need to command. The supermarket chains have, generally, not been able to market organics at competitive prices because of the high costs and the low sales volumes.

The predominant view of interviewees from all sectors of the industry was that the demand for organic products would increase and that the market share of organic products would increase from current levels of about 1 to 2 per cent to about 5 to 8 per cent in the next 20 years. Several reasons, including falling production costs, greater community concerns about food safety and health, and even generational changes, were canvassed as the reasons that would initially contribute to the growth in demand for organic foods and, in the longer-term, to the growth in demand for food that is produced according to sustainable and environmentally friendly protocols. One interviewee, in a perception shared by several other interviewees, described the changing consumer behaviour and the reasons for this behavioural change:

... it [sustainable and environmentally friendly food -production and -marketing] will become more important ... big driver would be the Generation X becoming the family people and doing the grocery buying because we know that while the baby boomers are actually about, they are the “me” generation, they are about indulging in the things that they want, about their quality of life. I think the Gen X are much more cognisant of the social cost and the environmental cost of the choices that they make ... I don't believe that there will ever be enough organic production to support the need of the community as a whole should the community want to go organic ... I think we would find the economics of that would ... hurt the country... both in terms of decreased export value and you know CPI impact from the increased cost of organic production for Australian customers...

The growers and packers of fruits and vegetables who were interviewed indicated that the aesthetics of the produce were a significant barrier to market expansion. Further, they considered that scale diseconomies and wastage influenced cost competitiveness and the ability to offer more competitive prices. The growers and packers also suggested that, as the majority of their produce is sold through open bulk displays, the opportunity to incorporate trademarks and labelling so as to differentiate their offers and develop the market for organic produce, or produce farmed according to sustainable or eco-friendly protocols, did not appear to be a commercially viable option. According to these interviewees, other than a niche market for organic produce, at present there was not much demand from customers (essentially, via the supermarket chains and green grocers) for produce that is farmed under environmentally sustainable or environmentally friendly protocols.

Most interviewees also did not see much benefit in incorporating trademarks or identifications for certifying products as being sustainably produced or produced according to environmentally friendly protocols. Interviewees canvassed that demand for such products was not strong and that such markings would increase the costs of the products because of the expense in developing production systems that conform to these protocols, initiating inspection and accreditation regimes, and meeting...
the charges for incorporating accreditation markings. The following is an example of a response to
the question regarding whether the business would consider including a trademark indicating that its
product conformed to sustainable or environmentally friendly protocols:

… *industry bodies [drawing comparison to the Heart Foundation] that have those stamps [trade marks/logos] charge you to use them … you are looking at 1 or 2 per
cent and that alters our economics enormously because our margins are small. So
another industry body, another regulatory authority … not an appealing thought.
Common definitions that would be useful but regulatory bodies just add cost to the
system …

Some interviewees suggested that a significant barrier to expanding sales of organic products (and
also goods that are sustainably produced or conformed to environmental protocols) was their inability
to reach the final customer at a competitive price. Interviewees attributed this to the power of the
supermarkets and the cost of selling through supermarkets. These interviewees indicated that the
power of the supermarkets and the cost of reaching consumers through the major supermarket chains
(listing fee, promotional offers and the bureaucracy in marketing and selling into supermarkets) was a
major constraint to them developing and marketing organic, or sustainable or environmentally
friendly, food products. Several processors claimed that knowledge of trends in comparable countries
and in-company knowledge and experience (gained by selling through independent stores, health
food stores and customer enquiries regarding why the products are not available in the supermarket
chains) has convinced them that there are opportunities to develop and market organic and, in the
longer-term, perhaps even sustainably produced food products. These companies claim to have
gained some level of success by marketing through independent stores, takeaway stores and health
food shops. They regard themselves as being unable to reach the mass market because the route to the
mass market is through the two large supermarket chains that control nearly 70% of food retail sales;
and the cost of accessing the mass market through the supermarket chains is not a commercially
viable option for these companies.

… *consumer awareness is the biggest driver … now that is balanced against the
operations area which is driven by economics … obviously legislative forces are also
important … media obviously … and then there are … lobby groups. So I guess that at
the end of the day it is the consumer awareness which is driven by a number of things
and then legislative requirements and also constraints around supply … I guess a
major force is the supermarkets…supermarkets shape what we do to a very large
extent. It is you know 90% of our business and the industry is very concentrated so
they have got an inordinate amount of power …given that what consumers can buy is a
function of what they stock, again there is significant power … now, if I have got an
organic range of spices here that I think you will find very exciting. They [supermarkets]
might say no… consumers won’t even know they exist because … they won’t be
stocked … the power of the supermarkets is enormous. Two of them control 80% of the
market …

On the other hand, it seemed that producers and processors did not undertake systematic consumer
market research whereas the supermarket chains tracked consumer activities and behaviours closely
and seemed to have good quality market intelligence. For example, the growers and packers
interviewed in this study did not assess consumer needs or trends in Australia and primarily dependent
on their customers (the resellers) to guide them in product and packaging innovations and
introductions. The packers in turn, based on the needs expressed by their reseller customers, worked
with suppliers and contract growers to meet market needs. Thus there was a structured market
intelligence flow from resellers (primarily the supermarket chains) to the packers and from the
packers to the farmers. There was little indication that market intelligence and new product
opportunities flowed from farmers to packers and from packers to the resellers. This feature in the
dissemination of market intelligence was also evident in the interviews with supermarket executives
who said that they built partnerships with suppliers and provided advice to suppliers on “ … how to
go to market, transportation, packaging, handling and insight into what customers are interested in”.

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The interviewees indicated that the next most important sources of market intelligence are overseas business contacts, followed by trade journals. The following comments by a senior executive of one of the larger food processing companies characterises the information gathering and market planning process:

*I track the trends of products and then watch to see how well the products do. … I don’t actually ask consumers because you know research is very expensive and I can never do all of the research I want to do. But I am mindful of developments especially in my category … and even in adjacent categories to see what is happening, what consumers are doing … I very much watch Canada and the United Kingdom because as consumer economy they are somewhat similar. For example, Tesco does a range of fruit and vegetables, which they pack in cornstarch trays and have developed a plastic film which is biodegradable …*

**Leadership Roles**

Interviewees had mixed opinions regarding the motivations to adopt sustainability or environmentally friendly protocols and as to whether industry, community or government should drive the initiative. Three interviewees suggested that the initiative should be government driven, three said that it should be customer driven, and four said that it should be a collaborative initiative between customers, industry and government. Most interviewees were unaware of any government initiated or supported programs to adopt sustainability or environmentally friendly protocols. Most interviewees felt that consumer education including awareness of the costs that would arise from introducing a structured and regimented environmental protocol would have to be the first step. To the question as to whether financial incentives to adopt environmental protocols would encourage its adoption, most interviewees expressed reservations that such programs may have a short-term orientation and may not be sufficiently attractive to encourage an upsurge in the adoption of sustainable or environmentally friendly production and processing systems.
Implications

The study focussed on interviewing key informants in companies engaged in all aspects of food production (farming, packing and wholesaling, distributing, importing and exporting, processing, retailing, and research and development). We asked key informants in the industry for information on the beliefs and perceptions of consumers and the findings are based on these data. The quality of the findings is necessarily compromised by several factors including (a) the majority of the key informants worked for companies that are primarily business-to-business marketers and companies that depended quite substantially on the supermarket chains for market intelligence (b) the study is based on a small sample of interviewees who were selected because of contact networks in these companies (c) there is substantial disparity in size and activities across the companies participating in this study and, because of this, there could be scale and activity induced effects on the beliefs and responses.

In view of these limitations, we emphasise that the findings of the study provide an overview of the beliefs, attitudes and responses of senior executives in food companies to issues regarding organic, green, sustainable and environmentally friendly food production. We strongly recommend that the study should be expanded to cover a larger number of companies, community groups and consumers.

The Market Limitations for “Sustainable” Food

The findings of this study concur with the conclusions in other studies (Bentley 1995; Grolleau and BenAbid 2001; Peattie 2001) that there is a no clarity regarding what a green, sustainable or environmentally friendly production system really means and what benefits these systems deliver to the consumer. The most explicit message that comes out of this study is that clear protocols, guidelines and accreditation process must be established if generic labelling is to be adopted to communicate the benefits to consumers and facilitate the market development for food products from environmentally sustainable production.

The industry's opinion is that it is expensive to develop and comply to environmental protocols, to develop and obtain environmental accreditation, and to develop systematic marketing programs for food products with environmental accreditation. It would seem that a holistic, sustainability based food production and food marketing system has not been attempted anywhere in the world. Existing production and marketing programs encompassing environmental sustainability objectives, even in the case of non-foods, are very limited in scope. Current programs highlight, for example, that the product is biodegradable, recyclable or that animal rights and bio-diversity issues were considered (for example, dolphin-free tuna) in harvesting, production and processing.

Experience with organic products, which have established production and accreditation protocols, suggest that market growth for sustainable food products, notwithstanding consumer beliefs about product benefits, will be slow and substantially constrained by low margins in the industry, high production costs arising from diseconomies of scale and wastage, and low demand. In essence, based on the experience in the organic foods sector, it would appear that the market for food products that are sustainably produced or produced in an environmentally friendly way may not be commercially viable in the short-to-medium term.

The future development of markets for food products that can authentically be asserted as sustainably produced, initially, is likely to be on a small scale. Current attempts to engage large groupings of farmers to produce to sustainable standards that will be recognised in the market place are unrealistic. On the basis of the experience of the development of the organic food market and, more importantly, based on the way that the large supermarket retailers source product in operating their fresh food supply chains, a relatively small number of food producers will initially produce food to an agreed ISO14001 standard or other EMS protocol. This fits with the supply and purchasing practice of the large supermarket retailers.
The large retailers, in order to ensure supply of food products delivered to agreed product specifications, increasingly have contractual supply arrangements with relatively few larger scale producers or supply wholesalers. The large food retailers have QA systems, applied at the production level, for fresh produce. These QA systems tend to be HACCP based and are third-party audited. The introduction of new EMSs asserting sustainable production is likely to be incremental, and in addition, to these existing supply programs.

A review of the literature regarding eco-labelling yielded several important indications. Eco-labelling can be a potential source of competitive differentiation given that consumers are likely to be increasingly interested in the environmental impact of a product when considering a purchase. However, eco-labelling involves a range of costs and potential difficulties as well.

**Benefits of Eco-labelling**

The benefits of eco-labelling will vary across the range of stakeholders. While many of the interested parties can enjoy similar benefits from this approach, the benefits for one group might result in costs to others.

Suppliers of raw materials may benefit from an eco-labelling program as a result of increased cost efficiencies through more efficient production processes (reductions in materials and reduced waste costs). There may be increased access to markets that require certain verifiable levels of ecologically friendly products and practices, and new customers may be attracted.

Producers promoting improved environmental performance or products might seek to use eco-labelling with certification procedures to increase credibility. First party eco-labelling by the relevant entity has the advantage of control of the amount and depth of information released. Second party sourcing, through industry or trade associations, may influence the direction of the industry involved. Third party certification, by independent agencies, has the advantage of outside verification of eco-claims; and consumers seem increasingly amenable to full disclosure of environmental claims when backed by credible sources. Any eco-labelling might also result in re-positioning of a firm and its activities, whereby environmental and social responsibility takes a greater emphasis in how the firm is viewed.

Greening processes serve to enhance organisational learning across the organisation and may lead to organisation-wide cost savings via the introduction of innovative, environmentally friendly processes (Porter and van der Linde 1995). This side benefit of an eco-labelling thrust may serve to highlight potential production cost savings for other areas of a firm’s product portfolio. In a similar vein, the desire to eco-label may lead to the uncovering of previously unregarded collaborators in the supply chain, and possibly expanded target market segments to augment traditional business channels.

As consumers show increased awareness and concern about the environmental impact of products purchased and consumed, an eco-labelling program will to tap into this market by responding to prevalent market forces. Thus, an eco-labelling program may lead to more appropriate market response, resource utilisation efficiencies, and be a source of competitive advantage and differentiation. It also then allows consumers to take more social responsibility for their purchases and possibly also to become more informed about the environmental impact of their consumption.

Supply chain intermediaries, such as retailers and distributors, may benefit from eco-labelling by association. As consumers become more interested in the environmental aspects of a good and bring this behavioural aspect into product evaluation, it may benefit retailers to be able to offer an eco-labelled alternative to traditionally marketed products. This may allow exposure to new market segments, with an attendant potential increase in store traffic and sales turnover. Positive store image may also accrue where customers value environmental responsibility.

Eco-labelling offers a variety of potential benefits for a number of stakeholders. Potential process savings, attraction of new market segments, the increase of available information, and competitive
differentiation are all possible benefits of an eco-labelling program.

**Drawbacks of Eco-labelling**

Eco-labelling contains potential dangers and drawbacks, for each involved party. Food producers, as suppliers of raw materials, may find that an attempt to eco-label their product involves large capital investment to engage in the necessary steps to obtain a credible or valid eco-certification. While long-term savings may be possible, the long-term product price may not be viable. Elsewhere in the supply chain it was clearly evident in the key informant interviews that price competition in the food industry is a critical determinant of commercial success. Eco-labelling may threaten a firm’s cost/price leadership and put the firm at risk of losing its price competitive advantage in the market place.

Food processors may also find eco-labelling cost prohibitive, if there is a need for extensive capital investment to modify production process methods. Few supply chain partners may able to fulfil the ecological responsibility and EMS standards required of eco-label collaborators, thus diminishing supplier choices. In broad scale, as opposed to intensive scale, agriculture it may be difficult for food producers to control all necessary environmental aspects of the production process. From a retailing perspective, sustainably produced food is more than sustainably used natural resources at the farm level. It necessarily includes sustainable practices throughout the supply chain to the point of retail; and it may embrace broader ethical considerations through all elements of the food processing chain.

Producers and processors run the risk of alienating consumers by over-claiming ecological responsibility or performance, placing them in a position of vulnerability should the product not perform to environmental specifications. Authenticated eco-labelling will require inclusion of outside parties in the production process, which may mean ceding some control to external bodies, special interest groups, governmental agencies and third party certification agencies.

For consumers there is the danger of being overwhelmed with the information provided. Most consumers are unlikely to want to take into account environmental friendliness when embarking on all purchase decisions. This information overload, or implied requirement of further research into an issue prior to product purchase, may result in rejection of certain products. The consumer also runs the risk of accepting an eco-label at face value, without adequately comprehending the full gamut of environmental impacts associated with usage of a particular good.

Eco-labelling holds a number of possible benefits for concerned parties, but may also contain a variety of drawbacks. Care will need to be taken when assessing the positive repercussions of such an approach, whilst also taking cost, control, supply availability, market viability, and competitive association considerations into account.

This project has identified a general problem that the scope of sustainability that might be captured in eco-labelling is not widely understood. In the Australian marketplace terms such as green, organic and sustainable often are used inter-changeably and these terms all can be defined to have differing coverage of issues. In particular the term “sustainable” considers broader systems and addresses issues beyond environmental concerns. In contrast the term “organic” seems to focus on a narrowly defined food related domain and, in its early development, the organic food industry did not involve extended supply chains.
Recommendations

The development of sustainable products varies across countries and within countries. In the food area it seems that organic and natural products and logos have been more widely developed and that a market for sustainably produced food is yet to develop. Those seeking to develop a market for sustainably produced food need to be mindful of the following:

- The development of store brands of environmentally friendly products relies on there being sufficient consumer demand. These products are typically promoted in ways that might be seen as positioning the goods as premium products. Such positioning may be difficult in Australia given that existing store brands are not presently positioned as premium products, although they may be in the future.

- Much of the academic literature and research has focused on narrow issues related to specific environmental activities and there has been insufficient exploration of consumers’, or intermediaries’ understanding of sustainability issues. The range of governmental and industry information is narrowly focused. We recommend that this study be expanded to cover a larger number of companies, food consumers and relevant special interest groups.

- There are many labels and logos in the market place. Any new program might not be widely accepted without regulation to ensure there is clarity in the meaning of what the label asserts. Any new scheme would need to be supported with substantial communication to consumers and others in the supply chain. It is likely to need to be externally verified to ensure that the system has credence.

- Developing a sustainability logo will require complex multi-level criteria that have application across the supply chain. Life-cycle analysis may need to be undertaken when developing a new logo to ensure that all parts of the supply chain – production, distribution, transportation, retailing, consumption and disposal processes – are sustainable.

- The development and implementation of appropriate EMSs will need to be undertaken in an incremental way and in conjunction with the way that the large supermarket retailers source produce in operating their fresh food supply chains. These procurement systems are focused on small numbers of suppliers, incorporate QA systems and usually are HACCP based and third-party audited.
Appendix

Key Informant Interview Schedule

Green Food Chain Questionnaire

The information obtained through this interview will not be attributed to interviewee or the organisation that the interviewee represents. The questionnaire is to be completed by the interviewer.

1. **Background of Respondent & Business**

1.1 Name of Organisation/Company ________________________________________________

1.2 Position of Interviewee ________________________________________________________
   *Discuss the individual’s roles, responsibilities and decision making authority in regard to issues being explored:*

1.3 Type of Business ________________________________________________________________
   Position in value-chain

1.4 Industry Sector ________________________________________________________________

1.5 Size of Company
   Estimated sales and employee numbers

1.6 Exporter/Non-Exporter _________________________________________________________
   *If exporter, countries to which exporting*

2. **Definitional Issues**

2.1 What do you understand by ‘sustainably produced’ in relation to food production?

2.2 What do you understand by the term ‘environmentally friendly’ in relation to food production?

2.3 Does the respondent perceive a difference between labelling a product as “sustainably produced” and “organic” and “environmentally friendly”?
2.4 What are the perceived differences?

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2.5 Does the respondent believe that the businesses’ constituents/target markets would like to know whether the product is (a) “sustainably produced” or (b) “organically produced” or produced in an environmentally friendly manner?

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3. Looking at Issues from the perspective of a ‘Key Informant’

3.1 How important are “sustainably produced” and/or “organically produced” and/or environmentally friendly production issues to the respondent’s business?
    Explore how the issues are currently considered/assessed within the purchasing and marketing operations of the business, explore the likely future trends across product categories and market segments, assess the importance (on a scale of “1” Totally Unimportant to “5” Extremely Important) of these issues with other purchasing and/or marketing decisions that the business would consider.

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3.2 Does the business track the trends on these issues internationally and/or local?

____________________________________________________________________

3.3 If Yes, how does the business track the trends on these issues internationally and/or locally?
    (Prompt: for example, monitoring other organizations globally, popular press, tracking studies (MR firms), industry associations or direct consumer interaction)?

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____________________________________________________________________
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3.4 What are likely short, medium and long terms trends in Australia in regard to these issues?
    Where do they see green food issues heading and why? What type of issues will be important and to whom? Have any international trends been repeated in Australia and what are some examples of these?

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3.5 What is the basis of the assessment of future trends?

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3.6 Has the business identified distinctive potential market segments for “sustainably produced” (green) food or food produced according to environmentally friendly protocols?

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3.7 What are the characteristics and features of the market segments for “green” and/or “sustainably produced” food and/or food produced according to environmentally friendly protocols?
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3.8 Does the business believe that consumers would be more concerned about green and/or environmental production issues on some products than others? Which are these food products?
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3.9 How does the business respond to the “forces” and trends on “green foods” and/or environmentally friendly production issues?
Identify what behaviours they might undertake in terms of purchasing (or manufacturing) green foods. It is envisioned that this would have to take some discussion, especially if they do not (or have not) thought about the future role of this issue.
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3.10 How would the business like to see the issue developing? _____________________________
Desired future direction for green food issues

3.11 Would the business promote/market food that is “green” and/or sustainably produced and/or produced according to environmentally friendly protocols because of one or more of the following reasons? ☐ (tick and comment as appropriate):

Competitive advantage ☐
Demand ☐
Other (specify) would not promote products, as green as there is lack of clarity as to what a green produce/product is. _______________________________________________________________

3.12 What would motivate the business to become more active in “green marketing” and/or “environmentally friendly” marketing?
Prompt: actions of stakeholders- government, competitors, industry bodies, producers, manufacturers, independent bodies, consumers, tax incentives etc
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3.13 What factors would impede or restrain the business from undertaking more initiatives on “green foods” and/or food produced in an environmentally friendly manner?
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3.14 How important is it to establish the authenticity of food products that are asserted to be sustainably produced or environmental friendly?

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3.15 What is the best way of establishing the authenticity of food products which are asserted to be sustainably produced and/or environmental friendly?

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3.16 Do you envisage such a system incorporating product traceability back to the farm of origin or source of production?

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3.17 What are the possible actions by the business in regards to different labelling programs?

<table>
<thead>
<tr>
<th>TYPE OF LABELLING PROGRAM</th>
<th>Guarantee of authenticity of environmental friendly production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>Voluntary org/industry</td>
</tr>
<tr>
<td>Increase shelf space/ promotional activity</td>
<td></td>
</tr>
<tr>
<td>Develop cooperative activities</td>
<td></td>
</tr>
<tr>
<td>Restructure activities to have dedicated section in store</td>
<td></td>
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<tr>
<td>Rely on producer activities</td>
<td></td>
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<tr>
<td>No action</td>
<td></td>
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4 Other comments

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References


