

# CONSUMER CONCERNS: IS ORGANIC FOOD IMPORTANT IN AN ENVIRONMENTALLY RESPONSIBLE DIET?

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## Abstract

How humans manage environmental sustainability will impact the wellbeing of future generations. Research has been considering the environmental impact of consumers' dietary preferences. This paper reports on the specific role of organic food in such choices. Results based on a survey of consumers (N=163) in Australia show that many want to have an environmentally responsible diet and believe that their purchases of organic food contribute to such a diet. When respondents were presented with 12 food attributes, 17% rated 'organic' as very or extremely important while 73% rated 'quality' as very or extremely important, and with the ten other attributes rating in between. Thirteen percent of respondents reported 'never' purchasing organic, while 2% responded 'always', 15% 'frequently', 36% 'sometimes', and 34% 'rarely'. Of nine strategies presented to respondents for achieving a sustainable diet 3% reported maximizing their purchases of organic food, 17% of respondents reported avoiding bottled water, and the other seven strategies rated in between. Fifty four percent of respondents indicated a readiness to increase their organic consumption. One strategy for growing sales of organic food is to encourage existing consumers of organics to purchase more of these products. This may require focusing on promoting its superior health credentials whilst offering it at comparatively convenient locations and competitive price/quality relationships. In addition this research suggests that there is scope to jointly promote the co-benefits of other environmentally friendly dietary behaviours, such as encouraging reductions in eating meat and junk food, as well as minimising the amount of food waste.

**Key words:** organic food, sustainable consumption, consumer behaviour, market growth.

## Introduction

This paper contributes to addressing emerging concerns about the long term environmental impacts of high levels of consumption by focussing on the environmental impact of consumers' dietary preferences. The specific example reported in the present study is the role that organic food purchases have in contributing to a healthy and sustainable diet. By using a marketing framework, the general but somewhat problematic concept of sustainable consumption is discussed prior to reviewing relevant food marketing literature. The focus is on household level actions that contribute to creating environmentally sustainable diets. This is followed by the presentation of empirical research that identify what consumers are currently report doing and areas in which they are susceptible to change. The conclusions provide recommendations for strategies that

may assist the organic food sector to continue growing its market whilst simultaneously contributing to the challenge of environmental sustainability.

### **Background literature**

Sustainable consumption has emerged as a relative new area of research. It originally addressed the negative impact that high levels of individual purchases, also referred to as consumerism, tend to have on the natural environment. This rapid increase in consumption, particularly in developed countries, is being driven by an expanding and increasingly affluent global population. Sustainable consumption focuses on the equitable use of resources across the planet (intragenerational equity) and for future generations (intergenerational equity) as well as encompassing the consideration of the full product-life-cycles, minimisation of wastes and pollution as well as the use of renewable resources within their capacity for renewal (NME 1994).

Whilst the notion of sustainable consumption has intuitive appeal, achieving meaningful sustainability from any form of consumption is problematic. Recent publications have emphasised this, including those that use the term 'affluenza' to describe consumerism as a socially transmitted disease which erodes human wellbeing (e.g. Hamilton & Denniss, 2005). Others are more pragmatic and optimistic.

It has been suggested that it is necessary to make sustainable choices easier by:

- “ensuring that incentive structures and institutional rules favour sustainable behaviour”,
- “enabling access to pro-environmental choice”,
- “engaging people in initiatives to help themselves”, and
- “exemplifying the desired changes within Government policies and practices” (Jackson, 2005, p.iii).

More recently it has even been suggested that individual wellbeing and environmental sustainability is possible without curtailing economic growth with the concept of 'prosperity without growth' (Jackson, 2009).

Not surprisingly, food is a major focus for sustainable consumption (WWF 2011), as it is a daily choice for most citizens and the food system is a large contributor to global warming, at around 20% of greenhouse gas emissions (Friel et al. 2009). There are many areas in which the sustainability of the global food system may be improved, ranging from production, through the supply chain, to consumption. The United Nations has identified improving the environmental sustainability of diets through consumer education as a priority area within the more general area of the 'green' economy initiative – being one that “achieves increasing wealth, provides decent employment, successfully tackles inequities and persistent poverty, and reduces ecological scarcities and climate risks” (UNEP 2010, p. 2).

The ability to understand and influence food related consumer behaviour is what the UK Government has recently referred to as demand-led change towards low environmental impact diets (Defra 2010). More recently it has been stated that vital work is needed to establish what is sustainable food (GOS 2011).

Organic food is recognised as contributing to sustainable consumption by many influential organisations (DAFF 2011; FAO 2011; UNEP 2011). It offers an exemplar of a more sustainable food system due to its superior environmental credentials, many of which may be incorporated into other food systems. However, it is important to note that these alleged superior environmental credentials are not necessarily fully supported by the available scientific evidence and continue to be the focus of research. A recent meta-analysis of the literature concluded that, on average, organic soils on farms have a higher content of 'organic' matter and higher biodiversity, both in terms of the natural biodiversity in the wildlife present and in the agro-biodiversity of the breeds used by farmers (Mondelaers et al. 2009). In relation to leaching of nitrates and phosphates, when measured on a per hectare basis organic farms are better, however, on a per unit of production the benefit is not as pronounced, or non-existent, due to the lower yields. This reduction in this aspect of the environmental benefits of organic farming when measured on a per unit of production and in instances where there is a lower yield is supported by other research (de Backer et al. 2009, de Ponti et al. 2012). In relation to energy use, most organic farms demonstrate a lower environmental impact, both in terms of per hectare and per unit of production, except for some specific products, such as poultry (due to the longer time taken to reach maturity) and fruits.

The superior environmental credentials of organic food, or at least the perception of these, is important to some, but not all, consumers. Many consumers, particularly those in affluent countries, have the option to choose between organic and conventional food products. Recent research (Mondelaers et al. 2009; Aertsens et al. 2011) supports the claim that the most important feature of organic food products are their superior health claims (due to the fact artificial biocides are not allowed during their production) whilst being better for the environment is a lower order priority for consumers. The reasons why consumers select organic products are remarkably consistent across products, cultures and time (Hughner et al. 2007; Pearson et al. 2008; Pearson et al. 2011). As with the environmental credentials it is important to note that the scientific evidence to support the superior health claims is contested (Dangour et al. 2009; Hoefkens et al. 2009; Dangour et al. 2010).

It is recognised that diets and their associated food systems are hugely complex, with numerous interconnected but often independently managed stages along the supply chain from production, processing and retailing before final consumption. Consequently there are many points of intervention where efforts could change its environmental impact (see for example, Lynch et al. 2011, GECAFS 2012). However, eating healthily has been identified as the primary link for how consumers engage in sustainable food consumption in the UK (Defra 2007). The Sustainable Development Commission in the UK has developed a list of priority actions for improving sustainability in the food system that could be initiated by individual consumers (SDC 2009).

The SDC study used a very broad definition of sustainability, which included more than just ecological outcomes. It is based around the UK Government's principles of sustainable development by "ensuring a strong, healthy and just society and living within environmental limits" (SDC 2009, p.8). Thus it embraces requirements of a healthy diet as a prerequisite for pursuing a more sustainable diet. Further they explicitly aimed at integration (rather than trade-offs) between environmental, social and economic outcomes. Its hierarchy of recommendations is based on the relative ease, or difficulty, of

implementation. It placed highest priority on actions they considered were “likely to have the most significant and immediate impact on making our diets more sustainable, in which health, environmental, economic and social impacts are more likely to complement each other” (p.4).

The high priority proposed actions are:

- “lowering consumption of meat”,
- “lowering consumption of dairy products”,
- “consuming less low nutritional value products”, and
- “reducing food waste” (SDC 2009).

Actions which were likely to result in trade-offs between different aspects of sustainability were given a lower priority. These were:

- “increasing consumption of seasonal and field grown fresh fruits and vegetables (and reducing consumption of foods grown in heated greenhouses)”,
- “only eating fish from sustainable sources”, and
- “increasing consumption of organic food” (SDC 2009).

Actions expected to make a smaller contribution towards sustainability were given the lowest priority. These were:

- “reducing energy use in food purchases and cooking”, and finally,
- “drinking tap water rather than from bottles” (SDC 2009).

Although these recommendations are for the UK, they are arguably relevant to Australia due to the major similarities in both consumer diets (relatively high levels of protein sourced mainly from beef whilst wheat and potatoes are the main sources of carbohydrates, and an abundance of fruits and vegetables) and food systems that supply them (dominated by intensely competitive chains of supermarkets, and a food service sector that is increasing its market share, both of which use global sourcing of products). In addition, it is relevant to note that shortening the supply chain, which often manifests itself as a reduction in food miles is not on this list of priorities. Whilst this more local sourcing of food has a strong resonance with many consumers (Pearson et al. 2011) an environmental benefit only occurs in specific circumstances (ABARE 2009).

In a similar manner to the global average, the food system in Australia has a major impact on the natural environment where it accounts for around 20% of greenhouse gas emissions. Whilst agriculture also produces natural fibres, and some fuel and pharmaceuticals, it is dominated by production of food for human consumption. Rather than subsistence farming or wild harvesting, it is industrial-scale agriculture that is the source of most raw materials for food products in Australia. The environmental impact of agriculture is substantial. For example, it is responsible for the management of 60% of the landscape and uses almost 70% of the available fresh water (ABS 2010).

In summary, increasing consumption of organic food is seen to be one of the top nine behavioural changes that consumers could make to improve the sustainability of their diets - although it is recognised that the details of its environmental contribution is beyond the scope of this paper. However, this research contributes to the literature by exploring consumer purchases of organic food in terms of their existing behaviour and the potential to change this behaviour within the context of the nine areas identified that lead towards a more sustainable diet.

## Materials and methods

The collection of empirical data was undertaken in two phases. All of the empirical information was obtained in the city of Canberra which is in the Australian Capital Territory (ACT), is the capital of Australia, and has a population of almost 400,000 people. The questionnaire responses were collected and collated using an online survey tool (SurveyMonkey) prior to analysis with descriptive statistics.

The first phase aimed to gain a qualitative understanding of the context in which dietary choices were made and the relevance, if any, of environmental sustainability in relation to these preferences. This was completed in two focus group discussions with a convenience sample of 8-10 young adults in each. Key aspects of the discussion were recorded and used to inform development of the questionnaire that was used in the following phase.

The second phase of data collection aimed to quantify the extent of key behaviours within a population of innovators or 'early adopters' of an environmentally sustainable diet. Previous research has identified that affluence and education are positively correlated with pro-environmental behaviours (e.g. Defra 2007, Lea & Worsley 2007). An online questionnaire was developed containing both open and closed-ended questions. It was pilot tested with a convenience sample of 10 young adults who were known to the author, and, with minor modifications, was made available to a sample of adult food shoppers in the target population – government employees associated with the University of Canberra. Subjects were recruited by sending a single bulk-email invitation to participate through an informal intranet communication network (N = approximately 600) of staff and higher degree research (HDR) students of the University of Canberra comprising individuals who had opted-in for the intranet chat forum.

A total of 163 responses to the questionnaire were received. As anticipated with food shoppers the majority of the respondents (75%) were female. Respondents represented all age groups (ranging from 15 to 55+ year olds) and living arrangements (ranging from unrelated single adults through the various stages of having children to empty nesters). Most households (73%) had no children living at home. As planned, respondents had higher than average levels of income and education. For example their average level of education (78% with Bachelor Degree) is higher than the average in the ACT (30%) and Australia (19%). With this higher level of knowledge and purchasing power these respondents, on average, were expected to be leaders – as opposed to followers or laggards - in terms of their behaviour with respect to reducing the environmental impact of their diets (Defra 2007). In addition, these respondents would be expected to be more aware and engaged in proactive measures to improve their health. Evidence to support this is found in the fact that a relatively high proportion of respondents were in a healthy weight range, with only 32% reportedly being overweight or obese, half that of the Australian population at 62% (ABS 2008).

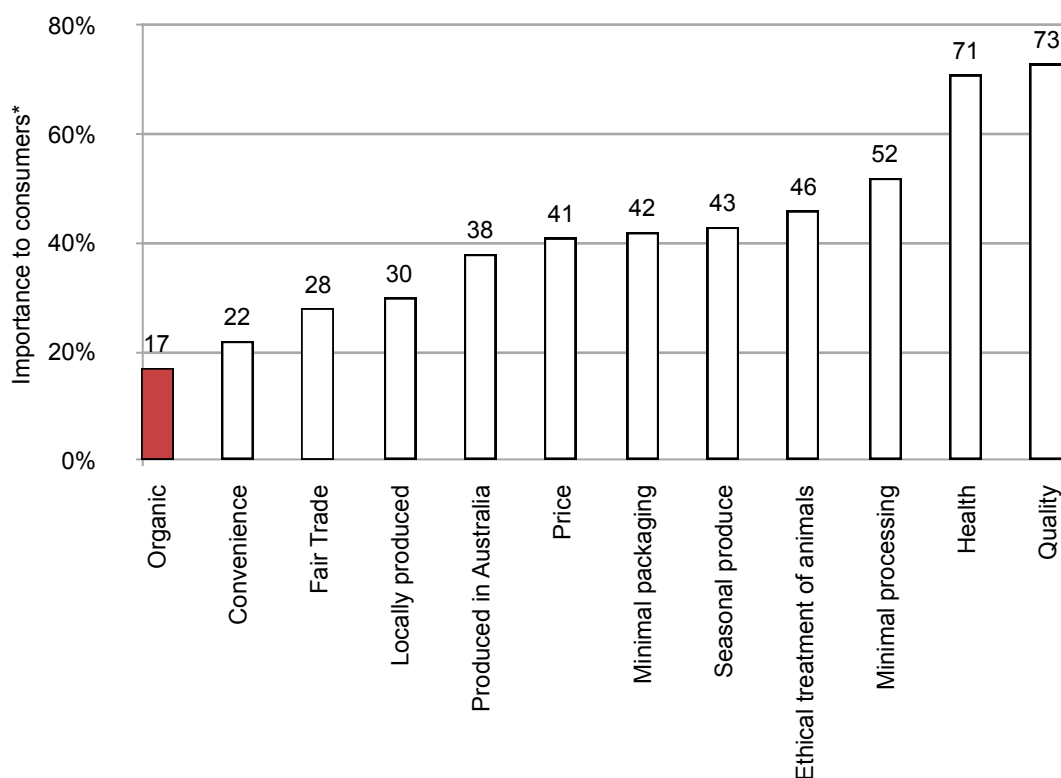
In addition, in terms of the methodology used, it is important to note that the collection of information was based on self-reported behaviour. Hence the results may be, for example, overstated if respondents reported on how they would like to behave, rather than how they actually behave. Further, whilst previous research has confirmed that most consumers have a correct knowledge about what certified organic food is (Pearson et al.

2011) this research method includes the implicit assumption that they are able to identify it at the point of purchase, which is not always the case (Henryks et al. 2010).

## Results and discussion

The results indicate that these food purchasers are concerned about the environment, with nearly all (96%) wanting to lead a more environmentally friendly lifestyle. Further, just over half (56%) report that they consider the environment when making food related choices.

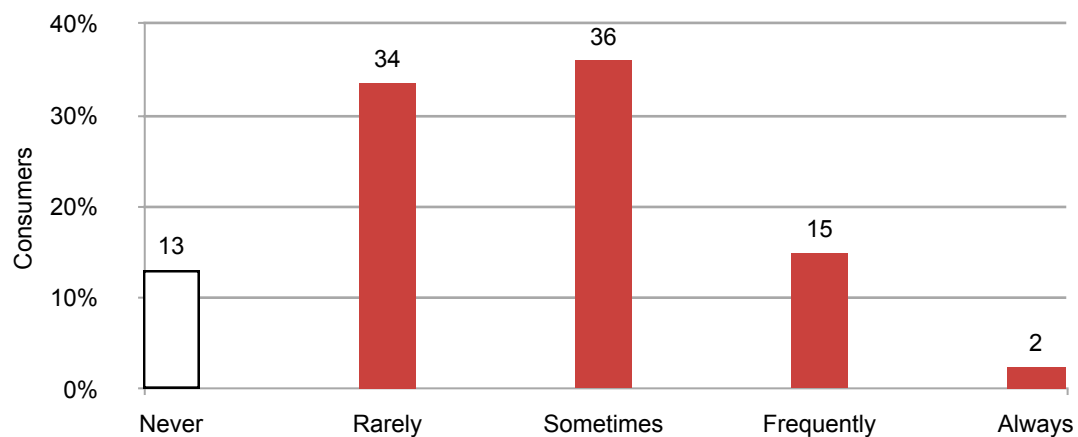
Food is often seen as a relatively frequent low value purchase where consumers tend to rely on habits that enable them to simplify the choice task. Hence it is important to understand the relative importance of organic within the context of other product features which are used by consumers to make their purchase decisions. It is generally recognised that health, quality, price and convenience dominate food buyer's decision making (Pearson et al. 2011). This was supported by results from this research as shown in Figure 1 with health and product quality being by far the most important product features.



**Figure 1. Importance of organic in relation to other product features.** (\* % of customers who rated it 'very' or 'extremely important' on five point scale. N=163. All differences relative to 'organic' are significant at a 90% confidence level except 'convenience').

As shown in Figure 1, price (at 41%) was around twice as important as organic (at 17%) and convenience (at 22%). Throughout the discussion of these results it is important to remember that the respondents represent a sample of consumers who are expected to be leaders in terms of adopting sustainable dietary behaviours. Evidence of these potential leaders in terms of health and sustainability is found with Figure 1 where health and quality are extremely important in contrast to the lesser reported importance of price and convenience.

However, in spite of the relatively low importance that respondents place on organic food (Figure 1), the vast majority (87%) claim that they buy it, albeit most only do this rarely (33%) or sometimes (36%) with a small proportion purchasing frequently (15%) and only a few (3%) always purchasing it (Figure 2).



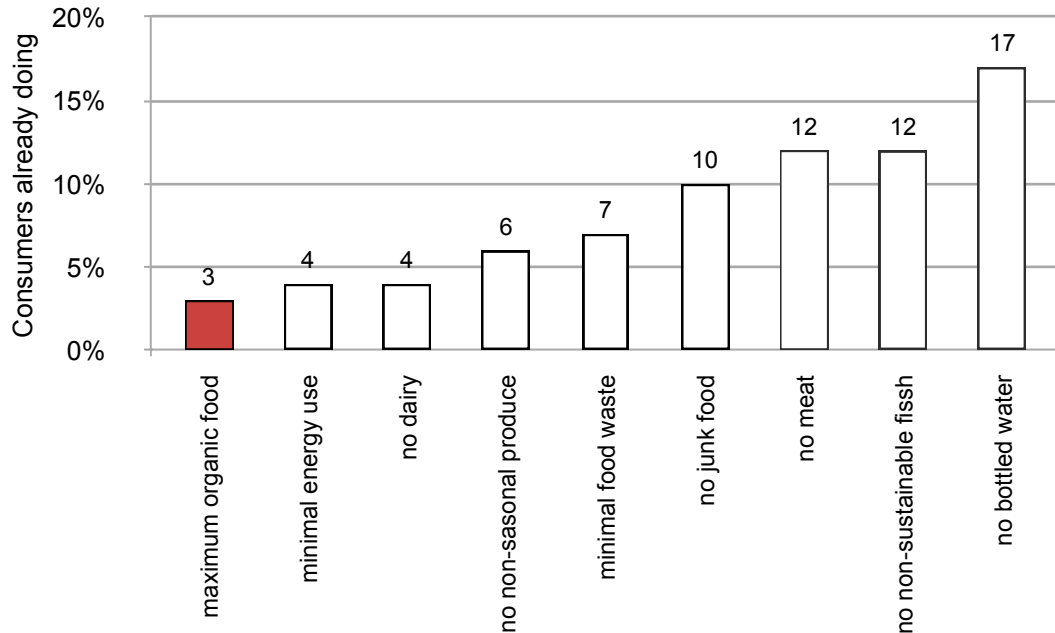
**Figure 2. Frequency of organic food purchases.** (N=163. All differences relative to 'never' are significant at a 90% confidence level except 'frequently').

This is consistent with the results from other research which has shown that most food consumers are 'switchers' as they purchase organic products some of the time and conventional products at other times (Henryks & Pearson, 2012); there are only a few dedicated organic food consumers.

As shown in Figure 3, only a small percentage of respondents (3%) purchase as much organic food as they can. However a larger number are engaged in contributing to reducing the environmental impact of their diet through other behaviours.

In relation to the nine food-related behaviours nominated (SDC 2009), around 1 in every 10 food respondents have stopped eating junk food and meat. The motivation for this is not determined in the present study and may not be to contribute to the environment and may alternatively be related, for example, to health and/or animal welfare concerns. With only a small percentage of respondents (4%) actively reducing their food waste the vast majority of the respondents apparently continue to waste food by throwing it out. However, there is the additional issue of 'wasting' food by eating more than is required. This latter issue is important as a significant portion of the survey respondents, at around

1 in 3, were self-classified as being overweight or obese. The range of motivations for those who have already given up eating dairy products may be similar to those for meat. However, they represent a much smaller portion of respondents (4%).



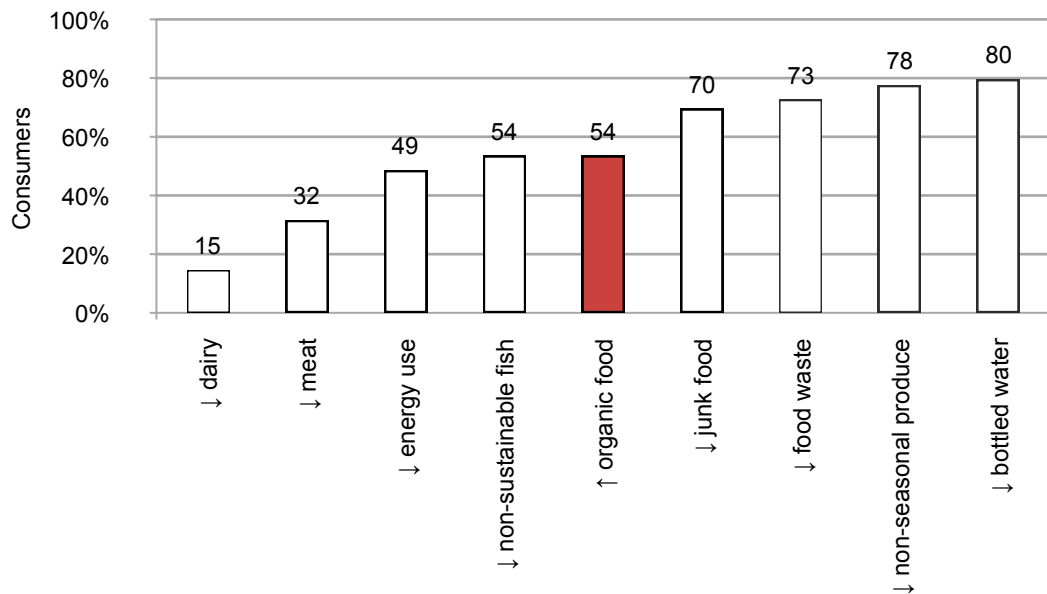
**Figure 3. Relative popularity of organic food purchases in sustainable dietary behaviours.** (N=163. All differences relative to 'organic' are significant at a 90% confidence level except 'minimal energy use' and 'minimal food waste').

In relation to the less important behaviours, almost 1 in 5 do not purchase bottled water (Figure 3). In addition, over 1 in 10 food respondents either do not purchase fish, or only purchase fish that has been sourced from sustainable sources. Just over 1 in 20 report that they only eat seasonal fruits and vegetables. And finally, only a small portion, around 1 in 25, have reduced the energy used to purchase, store and cook their food (Figure 3).

This leads to two questions, would respondents change their behaviour if they were told that purchasing organic food would improve the environmental sustainability of their diet, and related to this, are there other behaviours that the organic food movement could associate with to achieve a benefit in terms of its own market growth?

The results for likely changes in behaviour, when prompted with the statement that there are nine areas in which they could improve the environmental sustainability of their diet (SDC 2009), are shown in Figure 4. In relation to improving the sustainability of their diet in the nine areas identified, there is a big range from only a few (15%) being willing to reduce their purchases of dairy products through to most (80%) being willing to stop purchasing water in bottles. Increasing purchases of organic food sits in the middle of this range with many respondents (54%) being willing to do it.





**Figure 4. Relative popularity of increasing organic food purchases to improve sustainability of diet.** (N=163. All differences relative to 'organic' are significant at a 90% confidence level except 'energy use' and 'non-sustainable fish').

In relation to the four high priority areas (SDC 2009), most respondents (over 70%) would reduce food waste and their consumption of junk food, a much small number (32%) would reduce their purchases of meat and even less (15%) would consider reducing their consumption of dairy products. These results provide support for recent government led activities in Australia that focus on reducing waste (e.g. 'Love food – Hate Waste' <http://www.lovefoodhatewaste.nsw.gov.au/>) and perhaps for improving health through reducing obesity (e.g. 'Swap it – Don't stop it' <http://swapit.gov.au/>).

## Conclusions

The results from this research show that many respondents (around half) were aware that their food choices have a direct impact on the environment, and a majority responded favorably to the proposal to increase their organic food consumption (Figure 4). It is important to note that diets and the food system that supports them are complex. Their multiple stages and independent actors offer many potential points of intervention. Further, sustainability is a multi-layered and multifaceted concept that may be approached and measured in many different ways. Conclusions from this paper make a specific contribution at the level of individual consumer choice and the role that organic food purchases play in the more encompassing challenge of environmental sustainability.

Historically the dominant choice criteria for organic food has been its personal health benefits. Environmental concerns, such as those associated with climate change, are moving up the political agenda in countries like Australia. This suggests that there is scope to align the superior environmental credentials of organic food with these emerging concerns from both individuals and governments. A strategic priority for the organic food movement could be promoting the contribution that it makes to improving the natural

environment, with perhaps appropriate cautions due to the contested nature of the scientific evidence. If successful this might influence the large portion of consumers who 'switch' between organic and conventional food. By migrating them along the continuum from 'rarely' to 'frequent' they will increase their purchases of organic food. Such a promotion of organic food could be combined with other sustainable diet behaviours to provide co-benefits for the environment, such as encouraging reductions in eating meat and junk food, and minimising the amount of food that is wasted. However, as with any competitive market place where consumers have a range of choices, to achieve sustained sales growth, individual organic food products will need to meet or exceed consumer's experiences in relation to conventional alternatives.

Thus, in summary, this research indicates that participants in the organic food movement who wish to increase sales should continue to promote its superior health credentials whilst ensuring that products are offered in comparatively convenient retail outlets at competitive price/quality relationships. This research has added to the literature by identifying the relative importance consumers place on organic food in relation to an environmentally sustainable diet. Whilst its specific contribution is modest, there is the opportunity to align with other behavioural changes that support a more sustainable diet. Hence continued recognition and enhanced support for organic food producers, processors, retailers and consumers from Government is justified as it provides a meaningful contribution to their environmental policy agenda as well as supporting their health policy aims.

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