

Chapter 6

Organic Food Consumption

Food production and consumption is exerting increasing pressure on the environment, in particular through water, energy, pesticide and fertiliser use. This chapter looks at the impact of instruments directly targeting consumer choice concerning organic food consumption, such as organic labelling and raising awareness through public information campaigns. It provides a better understanding of the main motivations for consuming organic food. The importance of private considerations, like health concerns, is compared to the role of environmental motivations in households' decision to consume organic food. The chapter also examines how much more households are willing to pay for organic food products compared to conventional ones.

1. Introduction

Food production and consumption is exerting increasing pressure on the environment, in particular through water, energy, pesticide and fertiliser use. A number of factors influence food consumption and its impacts, such as population dynamics and demographic changes (urbanisation, household size). Food consumption is also driven by rising per capita incomes. Global per capita food consumption (kcal/person/day) is projected to rise to 3 050 kcal in 2030, compared to 2 800 for 1997-99 (OECD, 2008a).

In response to growing worldwide food demand, changes in food consumption patterns and reductions of their environmental impacts are receiving a lot of attention. In this context, a number of quality-differentiated products have emerged on the market to meet consumers' demand for more environmentally-friendly food products, ranging from organic food products to pesticide-free products or production systems using integrated pest management principles (IPM). Europe is the main market for organic products with an annual growth between 10-15%, together with North America (IFOAM, 2007).

Various types of policies are available to governments to facilitate the development of the organic market. This project focuses on the demand side and the impact of policy options to enhance organic food supply – such as subsidising organic production – is outside the scope of this study. The survey looks at the impact of instruments directly targeting consumer choice concerning organic food consumption, such as the provision of information (e.g. organic labelling, raising awareness). Economic instruments may also be used such as price subsidies for organic products, although this is not common.

Therefore, public policies on the demand-side mainly seek to address a situation of imperfect information or asymmetric information between consumers and producers and to help the market function better by delivering reliable information to the consumers. When making choices about environmentally-friendly food products, such as organic food, it is important to recognise that some aspects of product quality, like taste, are only detectable after consumption while other characteristics, like environmental aspects, cannot be determined by the consumer with any degree of precision at all.¹

Organic food labelling is one of the key policy measures aimed at allowing consumers to make more informed choices. Labels generally signal that organic agricultural practices are followed in the production process.

Depending on the definition used, fewer chemicals (e.g. pesticides, fertilisers), if any, may be used. All ten countries surveyed have organic labels at the national level and in some cases, a supranational label, the EU organic logo for instance, is also displayed on products.

Organic food labelling may be implemented by governments directly. It may also be implemented by producers or retailers, but the government still has an important regulatory role in order to protect consumers from false claims. Requirements vary across countries and generally involve a set of production standards. Studies indicate that the effectiveness of labelling depends on how reliable the certification system is at ensuring that the practices adopted at the farm level are in line with the claims made on the label (OECD, 2008b). One recent example is Canada's new organic food certification standard, introduced in 2009, requiring mandatory certification for agricultural products represented as organic in import, export and inter-provincial trade.

Raising consumer awareness through public information and education campaigns is another key measure available to governments to promote organic food products. Organising promotion campaigns to inform consumers is a major component of the European Action Plan for Organic Food and Farming.² EU-wide promotion programmes have been launched, in addition to national campaigns in countries such as the Czech Republic, France, Italy and the Netherlands.³

Better understanding of the main drivers of consumer's behaviour towards organic food is important for effective policy design. This is one objective of the OECD survey. Drawing upon observations from over 10 000 households in ten OECD countries, the survey provides insights into key issues including:

- *Main motivations for consuming organic food.* As expected, high prices appear as the most important factor restricting market share. Results confirm the importance of private considerations, like health concerns, in households' decisions to consume organic food. Public considerations (i.e. protection of the environment or animal welfare) also have an influence.
- *Role of labelling at inducing organic food consumption.* Identification of relevant labels does not appear to be an issue in most countries surveyed, and almost half of respondents recognised organic labels, although with some variation across countries. Trust in labelling and certification seems to be key in the motivation to consume organic.
- *Differences in organic consumption behaviour across different household groups.* In line with previous evidence, only a small number of socio-demographic characteristics (e.g. age, education) are found to have a significant influence on organic food consumption. However, the factors which affect the choice to consume organic food at all or not seem to differ from those factors which affect relative consumption levels for those who purchase at least some organic food products.

- *Willingness-to-pay more for organic food products compared to conventional ones.* The survey results indicate that consumers are generally not willing to pay more than 15% relative to conventional food products, whatever the food category. As expected, those concerned with the environment and those perceiving significant health benefits from organic food are willing to pay higher premia. Amongst the factors that explain differences in WTP is the ease of identification and comprehension of organic labelling. Consumers who do not trust existing certification systems are not willing to pay much for organics.

This chapter is based on the report prepared for the OECD by the Italian research team lead by Stefano Boccaletti (Catholic University, Italy). The full technical report is available at: <http://dx.doi.org/10.1787/9789264096875-en> and www.oecd.org/environment/households/greeningbehaviour.

The rest of the chapter is structured as follows: Section 2 examines the main factors encouraging the consumption of organic food. The role of labelling and certification is discussed in Section 3, and Section 4 reviews possible difference in attitude and behaviour towards organic food products across various types of households. The next section analyses respondents' WTP a price premium to consume organic food products. The chapter concludes with a discussion of the main policy implications.

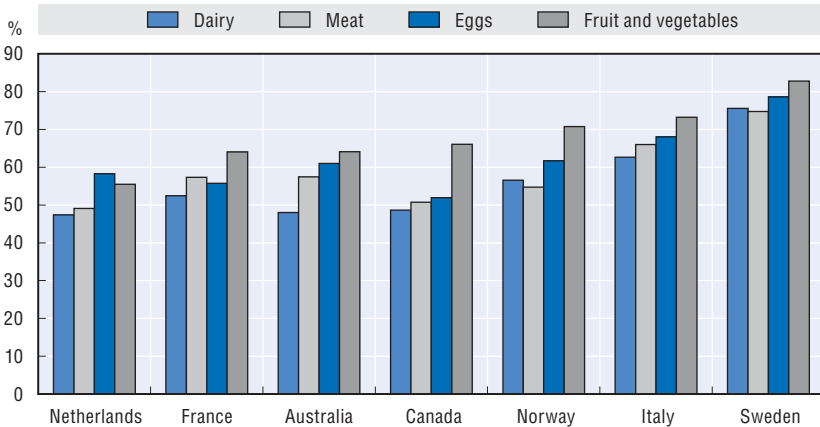
2. Main motivations to consume organic food

The survey distinguished five categories of organic food products: fresh fruit and vegetables, milk and other dairy products, eggs, meat and poultry, and bread, pasta, rice and cereal. The percentage of households who reported actually consuming organic food was the highest in Sweden and Italy for all different food types, as well as in the Czech Republic, Korea and Mexico. Fruits and vegetables are the most popular organic item followed by eggs, while dairy products come last (see Figure 6.1). Swedes show high percentages of households consuming organic for all food categories with more than 80% reporting that they consume organic fruits and vegetables while Dutch are the least likely to consume organic.

Respondents were also asked to estimate the percentage of their household expenditure on a range of different organic items. Eggs ranked in first place overall. Australians, Italians and Swedes were found to have the highest proportion of household expenditure on the organic products in question (around 30%). For all five products, households reported that more than 20% of their total expenditure was on organic food.

Respondents were also asked to rank a list of 6 factors in order of importance in their motivation to start consuming (or to consume more) organic food products. Empirical evidence on households' main drivers to consume organic food, as well as possible obstacles to an increase in consumption levels helps guide policy makers. For instance, such information can be used to help focus the message conveyed to consumers in public information campaigns.

Figure 6.1. **Percentage of households who reported consuming organic food, by category, for selected countries**



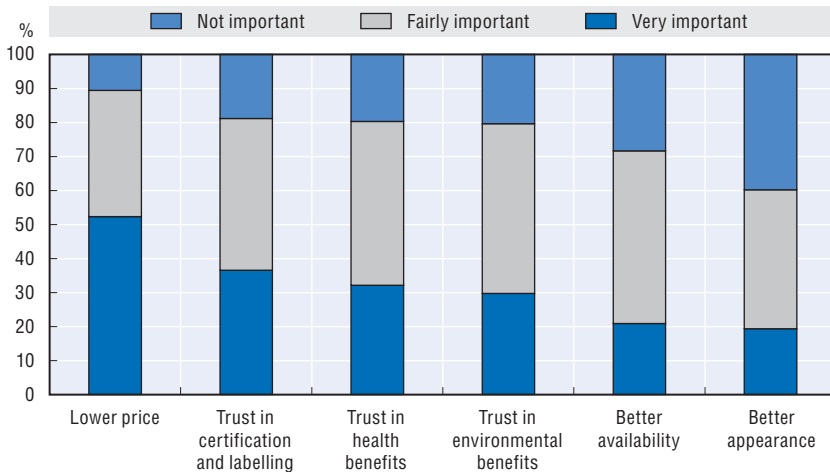
Note: The percentages have been calculated by excluding those who do not know if they consume organic or not.

Source: OECD Project on Household Behaviour and Environmental Policy.

Lower price is ranked first to consume more organic food

The responses indicate that lower price is ranked first by respondents in encouraging them to consume more organic food. Over 50% of the respondents stated prices as very important. Figure 6.2 summarises the results and shows

Figure 6.2. **Motivations to consume more organic food products**

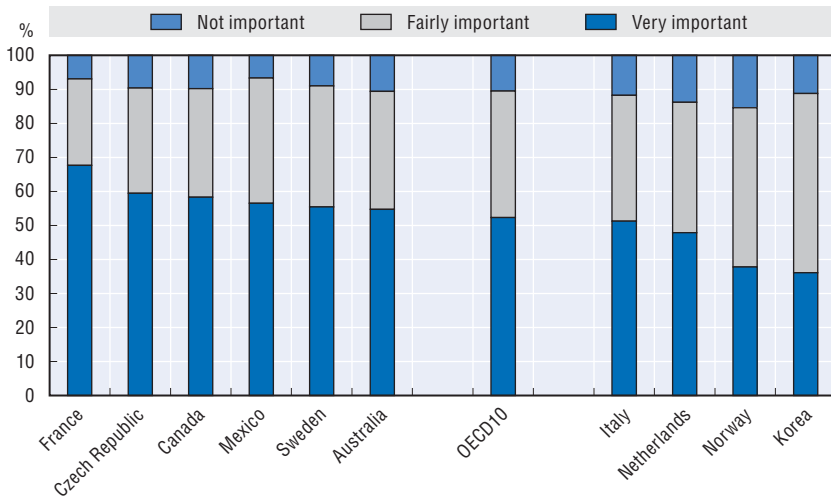


Source: OECD Project on Household Behaviour and Environmental Policy.

that trust in certification comes second (37%) followed by trust in health and in environmental benefits (around 30%), while the availability and better appearance of products seems to play a more limited role (around 20%).

However, the relative importance of the role of prices in influencing organic consumption appears to vary across countries. Figure 6.3 shows that price was most likely to be ranked as a very important factor in France (68%), and that countries least concerned with price were Norway (38%) and Korea (37%).

Figure 6.3. **The importance of price in encouraging respondents to consume more organic food, by country**



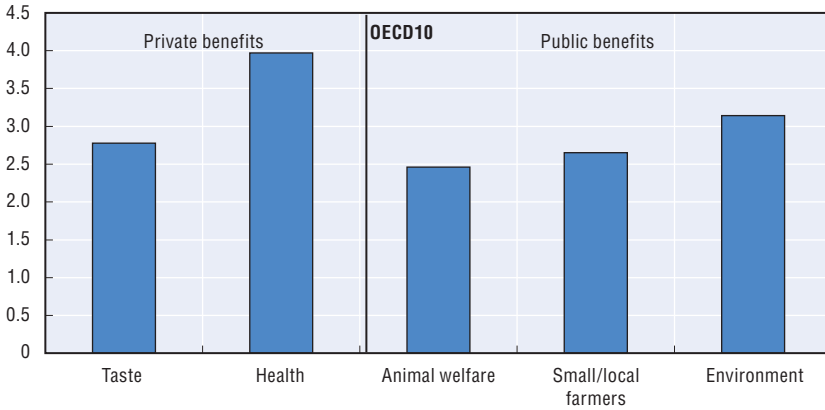
Source: OECD Project on Household Behaviour and Environmental Policy.

The “private” and the “public” dimensions of organic products both motivate consumption

Consumers can expect different types of advantages from the consumption of organic food products, and these can be distinguished according to their “public” or “private” dimension. Private benefits are reflected in factors such as the expected taste and health benefits of consuming organic products. On the other hand, the “public” dimension of organic food is reflected in factors such as the environmental benefits, impacts on animal welfare, and support for local farmers.

Overall, respondents tended to attach more importance to private benefits of organic food consumption (see Figure 6.4). However, public environmental benefits were also deemed to be important motivations. Animal welfare and support for local farmers were considered to be least important.

Figure 6.4. **Public versus private motivation to consume organic food, OECD10**

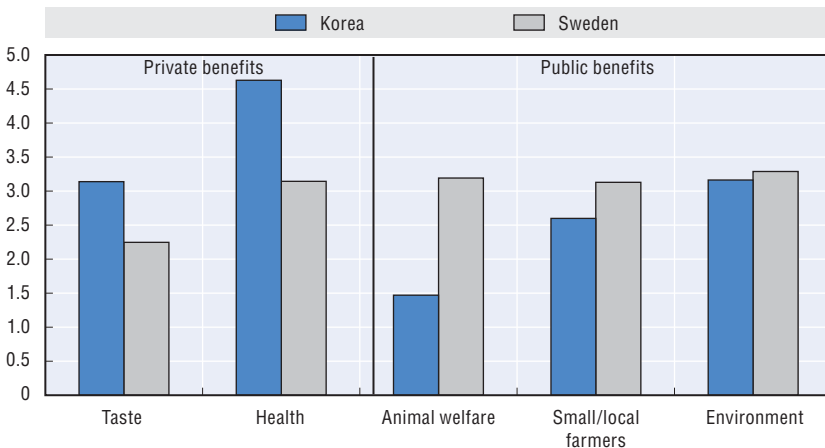


Note: The y axis represents the average rank (5 highest, 1 lowest) – this rank question was only for people who consumed organic food.

Source: OECD Project on Household Behaviour and Environmental Policy.

Differences appear when looking at results by country, as illustrated in Figure 6.5 in the case of Sweden and Korea. Respondents from Sweden generally rank the public dimensions of organic food consumption higher than private concerns, while the opposite is true in Korea. The importance of animal welfare as a factor in encouraging households to consume more

Figure 6.5. **Comparing “public” and “private” motivation to consume organic food in Sweden and Korea**



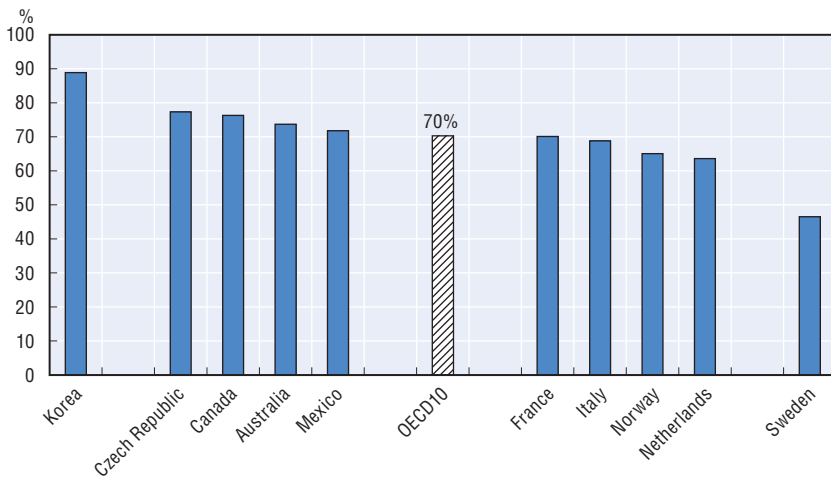
Note: The y axis represents the average rank (5 highest, 1 lowest) – this rank question was only for people who consumed organic food.

Source: OECD Project on Household Behaviour and Environmental Policy.

organic food varies significantly between countries, with the Dutch and Swedes caring the most strongly for animals and the Italians and Koreans ranking animal welfare the lowest.

Given the relative importance of personal health and public environmental concerns in consumers' motivation to consume organic food, further efforts were made to disentangle the relative importance of these two concerns. Figure 6.6 shows the percentage of households ranking personal health factors higher than environmental concerns.

Figure 6.6. Proportion of households ranking health higher than the environment in their motivation to consume organic food, by country



Source: OECD Project on Household Behaviour and Environmental Policy.

Seven out of ten respondents ranked the health benefits of organic food as more important than the preservation of the environment in their motivation to consume organic food. Health benefits were ranked as more important than environmental ones in all countries with the exception of Sweden. Korea had the highest preference for health with almost 90% ranking health benefits as more important than the preservation of the environment, followed by the Czech Republic, Canada, Australia and Mexico. Health concerns seem to be particularly important for “fresh fruits and vegetables” and this result is not surprising as chemical (pesticide) residues are perceived to be a particularly important health issue especially for these products.

In order to further refine the comparison on the impacts of health and environmental concerns in the individual purchase decision, respondents were asked to indicate if they would continue to consume organic products if

it was proved that organic food is better for personal health, but that there is no indication that it is better for the environment, or in the opposite case if organic food is better for the environment, but there is no indication that it is better for personal health. Results indicate that a greater proportion of respondents would continue to consume organic food products in the second case (52%) than in the first case (45%), confirming the importance of health aspects in the motivation of households to consume organic food.

These results emphasise the importance of the message conveyed in information-based instruments. Both the expected public and private dimension seem to matter to a certain extent in individual motivation to consume organic products in all countries surveyed, although the relative significance of each may vary across countries. As a result, communication campaigns making reference to these two dimensions are likely to be effective, all the more so when taking into account country differences.⁴ For instance, in light of the survey results, information campaigns emphasising the preservation of the environment can be expected to have a stronger impact on consumers in Sweden than in a country like Korea.

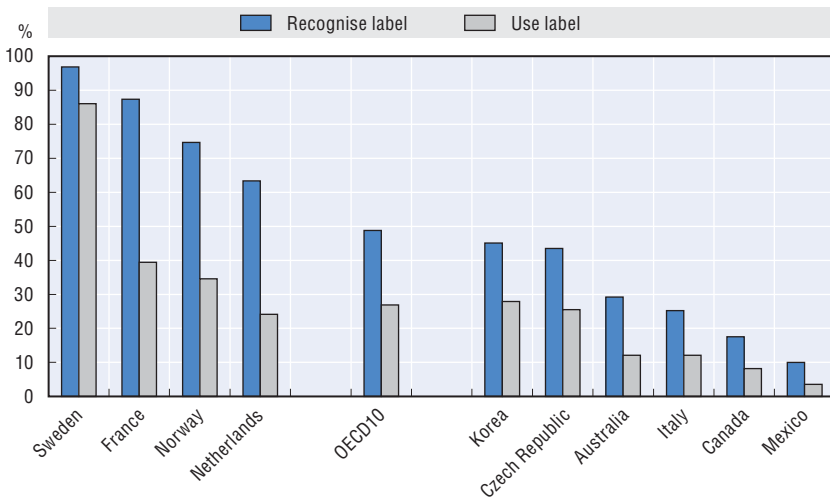
However, it should be emphasised that since clear evidence on the environmental and health benefits of organic food is sometimes lacking, information campaigns emphasising these messages need to be carefully designed by decision makers.

3. The role of labelling and certification

All 10 countries surveyed have organic labelling and the main logos used at the national level were shown to respondents. For some countries, supranational labels were also displayed in the questionnaire, like the EU organic logo used by EU member states to ensure compliance with EU organic farming regulation.

When presented with visual images of actual organic labels in the different countries, approximately half of respondents recognised the labels, but this varied widely by country as Figure 6.7 shows. Sweden had the highest level of recognition at 97%, followed by France at 87% and Norway at 75%. Mexico had the lowest level of recognition at 10%, with Canada, Italy and Australia at low, but higher levels at 18%, 25% and 29% respectively. It is interesting to note that, with the exception of Sweden which has both high levels of recognition and consumption of organic food, Mexico, Italy, Korea and the Czech Republic report high consumption of organic food, but they have low levels of organic label recognition.

Previous evidence has found that ease of identification of labels is key to steer organic food consumption, and the multiplicity of organic logos appears as an obstacle to the market take-up. The clarity of the message conveyed to consumers is moreover a priority area at the European Union level where,

Figure 6.7. **Actual organic food label recognition and use, by country**

Source: OECD Project on Household Behaviour and Environmental Policy.

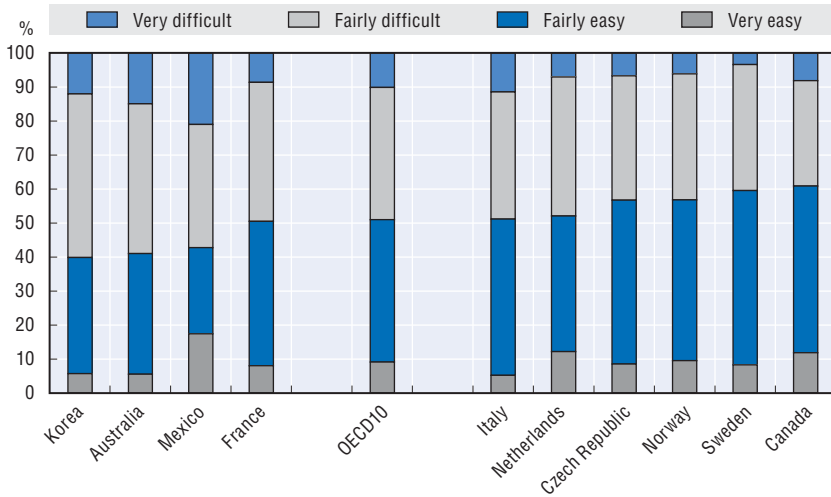
from July 2010, the use of the EU logo became compulsory and a new logo is to replace the current one with a view to improve recognition.⁵

However, identification of labels does not seem to be an issue in most of the countries surveyed with approximately half of the respondents finding it easy to identify organic food labels (see Figure 6.8). Canada and Sweden had the highest percentage of respondents (approximately 60%) finding it very easy or fairly easy to identify organic food labels. Koreans, Australians and Mexicans found it the most difficult to identify organic food labels with over half of the respondents finding it very difficult or fairly difficult to identify the labels.

Identification of labels is one thing, but understanding their meaning is quite another. More than half of the respondents also reported finding it easy to understand organic food labels. The percentage of respondents finding it difficult to understand was the lowest in Norway (35%) and Sweden (32%), while Koreans and Australians found it the most difficult to understand. The results show that the proportion of organic expenditure is the lowest for those who find it very difficult to understand organic food labels highlighting the importance of improving the understandability of labels.

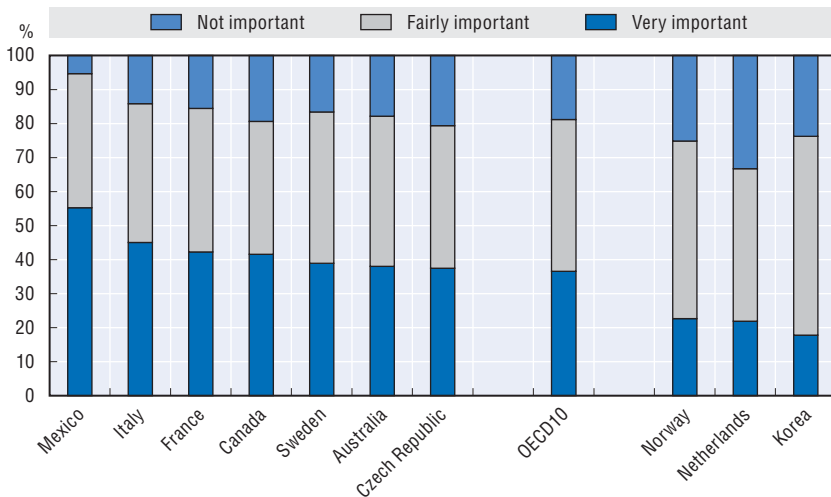
The survey results also highlight the importance of trust in labelling and certification in encouraging more organic food consumption. Indeed, trust in certification and labelling was ranked second after price in factors encouraging respondents to consume more (or start consuming) organic food products. However, relative to price there was much more variation across countries in the importance of certification in encouraging more organic

Figure 6.8. **Ease of identification of organic food labels when buying products, by country**



Source: OECD Project on Household Behaviour and Environmental Policy.

Figure 6.9. **Trust in certification and labelling in encouraging respondents to consume more organic food, by country**



Source: OECD Project on Household Behaviour and Environmental Policy.

consumption (Figure 6.9). Mexico and Italy were the most concerned with trustworthy certification, with 55% and 45% reporting that it is very important. Norway, the Netherlands and Korea were the least concerned with 23%, 22% and 18% respectively considering it very important.

4. Main difference in attitudes and behaviour across households

Implementing tailored information and promotion campaigns to well-defined types of consumers is listed as a key action in the European Action Plan for Organic Food and Farming.⁶ A number of EU countries have initiated multi-annual programmes focussing on specific target groups: households living in medium and large cities with medium and high incomes and education as well as mothers with children in the Czech Republic 2007-10 campaign; occasional users and potential light users in the Dutch 2006-08 promotion programme; and families, especially with children, in the Italian 2004-07 programme on biological products.

Who consumes organic products?

The questionnaire allows us to analyse how organic food purchasing and consumption may be influenced by individual and household characteristics such as age, education or family size. With a few exceptions, these variables do not show up as having a significant impact either on the decision to buy organic food, or on the level of consumption. This is an interesting result in itself, casting doubt on the relevance of targeting public information campaigns according to such characteristics.

Income appears to play a role in influencing the level of consumption for certain food categories only (*i.e.* food and vegetables) and does not seem to affect the decision to buy organic food, or at least not in any of the four food categories examined. However, both the probability to consume organic food and the level of organic food consumption are found to increase with income in some studies (Zhang *et al.*, 2008).

In line with previous findings in the literature, younger consumers appear as more likely to purchase organic food (Zepeda and Li, 2007; Loureiro and Lotade, 2005), with a few exceptions (Zhang *et al.*, 2008). With relatively lower income for younger consumers, this translates into relatively small increases in effective demand.

Gender does not seem to have a clear effect on organic food consumption, contrary to previous empirical work which suggested that gender has a significant effect with women more likely to purchase organic food than men and to state a higher willingness-to-pay (Rimal *et al.*, 2005). But it should be noted that results on gender are sometimes contradictory and other studies show the opposite trend (Wandel and Bugge, 1997).

Contrary to previous studies, men in multi-adult households report that they purchase more organic food than women. In any case, the survey results on gender suggest that even when gender differences are more evident in attitudes and behaviour towards environmental issues, this does not necessarily imply that these differences should be taken into account in

environmental policy. However, some national public information campaigns on organic food have been recently designed to specifically target women, like the Italian promotion campaigns (2004-07).

Whether you live in a rural or an urban area seems to have no significant effect on organic food consumption. In line with the literature, findings are unclear on the effects of education contrary to recent evidence showing that consumption of organic food products increases with education (Zhang *et al.*, 2008).

In conclusion, only a few of the socio-economic and demographic variables examined are found to have a significant impact on organic food consumption. Devoting efforts toward the development of targeted information campaigns may be ineffective.

Does it make a difference if organic food is already consumed?

The survey results suggest, however, that a more relevant differentiation may instead be between those who already consume organic food products and those who do not. This result can be used by policy makers when it comes to the design of public information campaigns.

Interestingly, in the survey, the main drivers which encourage people to start consuming organic food may differ from those which encourage existing consumers to increase the relative importance of organic food in their purchases (Figure 6.10). While relative price is the most important factor in both cases, the role of availability seems to have a more important role for those who already consume at least some organic food.

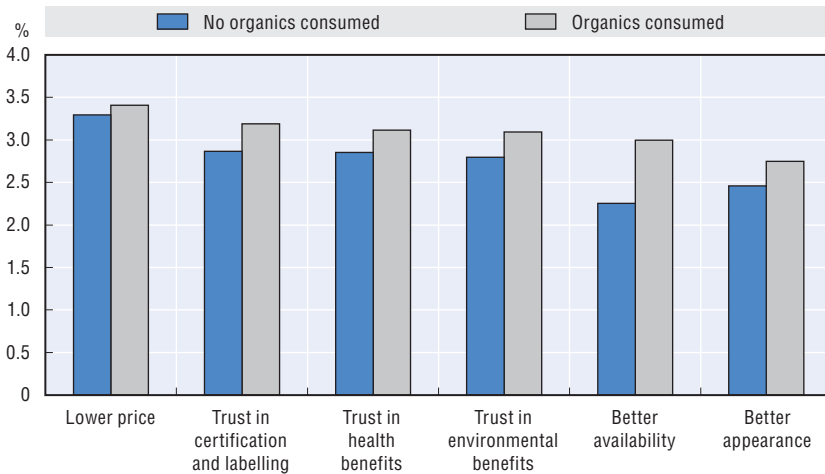
This can be seen more clearly in Figure 6.11. In the case of availability, the slope of the curve is clearly the steepest when going from 0% to 1-5% of total food expenditures on organic food products, for all four food categories. This indicates that availability has a distinct role to play in encouraging people to start consuming organic food. Conversely, there is no discernible trend in the case of price.

5. Willingness-to-pay for organic foods

In the questionnaire, respondents were asked to indicate how much they would be willing to pay for a given organic food product above the price of a conventional substitute. Five food categories were distinguished: “fresh fruits and vegetables”, “milk and dairy products”, “eggs”, “meat and poultry” and “bread, pasta, rice and cereals”.⁷

The survey results are similar to the usual distribution found in the literature (Figure 6.12), where most consumers are either not willing to pay a premium for organic products or willing to pay a small price premium. Overall, almost 30% of respondents are not willing to pay any premium for organic foods. Less than 25%

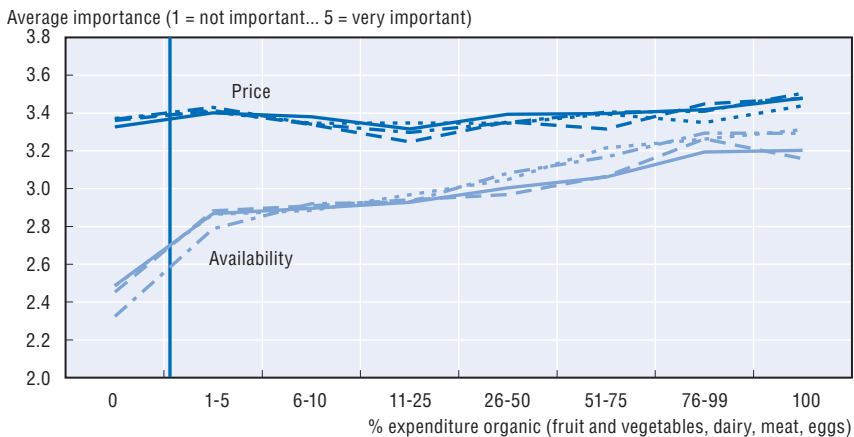
Figure 6.10. **Comparing motivations to start consuming and to consume more organic food**



Note: The average importance of motivating factors in encouraging respondents to start or to increase organic consumption is calculated by applying a weight of 1 to responses of Not at all important, 2 to Not important, 3 to Fairly important and 4 to Very important.

Source: OECD Project on Household Behaviour and Environmental Policy.

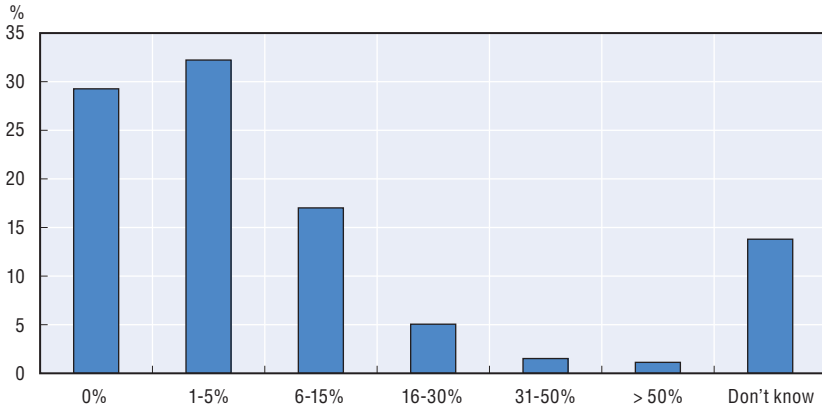
Figure 6.11. **The importance of “better availability” and “lower price” in the motivation to start consuming and to consume more organic food, by groups**



Source: OECD Project on Household Behaviour and Environmental Policy.

are willing to pay more than 5% more than for conventional foods. Just 3% of households are willing to pay a premium of more than 30%. These results indicate that the perceived benefit from the consumption of organic products is still somewhat limited.

Figure 6.12. **Willingness-to-pay (percentage price increase) for organic food, OECD10**



Note: These percentages have been calculated by taking the mean percentage of the 5 food groups for each willingness-to-pay category.

For example the average is taken of proportion of people for each food group stating they are not willing to pay any premium for organic food (0%) where the result 29% is the average of (28% fruit + vegetables, 29% dairy, 30% eggs, 30% cereal and 29% meat).

Source: OECD Project on Household Behaviour and Environmental Policy.

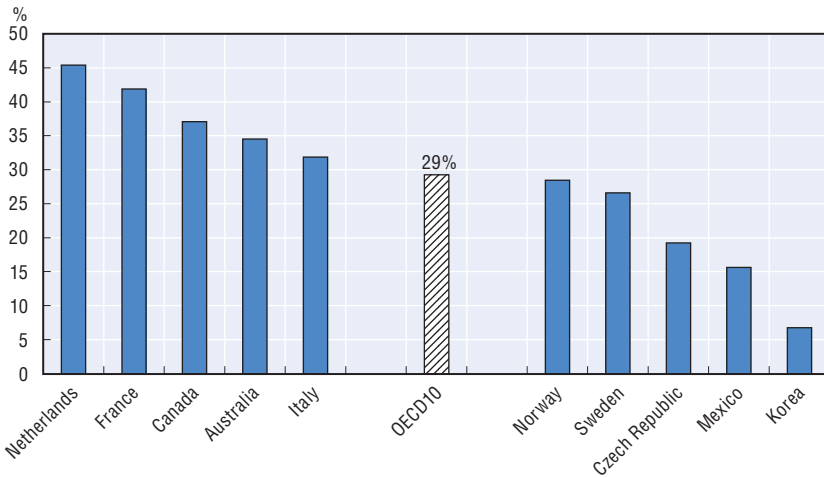
This result is consistent across product categories covered in the countries surveyed. Willingness-to-pay did not differ significantly by food group, with only a slightly higher willingness-to-pay for organic fruits and vegetables. However, it should be noted that the actual price premium paid by consumers can be substantially higher across countries for specific food products (Turco, 2002). Examples of studies which have found particularly high price premium include eggs and poultry in the United States (Oberholtzer *et al.*, 2006) and pork in Canada (Organic Agricultural Centre of Canada, 2003).

Nevertheless, some significant variations exist across countries as indicated in Figure 6.13. The proportion of respondents that were not willing to pay any premium for organic food is the highest in the Netherlands (45%) followed by France (42%), Canada (37%), Australia (35%) and Italy (32%).

Willingness-to-pay for organic food does not appear to be clearly related to income. This is consistent with the findings of some early studies (Wilkins and Hillers, 1994; Buzby *et al.*, 1995), but contrary to the results of more recent studies which show a positive relationship between the likelihood of purchasing organic products and paying a price premium for organic food, and income levels (Torjusen *et al.*, 1999; Hill and Lynchechaun, 2002; O'Donovan and McCarthy, 2002).

Findings confirm that WTP for organic food increases with education for all products. The results also show that respondents who live in urban areas have a higher mean WTP for organic foods. In addition, attitudinal variables such as

Figure 6.13. **Percentage of respondents not willing to pay any price premium for organic food by country**



Source: OECD Project on Household Behaviour and Environmental Policy.

concern for the environment increase the WTP more for organic foods. However, consumers currently willing to pay high premiums for organic foods would like to have more confidence in the importance of these benefits. This result confirms the general finding that knowledge and awareness about organic products seem to have some significant effects on consumer attitudes and the WTP a price premium for organic food.

It is interesting to note that consumers who are not willing to pay a premium for organic foods do not trust the actual certification systems. This suggests that improvements in certification systems are key to tap the potential market for organic food products.

6. Conclusions and policy implications

The results clearly stress the impact that labelling and information campaigns may have on increasing demand for organic food. The findings of the survey provide a number of new insights to increase the impacts of such measures on consumers.

First of all, households perceive a complex mix of public and private benefits associated with the consumption of organic food products. While both private and public factors are of importance, the balance between the two is different across countries. The relative weight of different factors should be borne in mind.

Overall, perceived personal health attributes rank highest, and as such stressing health would have the greatest impact. However, it must be remembered that the epidemiological evidence concerning the health benefits is mixed.

Perceived environmental benefits are also important. Information programmes and labelling schemes which focus on such benefits would also likely have a positive impact on consumption. More generally, government measures aimed at sensitising people to relevant environmental concerns (e.g. water quality, biodiversity), would indirectly increase the demand for organic food.

The results also give some useful indication on target groups for information and promotion campaigns. Demographic and socio-economic characteristics (e.g. age, education) appear to be – with some exceptions – relatively unimportant. However, it may be more appropriate to tailor information programmes differentiating between those who already consume organic food and those who do not.

While labelling identification and understanding do not appear to be an issue in most of the countries surveyed, there are some countries where there is still work to be done. For instance, in Australia, Korea and Mexico recognition and ease of understanding of labels is relatively low, and as a consequence the use of such labels is also relatively low. Improving trust in labelling and certification appears as another important factor, and governments can have a significant role to play there. Increasing consumer trust emerges as a key factor in encouraging consumption of organic food products.

Survey findings also stress the importance of combining demand-side and supply-side policy instruments to promote organic products. Price is perceived as a major obstacle to consuming more organic products, confirming the importance of price reduction to steer consumption. Well-designed financial support schemes targeting organic food production would lower prices, but the benefits of such public expenditures need to be weighed carefully.

Lastly, the results also provide some useful insights on how governments may increase household willingness-to-pay for organic food products. While, overall, consumers are not willing to pay a high premium relative to conventional foods, government measures targeted at improving trust in certification and labelling and at raising environmental awareness would increase demand. However, this needs to be underpinned by reliable evidence on the environmental and health benefits.

Summing up the main lessons for policy makers, the survey results reassert the key role that communication campaigns and public education can play to stimulate the consumption of organic food products. The results give indications on the messages likely to have the most significant effect on the public, and on opportunities to target communication campaigns on specific types of consumers. It also underlines the complementary role of labelling and certification, and of supply-side measures targeted at price and availability.

Notes

1. This characteristic of “credence” goods distinguishes them from “experience” goods.
2. COM(2004)415 Final.
3. See http://ec.europa.eu/agriculture/organic/eu-policy/promotion-programmes_en.
4. See http://ec.europa.eu/agriculture/organic/toolbox/messages-slogans_en.
5. Council Regulation (EC) No. 834/2007 of 28 June 2007 on organic production and labelling of organic product.
6. COM(2004)415 Final.
7. The Contingent Valuation method was used in the survey to elicit the willingness-to-pay (WTP) where respondents face a hypothetical purchasing situation in which they have to indicate the premium they are willing to pay for a given product, expressed as a percentage above the reference price, the price of conventional products (Haneman, 1984). Respondents were asked to choose among six classes of WTP: 0%, 1-5%, 6-15%, 16-30%, 31-50%, > 50%. The use of contingent valuation method to elicit willingness-to-pay (WTP) for food quality attributes is quite common in the literature.

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