

# Sensory Experiences and Expectations of Organic Food

## Results of Focus Group Discussions

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July 2010



Research Institute of Organic Agriculture (FiBL)





# Sensory Experiences and Expectations of Organic Food

## Comparative report from qualitative consumer research Deliverable 4.2

EU Project ECROPOLIS – Contract No. 218477-2 (FP 7)

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## Executive summary

This executive summary describes the main objectives and findings from a qualitative survey on consumers' sensory experiences, expectations and preferences with respect to organic food. The survey was conducted in the frame of the European Commission funded project ECROPOLIS in 2009 in Germany (DE), France (FR), Italy (IT), Netherlands (NL), Poland (PL) and Switzerland (CH). The objectives of this research were to explore:

- the range of experiences, expectations and preferences for specific sensory properties of organic food.
- words that are used by consumers to differentiate the taste of organic products amongst themselves and compared to conventional ones.
- 'symbolic' meanings and images which participants relate to sensory characteristics of organic food.
- consumers' sensory expectations and preferences related to the variability and standardisation of organic food.
- consumers' experiences to marketing of sensory characteristics of organic food.
- possible differences in consumers' sensory expectations and preferences between the participating countries.

Our findings suggests that: (i) consumers do not have experience in comparing organic and conventional products, (ii) their cognitive perception of sensory attributes is low, (iii) they realise sensory differences and judge them mainly positively, (iv) but they are of minor importance for buying decisions, while other factors are more relevant and important to them.

Consumers' sensory perception of organic food and perceived differences between organic and conventional food depends on the frequency of organic food consumption. By trend, heavy users have little experience with conventional food while light users show little experience with organic food. However, there exist different patterns, not necessarily distinguished by the frequency of organic food consumption: Some consumers buy certain categories of food always in organic quality (usually vegetables and fruit) but no other organic products. Others choose organic or conventional products ad hoc, especially in supermarkets where both organic and conventional products are available.

The perception of differences between organic and conventional products is not only linked to the frequency of organic food consumption. It also depends on conscious consumption and on the personal relevance of sensory attributes. However, we could not find a constant pattern of sensory sensation validated for typically heavy or typically light users or for a certain country. The values and images related to sensory aspects are too diverse. It appears that sensory attributes cannot be singled out from a lot of other factors governing sensory perceptions.

The study suggests that the perception of sensory properties underlies different influences. Eating habits and sensory adaptation have influence in a long-term effect, while time, place, and occasion – relevant when food is prepared or consumed –

influence consumers in the short-term. Furthermore, origin, production method, plant variety or growing conditions, food package, recipes etc. are influence factors that are also directly linked to the perception, evaluation and expectation of sensory properties.

Taste is the most important sensory attribute when consumers evaluate organic food. Other sensory properties, such as smell and appearance of organic products are rarely mentioned. Only in Italy, odour is of the same importance as taste. The importance of sensory properties furthermore depends on the context: appearance and odour appear to be the most important sensory attributes when consumers purchase food, while taste and odour are the most important attributes during food is consumed.

Besides this, consumers' perception on sensory quality of organic food strongly varies between products although the taste of organic products is mainly evaluated positively by organic consumers. For appearance, texture and odour, a more heterogeneous picture emerges. Texture and odour of organic food – although mentioned less often – are evaluated positively by consumers. Light users more often referred to negative parameters of organic food, especially with respect to processed food such as dairy, meat and bakery products.

On the one hand, a lack of standardisation with “less regular appearance” and “less perfect shapes” are criteria for organic quality which to some extent are expected by consumers and emerge as a guarantee for superior taste, although consumers are not particularly in favour of such low standardisation. Flaws in the appearance of organic products can be compensated by superior taste and smell. Such expectations and experiences are mainly linked to fruits and vegetables, which are the most dominant product groups in relation with organic sensory experiences, evaluations and expectations.

An important word used to describe the differences between organic and conventional food is “authenticity”. Concerning the attribute taste, consumers show a strong desire to experience taste as it used to be in the past, a more natural or intense taste. This runs in line with the associations and images organic consumers ascribe to organic food. According to most consumers, organic food is associated with small-scale, handmade and natural production and with peasant farming. Consumers' sensory expectations are often linked with childhood memories. Their memories seem to serve as a “personal sensory-quality standard” when taste experiences of childhood or former times are compared with modern day sensory characteristics of food. Consumers expect that organic products should not be standardised and should differ from conventional products in terms of variability and sensory aspects.

Authenticity is experienced and expected as a “strong innate taste” of organic unprocessed commodities such as fruits and vegetables, meat and milk. Consumers furthermore expect processed products such as yogurt or biscuits with a “typical organic recipe and taste” to taste differently to their conventional counterparts. Here, consumers are focusing on ingredients of processed food and link them to higher sensory expectations. Organic food is expected to contain lower levels of certain “unpleasant” ingredients such as salt and fat and is enriched through the use of certain ingredients such as wholemeal flour. In this regard, especially the sweetness of processed products is a relevant issue. Consumers for the most parts link the sweetness of organic products to a different or more “pleasant” type of sweetness. Organic is therefore seen as quality reference and linked to healthier diet.

With respect to particular product groups, organic products are expected to taste and look similar to their conventional counterparts. This especially applies to processed food, and especially products that contain starch (e.g. pasta, rice, polenta), which mainly serve as a side dish as well as “semi-luxury food” (e.g. tea, chocolate, crisps, wine, sweets, candy). Organic side dish is negatively characterised by some consumers e.g. if it is made from whole meal. For some consumers culinary enjoyment is more linked to conventional products (e.g. pasta, crisps, high quality chocolate) and not to organic products. One reason might be that organic is linked with a healthy diet. In contrast, consumers might primarily link semi-luxury food with joy and not with health; therefore the product does not need to be organic. However, consumers would substitute a conventional product if the organic offering would taste similar.

In addition, consumers differentiate between organic quality offered in supermarkets and in whole food stores. According to consumers, organic food in supermarkets is more convenient for consumers preferring sensory sensations close to conventional products but still seek for organic quality. In contrast, organic food provided by whole food stores is directly linked with authentic taste. These examples illustrate that certain knowledge and images impact upon a positive evaluation of sensory attributes. Finally, due to the fact that organic is more expensive, it is expected to taste different.

Considering the interrelation between sensory and non-sensory attributes, some consumers appreciate organic food but have to get used to the organic taste (especially light users), while others state that the superior taste of organic food was the overall reason why they started buying organic food. However, there are also consumers, and especially heavy users, who do not search for sensory sensations as their actions are governed by mentioned non-sensory attributes such as environmental or animal welfare concerns or they experience personal well-being and satisfaction through organic consumption.

Though certain products are preferred in conventional quality, consumers are of the opinion that the organic regulation should not be relaxed in order to adapt organic to conventional sensory properties. Consumers appreciate organic products as they represent naturalness, more sensory intensity and individuality.

Consumers' opinions of sensory marketing differ strongly. Especially German consumers are rather sceptical towards sensory marketing and give priority to other information e.g. ingredients, preservatives, nutrient content, origin of the product which are considered as more relevant with respect to their buying decision. However, this needs to be seen in the context that consumers faced difficulties recalling circumstances when confronted with sensory marketing efforts due to the fact that sensory marketing is hardly deployed as a communication tool.

Consumers who appreciate sensory information refer to the usefulness when deciding between products, when buying a product for the first time or in order to choose the product which fulfils their personal requirements. Marketing information can serve as tool for variety seeking consumers who are willing to expand their experience and to try new products. Consumers appreciate the sensory sensations of organic produce, from old varieties or varieties that are not common or which are only offered in organic quality. Therefore, consumers can expose themselves to new products and flavours. Consumers would also appreciate information about food preparation and consumption. Such information can especially be useful to prevent potential disappointment resulting from potential differences between organic and

conventional food. Consumers who are more involved in food purchase and preparation are more interested in sensory information and thus should be targeted by sensory marketing. Sensory marketing can call attention, highlight differences and support the buying decision with respect to organic food products.

Especially Italian consumers consider messaging by using symbols, images, sounds, noises, etc. as a potential instruments to increase consumer trust. However, sensory marketing should be reliable and objective. Consumers desire to experience natural and authentic organic food, but they are sceptical that such information is provided as a marketing tool and might cause higher consumer prices. Sensory marketing therefore faces challenges to service different expectations and varying preferences.

Finally, a marketing tool is only effective if it has an influence on the consumer behaviour. The study suggests that sensory marketing faces certain limitations. Consumers often notice information on packages only after the purchase decision. However, sensory information may have a long-term effect on their buying behaviour. In addition, consumers realise that organic food may vary due to its low level of standardisation. Consumers might distrust certain sensory information which may not be fulfilled. Thus, a flexible sensory marketing system has the potential to adjust to potential variations.

# 1 Introduction

Europe has a leading position in the organic food and drinks market, with a 54 percent share of global revenues. In recent years there has been a dynamic development of the organic market with growth rates beyond 10 percent a year (Willer et al., 2009). Although Europe has the largest market for organic food and drinks worldwide, it is also a very competitive market (Sahota, 2010). This is partially due to the introduction of organic products in discounters. These discounters offer basic organic products in large quantities at exceptionally low prices (Sahota, 2010). However, many distributors and promoters of organic food take a quality approach, claiming superior taste for their products compared to the conventional alternative. This is a controversial claim and deserves more scientific evidence, particularly as taste is a buying motive for many organic consumers. Since repeat purchases depend on the overall liking of a product, sensory experiences may have an important impact on buying decisions. Knowledge about sensory preferences is crucial for producers and marketers of organic food to offer products and communication strategies which meet consumer expectations.

In the past some efforts have been made to determine, using methods of sensory analysis, whether organic products taste better than conventional ones. Filion and Arazi (2002) revealed that taste is perceived differently in different products or product categories. Previous studies showed that whether organic food is perceived as more or less tasty depends on several factors: e.g. legal restrictions in organic processing may have an impact on sensory matters. Furthermore, consumers' associations in relation with a respective product influence the sensory perception of buyers (Lehmann, 2007). It can be assumed from qualitative consumer surveys in the EU project OMIaRD (Organic Marketing Initiatives and Rural Development) – although it did not only focus on sensory evaluation of organic products – that occasional consumers of organic food especially regard unlikeable taste as one of the main obstacles to buy organic products (Zanoli et al., 2004). However, to our knowledge there is hardly any empirical research which analyses in any detail consumer sensory perceptions of organic food in detail and across different countries.

Within the EU-project ECROPOLIS, consumers' perceptions and expectations will be investigated in detail. The overall objective of the project is to provide and exchange sensory information on organic food to the industry (organic associations, producers, processors, retailers, wholesalers) as well as to consumers. In particular, the hypothesis addressed in work package 4.2, which is presented in this report, is that sensory perception and evaluation of food - beside other aspects such as health - is crucial when consumer decide whether or not to buy organic products. Although research has supported organic producers and marketing initiatives (e.g. with the project "Organic Marketing Initiatives and Rural Development") over the last two decades, little knowledge exists about the perceptions and expectations of consumers with regard to sensory perception of organic food; there has been no study at pan-European level.

For ECROPOLIS a qualitative consumer survey (using focus group discussions) was conducted in the following study countries Germany (DE), France (FR), Italy (IT), Netherlands (NL), Poland (PL) and Switzerland (CH). The objective of the study was

to explore consumers' perceptions, expectations and preferences for specific sensory characteristics such as taste, texture, and colour of organic food. The full objectives are provided in chapter 2. Chapter 3 includes country-specific background information for each study country. Additionally, the importance of sensory aspects of organic food and communication initiatives related to sensory properties is described. In chapter 4 we provide an overview on the methodology of this research followed by the key insights in chapter 5. In the subsequent chapter 6, the results of all case study countries are summarised and compared. In chapter 7 we discuss the main findings of the focus group discussions and draw conclusions from them.

## 2 Objectives

The objectives of the qualitative consumer research within work package 4.2 were to identify organic buyers' perceptions and expectations for sensory attributes. Additionally, the objective was to establish the needs of the different consumer groups in order to contribute to the development of organic sensory marketing strategies. The main focus was on exploring the knowledge of different consumer segments and their preferences regarding differences in the sensory appreciation of organic compared to conventional food and specific sensory characteristics of organic food.

The objectives of WP 4.2 were:

- To explore the range of experiences, expectations and preferences for specific sensory properties of organic food.
- To identify words that are used by consumers to differentiate the taste of organic products amongst themselves and compared to conventional ones.
- To explore 'symbolic' meanings and images which participants relate to sensory characteristics of organic food.
- To identify consumers' sensory expectations and preferences related to the variability and standardisation of organic food.
- To explore consumers' experiences to marketing of sensory characteristics of organic food.
- To identify possible differences in consumers' sensory expectations and preferences between the participating countries.

## 3 Background information

In this chapter, general information about the organic market and consumers of organic food in the case study countries (DE, FR, IT, NL, PL, CH) is presented. The importance of sensory aspects of organic food and communication initiatives related to sensory properties are also described.

### 3.1 Organic markets and consumption

#### France (F)

In France, the organic market grew tremendously in 2008 – by 25 percent to 2,591 million Euros. France thus surpassed the UK and Italy to become the second largest market in Europe. The organic market share, compared to the entire food market in this country was 2 percent in 2008. French consumers spent 41 Euros per capita for organic products in 2008 (Willer and Kilcher, 2010). The organic sales split of 42 percent in multiple retailers and 40 percent in organic food stores show about the same share, although the multiple retailers had the highest growth rates (39 percent) in 2008.

A study of Agence BIO (2009) reveals that the main restriction to purchase organic products remains high prices, according to French consumers (79 percent). Main buying motives are that organic products are perceived as “more natural” because they are cultivated without chemicals (90 percent), “environmentally friendly” (89 percent), “better for health” (81 percent), have a “better nutritional value” (74 percent) and require more labour for production (69 percent), or have a better taste (61 percent). Quality and taste hence remain an important source of motivation for eating organic products, especially for organic consumers (87 percent). Yet this percentage decreased when compared to 2008 (92 percent). A large section of French consumers consider that processed organic food does not contain colourings or artificial flavours (79 percent). The study did not focus specifically on sensory properties nor on sensory expectations towards organic products. However, a better taste could apparently motivate French consumers to increase their consumption of organic products in future, according to 57 percent of the respondents.

#### Germany (DE)

Germany has the largest organic market in Europe with a turnover of 5,850 million Euros (in 2008). The organic market share, compared to the entire German food market was 3.4 percent in 2008. German consumers have spent 71 Euros per capita for organic products in 2008. In recent years, the strong demand for organic products has led to a change in the organic market. Whereas traditional organic bakers, butchers or direct sales did not benefit from the growth of the German market, multiple retailers - including discounters - increased their sales of organic products by 20 percent (57 percent of total sales; Schaak and Willer, 2010). According to Dialego, taste was, after health, the second most important buying motive for consumers of organic food (Dialego, 2007, 2010). However, it must be noted that the relevance of taste as a buying motive has become less important since 2008 after a period of gaining importance between 2005 and 2007 (see Figure 1).

## Motives in favour of buying organic food in Germany

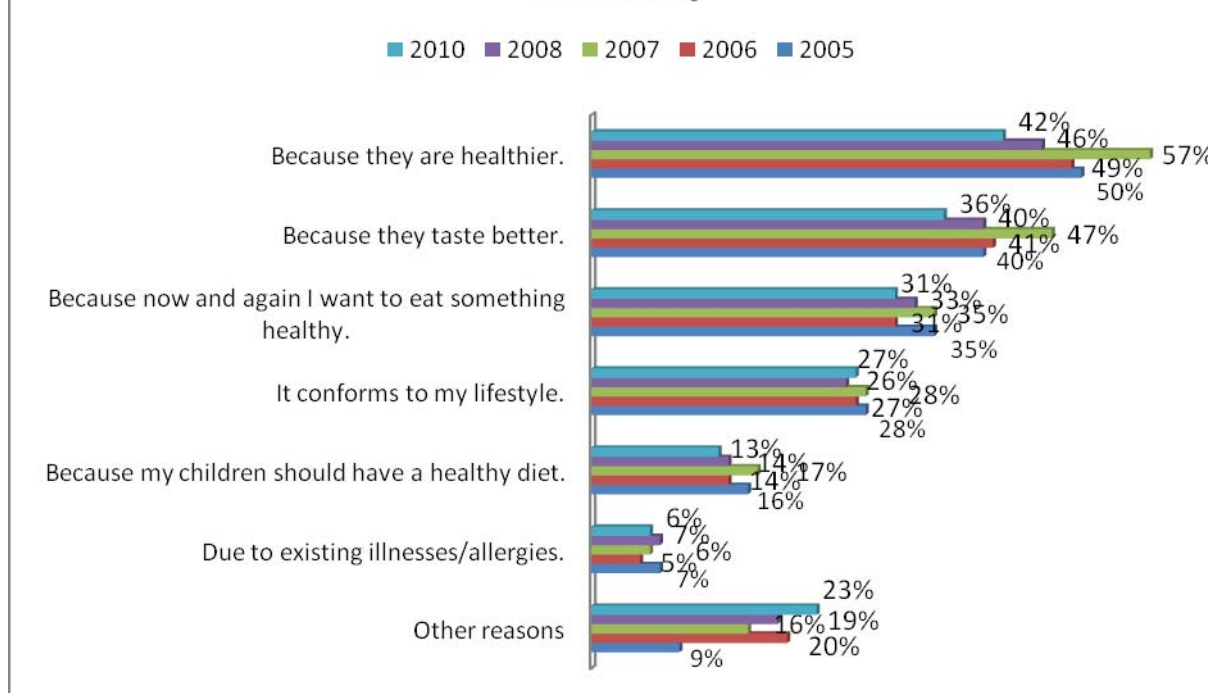


Figure 1: Motives in favour of buying organic food in Germany (Dialego 2007; Dialego 2010)

### Italy (IT)

The Italian turnover of organic products amounted to 1,970 million Euros in 2008. The growth rate of the Italian organic market slowed down to 5.4 percent in 2008 and increased up to 7.4 percent in the following six months of 2009. Generally, organic food represents 3 percent of the overall Italian food consumption. Italy is the sixth European country in terms of per capita organic food consumption (individual shopping of 32 Euros). In 2005, the share of organic food sales in big retail stores was only 39 percent and much lower than in most European countries. However, the share has increased in the last few years (Schaack and Willer, 2010). “Esselunga” is actually the retailer with the highest share on the Italian organic food market (Santucci, 2009). In spite of the world economic crisis, Italian consumers are increasing their consumption of organic food (Ismea, 2010).

From the consumers’ point of view, organic products in Italy are still heterogeneous in their quality (Ismea, 2005). A study of Ismea (2005) revealed that the most important buying motives are “naturalness” (34 percent), “health” (31 percent) and “authenticity” (25.5 percent). It is striking that “better taste” was a buying motive of only few consumers (5 percent). Same applies to “environmental friendly” and “animal welfare” (3 percent; Ismea, 2005).



## **Netherlands (NL)**

In the Netherlands the retail turnover for organic products was 537 million Euros in 2008 (Schaack and Willer, 2010). Consumer expenditure on organic products increased by 12 percent – a rate faster than general consumer expenditure on food. The organic market share has grown from 2 percent to 2.7 percent in 2008 (Biologica, 2009). The per capita consumption of organic food of 33 Euros in 2008 is rather low (Schaack and Willer, 2010).

According to Biologica (2009; a Dutch advocacy for organic producers, manufacturers, traders and retailers) 98 percent of Dutch consumers have heard of organic food, and the products that foremost come to their mind are vegetables (55 percent), meat (33 percent) and fruit (31 percent). Dry products are hardly mentioned in the context of organic food. Organic fresh products (i.e. vegetables, fruit, potatoes, eggs, meat, dairy and bread) seem to be more popular and more readily associated with 'organic' than processed products (Tacken et al., 2007; see also Reinders et al., 2009).

Reinders et al. (2008) found a consistent pattern in the results of the reviewed studies in consumer motivations: taste, health, and friendlier for environmental and animal friendly (Borghuis et al., 2005; Meeusen et al., 2008; Meeusen et al., 2003). Consumers of organic products are motivated by hedonistic values rather than altruistic ones (Weening, 2005; see also Reinders et al., 2009; Van der Heijden et al., 2005). For instance a number of studies recommend that in the marketing of organic products, one should appeal to the trends of healthy, pleasurable and varied food (De Jong, 2004). Price was generally mentioned as the main barrier to buying organic food (Borghuis et al., 2005; Meeusen et al., 2003). However, price reductions have shown to be of limited effect in boosting sales (Baltussen et al., 2006; Wijnands et al., 2005).

## **Poland (PL)**

The organic food market in Poland is still at an early stage of development. Since Poland acceded to the EU in 2004 organic agriculture has grown. In 2008 more than 300,000 hectares were organically managed across nearly 15,000 organic farms (Willer and Kilcher, 2010). As a result, the supply of organic food is steadily increasing – however, the share of organic products from the domestic market of less than 1 percent is still limited. The organic market had a turnover of 50 million Euros in 2006. As a consequence, the per capita consumption of organic food amongst Poles of just one Euro is very low (Schaack and Willer, 2010).

However, in the structure of organic sales channels, specialised organic food shops and large conventional retailers are increasing their market share while direct sale routes decline. In Poland, the "TESCO" supermarkets became involved in the sale of organic products in 2004 (Moschitz et al., 2004). In contrast, specialist organic food shops still have many disadvantages like unfavourable store location, low share of organic certified food and high prices due to relatively high gross margins (Żakowska-Biemans, 2008). There is a new trend observed in Poland to locate specialised organic food shops in prestigious shopping centres, often adjacent to supermarkets. Organic products in such shops are positioned as luxury goods. Most of the specialised organic food shops operate independently. There is no apparent trend towards vertical integration in organic retail sales as a result of both organisational weakness as well as reluctance to cooperate. At present large conventional retail

shops offer mainly processed products and a very limited assortment of organic vegetables – organic fruits are still unavailable in this channel. Large retail stores are likely to continue to gain market share at the expense of organic food shops, given the consumer trend towards one-stop shopping (Żakowska-Biemans, 2005).

The majority of organic food consumers in Poland buy organic food on an occasional basis due to the limitations resulting from the size and structure of organic supply and the high price of organic products. Dedicated heavy users of organic products face problems in buying organic food since many products are still unavailable in organic quality. “Health” and “safety” are the most vital buying motives of organic consumers in Poland (Tyburski and Żakowska-Biemans, 2007). In contrast to other European countries, attributes such as “animal welfare” are far less important in the buying decision (Żakowska-Biemans, 2008) whilst taste was not mentioned at all.

### **Switzerland (CH)**

In Switzerland the organic market share of 4.9 percent was the third-highest share within Europe after Denmark and Austria in 2008 (905 million Euros turnover). More than two thirds of Switzerland’s organic sales take place in stores of the two biggest multiple retailers “Coop” (50 percent) and “Migros” (24 percent). Specialised food shops count for 16 percent of the turnover of organic products whereas the direct marketing share of 5 percent is comparatively small (Willer and Kilcher, 2010).

In recent years the image and positioning of organic products in Switzerland has changed towards mainstream consumers. Approximately 80 percent of Swiss consumers buy organic food at least occasionally (Stolz, 2010). Nevertheless, heavy users still contribute to the biggest turnover in the Swiss organic market. One important buying motive has been consumer preference for Swiss products (Padel et al., 2009). In a study of GfK (2009) 48 percent of Swiss people answered that they would purchase organic food to support local products and producers (GfK, 2009). Above all, “health” (37 percent) was an important buying motive in Switzerland followed by the buying motives of “environmental protection” and “animal welfare” (Nielsen 2008).

Sanders and Richter (2003) investigated the influence of socio-demographic factors on consumption and purchasing motives with respect to organic dairy products. One key finding of their study was that the most important motive for buying organically produced dairy products was animal welfare, followed by personal health. Furthermore, environmental concerns as well as positive sensory attributes (genuine taste) and the preference for organic food in general could be identified as relevant buying motives. With regard to socio-demographic impacts, the results showed that the buying decision and the motivational profile depend on income and the existence of children in the consumer’s family, as especially this segment prefers organic food. Households with a high income bought organic food mainly due to altruistic and hedonistic reasons such as environmental awareness and animal welfare as well as for food quality and taste. Households with a lower income primarily bought organic food for animal welfare and health reasons. The authors concluded that animal welfare is in general the most important motive for the consumption of organic dairy products.

### **3.2 Knowledge on consumers' sensory experiences and preferences of organic food**

In the following sections the outcomes of a literature review on consumers' sensory experiences and preferences of organic products in the respective case study countries are presented.

#### **Germany (DE)**

There are numerous studies stressing the importance of sensory aspects with regard to organic food choice. In particular, studies that highlight the purchasing motives associated with organic food products underline the growing relevance of sensory related aspects during recent years.

A study carried out by Kuhnert et al. (2003) investigated the relevance of different purchasing motives related to organic food consumption. It showed that taste was seen as one of the most important buying motives besides other aspects such as health, animal welfare, freshness etc. Another finding of this survey was that most of the respondents ascribe a better taste to organic products compared to their conventional counterparts.

#### **France (FR)**

The perception and consumption of organic products in France has been monitored since 2003 by CSA / Agence Bio. The 2009 report (Agence Bio) reveals that:

Organic products are perceived as: (i) More natural because they are cultivated without chemicals (90 percent); (ii) A way to help preserve the environment (89 percent); (iii) Better for health (81 percent); (iv) With better nutritional value (74 percent); Requiring more labour for production (69 percent); (v) Having a better taste (61 percent), with this last perception being important to 84 percent of heavy organic consumers.

Quality and taste remain an important source of motivation for eating organic products, especially for organic consumers (87 percent). Yet this percentage decreased as compared to 2008 (92 percent).

A large part of French consumers consider that processed organic foods do not contain colourings or artificial flavours (79 percent). The survey otherwise does not focus specifically on sensory properties nor on sensory expectations towards organic products.

#### **Italy (IT)**

Literature review shows a range of quantitative research that investigated Italian organic consumers (Canavari et al., 2007; De Magistris and Gracia, 2008; Mauracher, 2007; Pellegrini and Farinello, 2009). It is clear from the literature that the increase of organic food consumption in the Italian market has been driven by the emerging concerns about food safety, human health protection and environmental issues (Carboni et al., 2000). However, only a few studies have been conducted focusing specifically on consumers' sensory experiences and preferences for organic food at a national level.

In a study performed by Valli and Molinari (2008) the objective was to investigate purchase and consumption preferences of consumers regarding organic products. The survey was carried out amongst 200 staff members of the University of Bologna. The results of the study highlighted that for organic products, the most important motivations for purchasing are “safety”, “healthiness”, “superior quality” and “goodness” in terms of taste and flavour. Considering attributes which define quality and safety for organic products, both consumers and potential consumers of organic products considered “goodness” and “superior taste” as very important attributes to define organic food quality, while “appearance of the product” seemed to be not relevant for either groups.

Another Italian survey investigated consumers’ behaviour and perception towards organic extra virgin olive oil (Bracco et al., 2009). The survey highlighted that “healthiness” and “safety” were the most important drivers for food choices, and that “flavour” was the most relevant intrinsic characteristic for organic extra virgin oil, while other sensory aspects (such as visual aspect, odour and colour) were less important.

Interesting results emerged from a study designed to assess the effect of information about organic production on “Pecorino” cheese liking (Napolitano et al., 2009). The results of the blind tasting (degustation) with no information about the products showed that there is no difference in consumers’ preferences between conventional and organic Pecorino cheese (maybe because processing reduces the sensory differences between the organic and the conventional cheese). In a subsequent step of the study, consumers’ were informed about the different production systems of the two products and asked to express their expected liking: organic Pecorino cheese appeared to be superior. However, the following sensory test on the organic Pecorino cheese, with information about the production system, highlighted that this cheese was worse than expected by consumers. The difference between blind acceptability and expectations on one side, and the significance of the difference between expected and real acceptability on the other side, showed that even if information and expectations can positively affect and orient consumers’ behaviour towards organic product consumption, sensory aspects seem to be still very relevant in filling the gap between expected and real acceptability (Napolitano et al., 2009).

A qualitative study performed in Italy and Germany by means of focus groups in 2007 (Vairo and Zanolli, 2009) was aimed at analysing the quality of processed organic vegetable baby food, and involved female consumers of organic food (both regular and occasional). What emerged from the analysis is that when considering sensory elements (visual aspect, colour, shape, odour, flavour), the Italian mothers involved in the focus groups stated that they did not remark on any particular specification, but they did show a higher attention to origin, ingredients, label and packaging.

Finally, the QualityLowInputFood project (QLIF), conducted focus group discussions on consumer attitudes to quality and safety of organic and low food inputs it emerged that for all the consumers the higher quality of organic food is recognisable through taste, which is considered authentic and appetising. Together with taste, good texture seems to be a peculiar attribute which gives consumers pleasure in eating organic products. The appearance of organic food has also been considered during these focus groups: organic food appearance is perceived as poor, but despite this impression, the evaluation for the taste of organic food (especially fresh products) is positive, and reminded some people of how fresh products used to taste (Midmore et al., 2005).

The relevance of the hedonic aspect of eating, involving sensory perceptions, has been taken into consideration by some Italian authors (Laureati et al., 2006). In their studies they evaluated the modification of food choices alongside the ageing of the population, taking into consideration traditional food. Other authors highlighted the relevance of sensory aspects in a survey between four categories of consumers, aimed at identifying the qualitative dimensions of typical products. Among sensory aspects, taste has been identified as a “dimension of quality” of the typical products by all the groups of consumers (Gabbai et al., 2003).

In some cases, sensory analysis addresses organic food products, and takes into account specific sensory attributes of organic foods. Although the literature mainly refers to sensory analyses concerning fresh products, in Italy some initiatives have been taken, which aim at enhancing sensory analyses and focusing on the sensory aspects of typical processed products (both organic and conventional), like wine, extra-virgin olive oil and cheese (e.g. Parmigiano-Reggiano).

### **Netherlands (NL)**

According to the Dutch project partners, there have not been studies on consumers' sensory experiences and preferences conducted in the Netherlands that are available in the public domain. Wageningen University & Research has conducted several such studies, but always privately commissioned by manufacturers.

### **Poland (PL)**

Taste is highly ranked as a main motive to buying organic food among Polish consumers (Tyburski and Żakowska-Biemans, 2007). However, various dimensions of organic food sensory properties have not yet been studied from a consumers' perspective. There is a general trend observed in the strategies of Polish food companies to introduce innovation with a focus on taste. According to the PMR Report (2007), they have introduced in recent years food innovations that are characterised by popular new taste combinations coming from countries such as Thailand, Italy or Spain. These products address the group of open-minded, curious people who are willing to buy new sensory compositions of (un-) processed food. Another trend innovation refers to “old Polish” traditional recipes or products with additional health or dietary values. In terms of the organic food market, an orientation to tradition and traditional food production methods prevails.

### **Switzerland (CH)**

Within the European project QLIF consumer perception and evaluation of different quality criteria of organic versus conventional food was investigated by focus groups in Germany and Switzerland (Stolz et al., 2009). The study focussed on yoghurt, bread, tomatoes, eggs and apples. Stolz et al., (2009) found that the consumers' interest in food was focused mainly on the last step of the production process. In both countries, Germany and Switzerland, sensory attributes were ranked as important for the judgment of food products. Therefore, taste was the most important criterion in all the considered products, apart from eggs. The quality of eggs was not determined mainly through sensory attributes, but by the system in which they were produced. In the case of apples, the consumer linked the taste to the variety while in tomatoes the variety was often unknown. The consumers in all discussion groups had different

opinions about organic yoghurt: some consumers expected organic yoghurt to be more savoury than conventional. Others did not think that there is a difference in taste. Sensory attributes were also very important for bread; participants described the ingredients as the most determining factors.

In a study from Egger et al. (2010) sensory preferences and acceptance of 11 apple varieties were tested with Swiss consumers. The focus of this investigation was the expectation in the appearance and the taste of different apple varieties that are currently developed, newly introduced or already well established on the fruit market. Another focus was the identification of preferences based on certain sensory apple characteristics and the clustering of consumers related to these preferences. Above all, new varieties showed significantly higher acceptance ratings than traditional Golden Delicious and Jonagold. With the analysis of the data, three clusters could be identified that showed differences in their variety preferences: one cluster preferred sweet to rather acidic, aromatic and crisp apples with a firm fruit flesh, tolerating a slightly lower fineness of the fruit flesh. A second cluster favoured sweeter, fruity and aromatic apples, partially with a floral aroma and a higher fineness of the texture, whereas they were less demanding on firmness. The preferences of the third group were intermediate. In the same way, all groups rejected soft and mealy apples with low aroma intensity and a tendency to a grassy aroma.

### **3.3 Importance and communication initiatives of sensory aspects**

In the following section, country specific information about the importance of and communication initiatives related to sensory aspects of food is presented.

#### **Germany (DE)**

Within the framework of the National Nutrition Survey II (Nationale Verzehrsstudie II), almost 20,000 consumers (aged 14-80 years) were questioned between November 2005 to January 2007 about their nutritional and dietary habits (Max-Rubner-Institut, 2008). The results of this survey show that “taste” is the most important criterion for the buying choice of a particular food product. This aspect was considered important or very important by 97.2 percent of the respondents (97.5 percent women and 96.9 percent men); this was followed by “freshness” with 96.9 percent (98.5 percent vs. 95.3 percent), “minimum durability” with 86.7 percent (89.6 percent vs. 83.7 percent) and “healthiness” with 83 percent (89.2 percent vs. 76.7 percent). In comparison to these aspects, ethical motives such as “species-appropriate husbandry” (total 69.8 percent) and being free of gene technology (total 67.7 percent) played a less important role in consumer decisions (Max-Rubner-Institut, 2008).

In the conventional food sector, there are currently numerous marketing initiatives that emphasise the sensory quality of products. For instance, players in the multiple retail sector such as supermarkets and discounters are developing their own gourmet private labels that - among other things - take into account sensory aspects of those products. To illustrate this development, Figure 2 shows some products of gourmet private label from REWE.



Figure 2: Products of the gourmet private label “REWE Feine Welt” (bbdo 2010)

In the organic sector in Europe, growing importance is being attached to sensory aspects when it comes to product positioning and marketing strategies. One initiative that should be mentioned in this context is the German research project “Öko-Geschmackssiegel” (organic taste label). The main aim of this research was the development and implementation of a sensory evaluation model for organic food. Within the whole German food sector this initiative was the first attempt to investigate the sensory differences between processed conventional and organic food by developing sensory descriptions by descriptive sensory analysis methods in order to make potential differences visual. The sensory properties of seven different products were evaluated by sensory testing. The study revealed that there are differences in the sensory properties of the products, depending on recipes, ingredients and production methods (Buchecker and Mahnke-Plesker, 2003). But perceptions vary strongly depending on the respective products. This means that differences – in the case of some products – can be perceived positive whereas others attach a negative image to organic products.

### France (FR)

The taste of food has long been of prime importance in France. Taste usually appears to be the first determinant of food choices in consumer surveys. The quality of taste is certified in France by the “Label Rouge”, first awarded to meat and poultry in 1965 and now extended to other foods. Numerous labels and communication initiatives also relate (at least in part) to the sensory characteristics of food products, among them the world-famous Appellations d’Origine Contrôlée (i.e. AOP in the EU). The importance of taste in public health issues is now increasingly recognised by the French authorities. The French National Program for Nutrition and Health has now,

for example, included food taste as a key factor in its work program (Lettre de Mission PNNS, 2009).

To date and to our knowledge, no public communication initiative in France specifically focused on the taste (or more generally, the sensory properties) of organic products.

## **Italy (IT)**

In Italy, the food industry, retailers and others have started to take into account sensory attributes in the product development of food innovations. This is within a framework which involves industrialisation and standardisation of food production according to quality and safety standards. The relevance of sensory aspects aiming to highlight the difference of special food products (like traditional and organic products) is becoming fundamental, due to the perception of such aspects by the consumers (Cayot, 2007).

Sensory aspects have also been taken into deep consideration in the research “pillars” of the Italian Food for Life platform, promoted by the association Federalimentare and involving the scientific board SSICA, an Italian public body for applied research in food preserves industry. The first pillar of the platform, concerning consumer science, aims to enhance the research and technological innovation in the food industry. This should contribute to the development and the competitiveness of small and medium enterprises (SSICA, 2010). In this framework, the evaluation of consumer eating habits and eating choice models are closely connected with sensory analysis, performed by SIQUAL, the Italian laboratory for food safety and quality. In its activities, SIQUAL develops sensory analysis and consumer science techniques in order to perform more effective food quality control and assurance, with the main objective being to detect interrelations and cause-effect relationships between chemical and physical parameters and the sensory properties of different kinds of food (SSICA, 2010).

Many initiatives addressed sensory aspects of Italian food. The following paragraphs list some of the most important initiatives:

SLOW FOOD is an international association founded in Italy in 1986. Some of its objectives are related to sensory aspects of food such as – to train people about nutrition and sensory attributes of food, to safeguard local food production, to promote a food consumption which respects environment, tradition and local culture. SLOW FOOD organises seminars, events (e.g. “Salone del gusto”, “Cheese”, etc.) and specialises in food-related subjects, in which people learn to evaluate food in terms of taste (SLOWFOOD, 2009). SLOW FOOD also promotes the realisation of “Laboratories of taste”; the newest of these are organised with the collaboration of the University of Gastronomic Sciences of Pollenzo and Colorno.

FEDERBIO is the unitary representative organisation of the organic and bio-dynamic sector in Italy. The association and other stakeholders have organised meetings in the IKEA restaurants in Emilia-Romagna, to perform food tasting and discussion about organic agriculture (FEDERBIO, 2010).

Sensory preferences and perceptions have also been used in order to promote some Italian local / traditional products, or to create a deeper link with the region of origin. In the framework of a regional project concerning the supply chain of the “Abate Fetel” PGI pear from Emilia-Romagna, some public and private institutes organised



"Laboratories of taste" for consumers. These were aimed at defining the distinguishing sensory aspects of this product and consumers' preferences, in order to enhance the value of typical regional productions. Similarly, the Province of Macerata (Italy) defined an agreement with the CIAS (Centro Italiano di Analisi Sensoriale – Italian Center for Sensory Analysis) in order to exploit sensory analyses on local food products. The aim of these analyses was to inform consumers about the intrinsic quality of the products and their link with the territory as well as the local traditions. The objective of the work was also to add value to traditional and local productions, to enhance consumer trust and to allow a better positioning of the products on the market.

## Netherlands (NL)

In 2005, the Ministry of Agriculture, Nature and Food Quality launched a campaign with the slogan "Biologisch. Dat proef je, dat merk je" ("Organic. You taste it, you notice it"). The slogan informed consumers that by buying organic products, one contributes to environmental protection and to animal welfare. In 2006, the Ministry, together with other partners, launched a campaign with the slogan "Proef de aandacht" ("Taste the attention"). A number of famous chefs contributed to this campaign by emphasising the quality of organic products.

In 2009, the supermarket chain with the largest market share, Albert Hein, introduced a new home brand "Puur en Eerlijk" ("Pure and Honest") (see Figure 3). This brand combines products that are "produced and purchased with extra care for people, animal and nature". These products are organic, fair trade, animal friendly, in the case of fish sustainably caught, or in the case of detergents, ecologically produced. The products don't need to have all these characteristics simultaneously: for instance, fair trade chocolate is not necessarily organic. Consumers can recognise these products easily by the characteristic colours on the packaging. Although organic brands have been on the Dutch market for decades, and despite most supermarkets carrying organic products, this is so far the most important attempt by a leading supermarket chain to market organic products. Albert Hein introduced its house brand, it had a campaign in its own stores and magazines, which emphasised that these products are produced with extra care, and that one can taste this difference. It explicitly linked organic production to sensory experiences.



Figure 3: Example of a communication initiative by Albert Hein ([www.ah.nl](http://www.ah.nl))

The Albert Hein chain has an established system of information on sensory characteristics of wine. This information system is very well known in the Netherlands: when we brought up this topic in the focus group discussions, respondents spontaneously referred to it and everyone was familiar with it. This sensory information system distinguishes 21 flavours, four for red, white, sherry and port, and three for rosé. Every kind of wine has its own colour (for instance red for red wine) and the shades of this colour indicate the different flavours of that sort. In addition, every flavour has two or three keywords. These codes are printed on the shelf price tags, and in material announcing offers or recipes (see Figure 4).



Figure 4: Colour codes to indicate different flavours of red wine used by Albert Hein ([www.ah.nl](http://www.ah.nl))

## Poland (PL)

There are hardly any initiatives related to sensory food marketing in Poland. For luxury goods such as wine, sweets or chocolate, there are certain sensory claims communicated but these products are mainly of foreign origin and they do not reflect the strategies of Polish food companies. Polish consumers are informed about sensory characteristics in shops or on product packaging related to processing methods or origin of the food. Any reference to taste properties doesn't go beyond basic information such as intensity of taste (spicy, mild etc.) and comparisons to similar tastes. The organic food processing sector in Poland is now responding to consumer demand for traditional processed food with special taste properties and communicates such claims on organic food labels (Figure 5). One of the examples is organic meat processing that is often combined with traditional food production and communicated to consumers as “traditional organic meat products” (Figure 6).



Figure 5: Organic food label with claim referring to traditional “origin” and illustration of “traditional and organic meat products” (www.jasiolka.com)



Figure 6: Information on organic and traditional meat processing, included on the internet site of one of the leading SMEs in organic meat processing (www.jasiolka.com)

### Switzerland (CH)

Swiss retailers use basic information related to sensory attributes for some loose products e.g. potatoes, apples or cheese in food marketing. Specific sensory information can be found attached to specific luxury products such as wine or chocolate. For example, the Swiss chocolate producer Lindt provides sensory information and consumption advice for chocolate with 99 percent cacao content, printed on the packaging of the product (see Figure 7).



Figure 7: Lindt chocolate (99 percent cacao content) with sensory information and consumption advice (photograph: L. Baumgart, 2009)

The Swiss organic sector has recently made efforts to improve the sensory quality of organic products and to communicate these claims to organic consumers. In particular the Swiss organic farmers' association – Bio Suisse – has added sensory issues to its quality marketing campaign. The association has several expert commissions that advise and support the executive board. One of them is the "Processing and Trade Commission" which is responsible for all issues concerning food processing, e.g. sensory standards and labelling. The association has formulated processing principles that are implemented in the Bio Suisse regulations which strongly influence the sensory properties of the products. One principle is that a product should be authentic and contain only ingredients which consumers would expect to be used. One example for this restrictive principle is Bio Suisse fruit yogurt where organic beetroot juice as a colouring agent is not allowed in the production process. The second principle demands minimal processing to sustain the sensory characteristics of the respective product. Only ingredients or additives that are indispensable are allowed, while substituting an expensive processing step with a cheaper additive is forbidden.

In the past, there was a high variation in the sensory quality of organic products, which ranged from excellent down to products that were unpalatable. Nowadays the sensory quality level of Bio Suisse products has risen due to the association actively promoting a quality approach. One promotional activity of Bio Suisse on the sensory quality of organic products is an annual sensory award. Four years ago, Bio Suisse established such a testing procedure for all its products (the products are divided in three product groups; every year one group is tested). So far, it is too early to prove the success of this approach with objective sensory data. However, the independent feedback of the sensory testing and results certainly stimulates the producers to improve the sensory quality of their products.

As the marketing department of the association is firmly convinced that sensory marketing is a promising strategy, Bio Suisse introduced a new label ("Gourmet-Knospe") for Bio Suisse products in 2009 with a defined superior sensory quality (see Figure 8). The association is the first within Europe to have developed a segmentation approach based on superior sensory attributes. The new label aims to communicate the superior sensory properties of the respective product and only products that pass sensory testing can use the label.



Figure 8: "BioGourmet" label from Bio Suisse used as to label products with superior sensory properties (Bio Suisse, <http://www.bio-suisse.ch/>)

In general Bio Suisse is trying to satisfy consumers with honest and authentic products but the effects of this long-term strategy are difficult to measure. The strategy is mainly based on a differentiation from conventional processing, while sensory differentiation compared to "conventional taste" is not intended by the association.

## 4 Methodology

To investigate consumers' perceptions and expectations of organic taste, the qualitative market research method of focus group discussion was chosen. This method is presented in the subsequent chapter 4.1 and is followed by an overview of the focus group design in chapter 4.2.

### 4.1 Focus group discussion – a qualitative market research method

In market research there exist two general approaches, qualitative and quantitative market research. Quantitative market research is based on formalised standard questions and predetermined responses (Hair et al., 2006). It uses numerical data and is often aimed at proving hypotheses. In contrast to this approach, qualitative market research uses explorative designs and aims to get a deeper insight into the background, context and reasons for facts and observations. Qualitative market research is especially suited to exploring new issues. It generally uses smaller sample sizes than quantitative research (Hair et al., 2006). Qualitative methods are especially useful to investigate consumers' perceptions, attitudes and expectations regarding a certain product.

In this study, a qualitative market research approach was chosen on account of the research objective to explore consumers' perceptions and expectations concerning the largely unexplored topic of organic taste. The focus group method used in this survey is the most common qualitative method (Hair et al., 2006). In practice, groups of 6-12 participants (Kepper, 2000) are invited for an interactive and spontaneous discussion usually lasting for about 1.5 hours (Hair et al., 2006). Usually, a discussion guideline is used in order to structure the focus group and to ensure comparability in the analysis of data (Kepper, 2000). The method does not simply rely on a fixed set of questions, as its success depends on group interaction: consumers tend to show less reluctance to express their opinions towards a topic or a product when participating in a group discussion. In addition, the method is appropriate for (Hair et al., 2006):

- identifying hidden information requirements;
- providing data that facilitates better understanding of results from other quantitative studies;
- revealing consumers' hidden needs, wants, attitudes, feelings, behaviour, perceptions and motives regarding services, products and practices.

As the aim of the study was to investigate consumers' perceptions, associations and attitudes concerning organic taste, the focus group method is especially suitable for this investigation.



## 4.2 Survey design

This section contains a description of the design and the performance of the focus group discussions (FG).

### 4.2.1 Recruitment and composition of focus groups

In each study country, 4-5 focus groups were conducted making a total of 28 focus groups. For each focus group discussion a number of 6-10 participants had to be recruited, 6-11 participants attended the FG (see Table 1). The **recruitment** was carried out by the partners themselves (DE), by subcontractors e.g. market research companies (NL, PL), partner institutions (DE, IT, CH, FR) e.g. sensory and consumer science laboratory (FR), or in cooperation with a food retailer (IT). The recruitment was done by using a common questionnaire in each country (see Appendix 1). The questionnaire included screening questions to identify suitable consumers.

People were excluded if they were not interested in the discussion topic or worked in professions related to food.

Consumers were asked to categorise their consumption frequency of organic food; only people that stated they consumed organic products – at least occasionally – were asked to participate in the survey. The participants of the FG were consumers belonging to two different target groups:

**Heavy users** of organic food: frequent consumption of organic food

**Light users** of organic food: occasional consumption of organic food

The focus group discussions were conducted with these two consumer segments of heavy and light users separately, except in the Dutch FG that were all conducted with mixed consumer segments. Where the groups of heavy and light users were not separated by discernable patterns between the two, target groups were not identified by the partner after a first focus group was conducted. Some participants overestimated their consumption frequency of organic food in the recruitment questionnaire, as FG in some case studies (CH, NL) showed that people consumed less organic products than they had originally claimed. This could also explain why to some extent it was difficult to focus in the discussions on the topic of real experiences related to sensory properties of organic food.

Furthermore, relevant recruitment quotas for socio-demographic characteristics of gender and age were considered for the composition of each focus group:

**Gender:** men = 33 percent, women = 66 percent

**Age:** 18-45 = 50 percent, 46-75 = 50 percent

To facilitate their participation, consumers' were paid a service charge for the attendance of the FG.

In most FG the group size was above the minimum number of participants. However, in Germany, one FG could only be conducted with 5 consumers. For reasons of over recruitment one of the Swiss FG was conducted with 11 consumers. In most cases the focus group composition fulfilled pre-defined socio-demographic and food consumption criteria with regard to occasional organic food consumption, age, gender and employment.

**Table 1: Composition of Focus groups in case study countries considering age and gender**

Country	FG number	Heavy users = H / Light users = L	number of participants	% female	% male	% 18 to 45 years	% 46 to 75 years
DE	1	L	9	89	11	33	67
	2	L	5	100	0	20	80
	3	L	9	78	22	100	0
	4	H	7	71	29	71	29
	5	H	9	78	22	44	56
		<b>Total</b>		<b>39</b>	<b>82</b>	<b>18</b>	<b>56</b>
FR	1	H	9	78	22	78	22
	2	H	6	50	50	17	83
	3	L	7	43	57	71	29
	4	L	7	57	43	57	43
		<b>Total</b>		<b>29</b>	<b>57</b>	<b>43</b>	<b>56</b>
IT	1	L	8	63	38	50	50
	2	H	8	75	25	50	50
	3	H	9	56	44	56	44
	4	L	6	50	50	50	50
	5	L	10	60	40	50	50
		<b>Total</b>		<b>41</b>	<b>61</b>	<b>39</b>	<b>51</b>
NL	1	4H / 3L	7	71	29	57	43
	2	4H / 5L	9	67	33	44	56
	3	3H / 5L	8	75	25	63	38
	4	6H / 2L	8	75	25	50	50
		<b>Total</b>		<b>32</b>	<b>72</b>	<b>28</b>	<b>47</b>
PL	1	L	7	43	57	57	43
	2	H	8	75	25	38	63
	3	H	7	57	43	57	43
	4	L	8	63	38	88	13
	5	L	6	67	33	33	67
		<b>Total</b>		<b>36</b>	<b>61</b>	<b>39</b>	<b>56</b>
CH	1	H	6	50	50	17	83
	2	L	11	45	55	45	55
	3	L	8	50	50	13	88
	4	L	7	57	43	57	43
	5	H	10	80	20	20	80
		<b>Total</b>		<b>42</b>	<b>57</b>	<b>43</b>	<b>31</b>

FG = Focus group discussion; H= heavy user; L= light user

In some of the case study countries the recruitment quotas differed (see Table 1). Concerning gender, in many FG female participants were over represented – in one group with light users no men attended at all. In contrast to this, in France, Italy, Poland and Switzerland in most FG male participants were slightly over-represented with a maximum of 57 percent (FR, PL). Likewise, the quotas of age were not balanced in all FG: participants in one German group of light users were all in the age cluster of 18 to 45 years old consumers. In Poland the composition of two FG with light users was unbalanced as the share of young consumers (18 to 45 years) was either too low (13 percent) or too high (88 percent). In three of the Swiss FG the age

cluster of 46 to 75 years old participants was significantly over represented (ranging up to 88 percent in one light user group). In contrast in the French FG the age cluster of 46 to 75 years old participants was underrepresented. Furthermore, some of the recruited participants in Switzerland and Italy studied or worked in the food sector and were not excluded as they should have been in the recruitment procedure. However, there was no negative influence reported on the FG.

#### 4.2.2 Location and equipment

The focus group discussions (FG) were mainly conducted during autumn 2009 in the six case study countries. In Italy, each FG was held in a different town. In the Netherlands they were conducted in two towns whereas in France, Germany, Poland and Switzerland they were all held in one location in each country. The FG took place in or nearby central towns with a potentially high proportion of organic food consumers. The French focus groups were carried out in Massy on November 20<sup>th</sup>, 25<sup>th</sup> and 30<sup>th</sup> 2009 and February 9<sup>th</sup> 2010. The German focus groups took place in Göttingen on October 19<sup>th</sup>, 20<sup>th</sup> and 21<sup>st</sup>, the Italian focus groups were conducted in Trieste, Genoa, Rome, Bari, Matelica on October 27<sup>th</sup> and November 10<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 27<sup>th</sup>. In the Netherlands FG took place in Wageningen on October 6<sup>th</sup> and 15<sup>th</sup> and in Arnhem on October 8<sup>th</sup>. In Poland they were held in Warsaw on October 16<sup>th</sup>, 17<sup>th</sup> and 24<sup>th</sup> and November 6<sup>th</sup>. The Swiss focus groups were conducted on September the 27<sup>th</sup> and 30<sup>th</sup> in Wädenswil (see Table 2).

**Table 2: Location and date of the focus group discussions in 2009**

	DE	FR	IT	NL	PL	CH
FG 1	Oct. 19 <sup>th</sup> in Göttingen	Nov. 20 <sup>th</sup> in Massy	Oct. 27 <sup>th</sup> in Trieste	Oct. 8 <sup>th</sup> in Arnhem	Oct. 16 <sup>th</sup> in Warsaw	Sept. 29 <sup>th</sup> in Wädenswil
FG 2	Oct. 19 <sup>th</sup> in Göttingen	Nov. 25 <sup>th</sup> in Massy	Nov. 10 <sup>th</sup> in Genoa	Oct. 8 <sup>th</sup> in Arnhem	Oct. 17 <sup>th</sup> in Warsaw	Sept. 29 <sup>th</sup> in Wädenswil
FG 3	Oct. 20 <sup>th</sup> in Göttingen	Nov. 30 <sup>th</sup> in Massy	Nov. 12 <sup>th</sup> in Rome	Oct. 6 <sup>th</sup> in Wageningen	Oct. 24 <sup>th</sup> in Warsaw	Sept. 30 <sup>th</sup> in Wädenswil
FG 4	Oct. 20 <sup>th</sup> in Göttingen	Feb. 11 <sup>th</sup> 2010 in Massy	Nov. 13 <sup>th</sup> in Bari	Oct. 15 <sup>th</sup> in Wageningen	Oct. 24 <sup>th</sup> in Warsaw	Sept. 30 <sup>th</sup> in Wädenswil
FG 5	Oct. 21 <sup>th</sup> in Göttingen	---	Nov. 27 <sup>th</sup> in Matelica	---	Nov. 6 <sup>th</sup> in Warsaw	Sept. 30 <sup>th</sup> in Wädenswil

FG = Focus group discussion

One facilitator and one assistant were present at the FG. Facilitation was done by partners on the basis of the focus group guidelines, which included relevant technical advice and information about the role of the facilitator. Voice recorders (and in some countries a camera), were used as documentation tools. The assistant wrote down the statements assigned to the respective participants as well as non-verbal communication and visualised senses that might have been mentioned in the beginning of the FG. Furthermore, the assistant handed out the questionnaires (see Appendix 2 and 3) and distributed any food samples at the end of the discussion.



### 4.2.3 Conducting focus group discussions

FiBL, in collaboration with its partners involved in this research, prepared a focus group guideline (see Appendix 4). The aim of the guideline was to provide a structure for the focus group procedure, including a time frame, which was about 1.5 hours, and the formulation of the key questions to be discussed. Facilitators were called upon to follow the instructions in the guidelines in order to ensure the greatest possible reduction in bias between the case study countries. As the guideline was prepared in English, it was translated by the partners into native language.

After a short semi-standardised introduction about the aim and the procedure of the FG, consumers were asked to complete an initial questionnaire about their images, experiences and expectations related to sensory aspects of food to introduce a reflection process and to place the focus on the discussion topic. In the Dutch case, consumers started to ask questions to the moderator and talked among themselves about the questions and answers while filling out the questionnaire. Hence the moderator relinquished the initial questionnaire and discussed these questions instead.

Before going into the discussion about sensory attributes of food, the facilitator asked each focus group participant to report on senses that are important when eating, as it was assumed that consumers have too little knowledge about the meaning of the term "sensory attribute" in general. After this participatory definition, the focus group discussions were conducted, focusing on the following key questions:

- Which senses are important to you when eating?
- Did you perceive sensory differences to conventional food when eating organic food?
- In which occasions do you prefer organic or conventional products because of their sensory properties?
- Please take a moment to imagine the sensory experience of organic food. What kind of images comes to your mind?
- Basically, do you expect organic products to taste similarly to conventional products, or differently?
- Do you remember situations where your buying decision was influenced by sensory information and how?

### 4.3 Analysis

The analysis, which was a qualitative content analysis, was carried out in six steps:

**Recording:** All focus group interviews were recorded by tape recorders in order to provide a basis for transcribing the discussions.

**Transcription:** The focus group discussions were transcribed by each partner. Non-verbal communication was not considered in the transcription process.

**Coding:** In a third step, the focus group discussions were coded by each partner. This enabled the discussion to be structured into different themes.

**Group specific theme analysis:** After coding, an analysis of the specific issues that arose in each focus group was conducted by each partner.

**Comprehensive theme analysis:** The issue-related results of each focus group interview were compared in each case study country in order to identify differences and similarities between the different groups of occasional and regular buyers of organic food (light and heavy users).

**Cross country analysis:** In a last step, the results of the case study countries were compared in order to summarise the results and to identify differences and similarities between countries and groups.

Remark: the findings of the FG are illustrated in this report with the participants' own words. All quotations are translated in English and presented in italics. With the respective code of each statement the reader gets specific information about the person that was cited in terms of origin (country code DE, FR, IT, NL, PL, CH) and user group (Heavy user = H; Light user = L).

## 5 Key insights

### 5.1 General Key insights

Criteria consumers applied for evaluating sensory properties:

- “taste” was the most important sensory category for consumers in all countries
- “odour” was slightly less relevant in most countries (DE, FR, NL, PL, CH) whereas in Italy “odour” had the same importance as taste
- consumers often linked the senses “appearance” and “taste” (FR, IT, NL)
- other senses such as “texture” or “mouth feeling” were of secondary importance for participants (DE, IT, NL, PL, CH)

Experiences regarding sensory differences between organic and conventional food:

- experiences related to sensory properties of organic are rather subjective and thus, it was difficult for all countries to differentiate between real experiences and expectations or general opinions
- light users had little experience with organic food (DE, FR, NL, PL, CH)
- light users did not clearly distinguish organic from conventional products (e.g. home grown, market sale or farm sale) (DE, FR.L, IT.L, CH.L)
- tendency for heavy users having few experiences with conventional food (DE, FR, CH, PL) or sensory aspects of organic food play only a minor role (DE, FR, PL, CH)
- greater difficulty to perceive sensory differences when food is more processed (e.g. ready-cooked) than less processed (e.g. fresh food) (FR, IT.L, NL)

Factors that influence consumers’ perception of sensory attributes:

- eating habits and sensory adaptation (long-term influence) (PL.L, CH)
- time, place, occasion, surroundings or dining area (direct influence) (CH)
- origin and production method (direct influence) especially fruits and vegetables (FR, NL, CH)
- local origin of products connected to a special sensory quality e.g. freshness (FR, NL, CH)

Importance of sensory attributes for buying decision:

- for all countries, sensory attributes of organic products are not the main buying motive for consumers
- importance of non-sensory-factors that value beyond taste sensations: organic farming approach (FR.H, PL.H, CH.H), manufacturing process and ingredients (DE.H), personal health (CH)
- heavy users especially tend to buy organic food as organic production system meets personal values e.g. environmental friendly (FR, IT, NL, PL, CH.H), animal welfare (NL, IT, CH), fair trade (DE, CH), etc.

## 5.2 Symbolic meanings and associations that participants relate to sensory characteristics of organic food

Symbolic meanings and associations were mainly linked to specific organic products or product groups. Organic was positively related with:

- the way of production:
  - childhood memories and a strong link to former times (DE.L, FR, IT, PL.L, CH)
  - idea of peasant traditional farming (DE, FR, IT, PL, CH)
  - idealistic and desired way of farming (DE, FR, IT, PL, CH)
  - positive environmental impact, e.g. “biodiversity” (CH.H)
  - term “organic” often used as a synonym for peasant agriculture and natural (FR, IT, CH) food production: self-made products, regionally produced, products directly from the producer were perceived as organic
- different aspects of “nature”:
  - quality of landscape (e.g. quiet, idyllic) (DE.L, IT, PL)
  - specific idyllic images of nature (e.g. singing birds, crystal clear water) (DE.H, IT, PL)
  - unprocessed commodities as fruits and vegetables or to specific production units (e.g. “orchards with apples, pears and cherries”) (DE, IT, PL)
- personal well-being, associated with specific feelings (e.g. “wealth“ or “satisfaction“) (IT, PL)
- taste was associated with:
  - traditional farming methods (NL, CH)
  - childhood memories or “taste of products as it used to be” (DE, FR, IT, NL, PL, CH) serve as a “personal sensory-quality standard”
- positive image of organic food underlined by negative image of conventional food (“poisonous”, “tasteless” and “deceive”) (PL)

In a few cases, organic is negatively related with:

- image of a rational and technical farming approach (CH.L)
- expensive (PL.L)
- unhygienic meat (CH.H)

Symbolic meanings and images related to sensory aspects referred to:

- appearance and shape of unprocessed fruits and vegetables, e.g. “small sized” apples or eggs, “crooked shaped” cucumbers (DE, FR, IT, PL, CH)
- colour of organic products (e.g. “bright”, “intensive”, etc.) (DE, FR, IT, PL, CH)
- texture (e.g. “very fragile” CH.H) and smell (e.g. “not so intense” DE.L, “superior” CH.H)
- potential flaw of organic produce can be compensated by another sensory attribute (a lack of appearance can be compensated by the superior taste or smell) (CH)

### 5.3 Sensory expectations and preferences related to variability and standardisation of organic food

Why sensory attributes in general and especially the taste of organic food should be different compared to conventional food:

- organic food should not be standardised: it should differ from conventional in terms of variability and sensory aspects (DE, FR.L, IT, PL, CH)
- experienced and expected “strong, innate taste” of especially unprocessed commodities (e.g. meat, vegetables, fruit, milk, etc.) (DE, FR.L, IT, PL, CH)
- products should taste: “authentic” (DE, FR, IT, PL), “healthy” (PL) and “natural” (DE.H, IT, PL) and have a “more intense taste” (DE, IT), higher diversity of varieties in appearance and taste (CH)
- experienced and expected “typical organic recipe and taste” of “processed commodities” (e.g. yogurt, biscuits, sweets) (DE, FR, IT, NL, CH)
- expected lower level of certain “unpleasant” ingredients of organic food: less sweet (DE.L, NL), higher amount of fruits (DE.L, CH), lower fat (DE.L, NL), lower salt levels (DE.L, PL.H)
- taste of organic food ought to be delivered by basic ingredients as e.g. whole wheat flour, rather than by secondary ingredients (e.g. additives) (IT)
- different taste can justify higher prices (DE.L)

Further aspects related to the variability of organic products:

- taste can vary with different points of sale (e.g. supermarket taste expected as conventional food, whole food store organic food expected to taste different) (NL)
- despite dissatisfaction with certain sensory aspects of organic food (FR.H, PL.H, CH.H), consumers are tolerant to different taste components (FR, CH.H): taste is to be learnt (NL, PL.H, CH.H)

Variability regarding appearance and texture of organic food:

- shape is expected to be “natural” and vary among organic products (FR.L, IT.L)
- colours differ from conventional food (e.g. meat and sausages over longer periods, Vanilla pudding) (DE.L) but should be maintained persistent and constant during the shelf life (IT.L)
- organic food should be more characteristic than conventional products in terms of texture and smell (FR.L, IT.L)
- different preferences regarding the appearance of organic food at the point of sale (e.g. food in organic food store reminds of “naturalness” and “simplicity” vs. organic food at retail store presented more as conventional food) not preferred by all participants (FR.H, IT.L)

Why sensory attributes of organic food should be similar compared to conventional:

- variations in taste of organic and conventional food are undesired (CH)
- organic food ought to imitate conventional food at a product’s launch as customers need to adapt to new taste (IT.H)
- no differentiation expected for “products that contain starch” (e.g. pasta, rice, polenta). Perceived as basic ingredient and should not have strong innate taste (DE.L, CH)
- no differentiation expected for “luxury products” (e.g. tea, chocolate, crisps, wine) as enjoyment of such products is more important. Organic alternatives do not reach the conventional taste (DE.H, IT, PL.H, CH). But desired imitation of conventional benchmark for organic sweets, candies of desserts (DE.H, PL.H, CH)

- for all countries, convictions, values and buying motives strongly influence expectations and perceptions of taste regarding the level of standardisation

Should organic regulation be adapted to sensory requirements?

- only PL and CH commented on organic regulation
- organic regulations should not be changed or relaxed (PL, CH)
- no change desired as organic food already delivers at the higher level of sensory experience

#### **5.4 Experiences and expectations of marketing sensory characteristics of organic food**

Controversial discussion on whether sensory marketing is useful or not among the participants in the studied countries; generally, ingredients (DE, IT.L, PL, CH) and preservatives (IT), nutrient content (DE), origin of the product (FR, PL) are more relevant for the buying decision (DE, PL, CH).

Why sensory market was considered as useful and desirable:

- support of buying decisions, especially when buying a product for the first time (DE), when choosing from a larger offer (NL), in order to notice differences between products (PL.L)
- helps to choose the right product (PL.L, CH) that fulfils the personal requirements (CH)
- informs about how to process or consume a certain product (CH, PL.H)

Sensory information should address:

- information about processing techniques, preservatives or additives used, respectively not used in order to make consumers aware of possible modifications on sensory aspects over time (FR.L, IT, PL.H, CH)

How sensory information should appear:

- symbols, images, keywords, colours, sound / noises and information about food packaging associated with certain sensory attributes (IT)
- information that links ingredients to certain sensory attributes (IT)
- immediate and simple messaging (IT)

Why sensory information was considered as useless / undesired:

- information on sensory characteristics is highly subjective (PL, CH) since consumers have different preferences e.g. tastes (PL.H, CH)
- information given on labels could be misinterpreted and be misleading (PL)
- consumers might be disappointed (PL.H) if products do not deliver what they promise
- lack of trust in information given by specific brands (CH)
- already too much marketing information provided (NL, CH), which is directly linked to higher price for organic products (CH)
- buying habits have strong impact on buying decision (IT, PL.L); sensory information does not influence buying decisions (IT)
- more transparent listing of contents rather than sensory information (DE), degustation (tasting) and oral information from the sales persons in the shop more useful (DE, CH)

## 5.5 Light and heavy users of organic food – user-specific characteristics

### Consumption frequency of organic products as category for differentiation

One aim of this research was to identify differences between the two target groups of light and heavy users of organic products. Therefore, the target groups were recruited into different focus groups (except in the Netherlands, where the recruitment of heavy users was difficult and so the two target groups were mixed in the focus groups). In general it was difficult to find differences between light and heavy users. This is perhaps due to a) an **immature organic market supply** (PL), b) **varying buying habits** (NL), c) limitations regarding the **methodological approach**:

a) Immature organic market supply: In the immature Polish organic market, it is hard to categorise consumers as heavy and light users since both categories face difficulties in acquiring organic food as a result of low and unvaried supply of organic products. Their consumption of organic food is infrequent and they do not have experience of certain organic products and particularly sensory properties. As a result no salient differences between the opinions expressed by heavy and light users were identified.

b) Varying buying habits: In the Dutch case, even at the recruiting stage, some respondents had problems with identifying themselves as heavy or light users. Participants reported buying a specific organic food, but no other organic products. The results of the Dutch focus group discussions indicate that there are different patterns, not necessarily distinguished by the frequent versus occasional consumption of organic foods. One pattern was that people buy certain categories of food always in their organic variant (usually vegetables and fruit) but no other organic products (occasional, specific purchase). Another pattern was that consumers choose per product – ad hoc in the place of shopping – if they prefer the organic or the regular variant. A complicating factor is money: a number of respondents expressed their willingness to buy more organic products, even to buy all their food in organic quality, but are prevented by the high cost of increasing their share of organic purchases. In the case of the Netherlands it was concluded that the frequency of use, particularly when self-reported as ‘frequent’ or ‘occasional’ is not connected to sensory experiences and expectations as a more complex understanding of purchase patterns and motivations is needed to locate sensory experiences and expectations in wider, complex consumption patterns.

c) Limitations regarding the methodological approach: the discriminating power of a qualitative and explorative approach (using focus group discussions) is limited. Quantitative methods are more suitable to verify differences between target groups. Therefore the question of differentiation between heavy and light users will be part of the subsequent task of the quantitative consumer research (ECROPOLIS WP 4.3). Furthermore, some limitations regarding the recruitment of the two target groups exist, as the recruitment was based on self-assessment of consumers. According to the screening question “*How often did you eat organic food in the last two months?*” consumers had to state whether they were frequent or occasional buyers of organic food (in case they answered seldom or never, consumers were not invited to the FG). Especially in the Netherlands, consumers had difficulty in deciding whether they were frequent or occasional users of organic food.

Although there were limitations, in the following section, certain aspects and marked differences between light and heavy users are depicted.

## Differences in evaluation and experiences

On the one hand, some **light users** never knowingly bought similar organic and conventional products or had few experiences with organic products at all (DE, PL, CH). Furthermore, organic products were sometimes equated with products from the market or with home grown products (FR, DE, CH). Some light users even perceived “organic” as another brand (CH). For those who had experiences with organic and conventional food and who realised differences, organic products were evaluated and experienced in different ways. **Light users** more often referred to negative quality parameters (e.g. shorter shelf-life of organic milk and yogurt or visible quality matters; DE, CH). It seems that taste was a more important parameter for their purchase decision (DE).

On the other hand, Italian **heavy users** seemed to be better informed about organic food (e.g. production method, nutritional information, etc.), however, even this group confused information about food (e.g. linked organic standards equally to fair trade, etc.). Nevertheless, heavy users showed a different picture, their problem with comparing organic to conventional food was determined by the fact that some users solely consumed organic products for a long period of time and / or for some consumers, the sensory properties of organic food play only a minor role (FR,H, DE, CH).

## Importance of sensory factors and other criteria for the purchase of organic food

**Light users** in Germany and Switzerland proved taste as an important parameter for their purchase decision. Participants in Switzerland therefore would buy a similar conventional product if it was of better taste compared to the organic alternative.

In contrast to this, **heavy users** in Switzerland considered taste not to be their major buying motive for food. Interestingly, the perceived taste differences were not reported to be better or positive per se. Nevertheless, for some products (e.g. tomatoes) they were convinced that organic food tastes better than conventional food. In cases where they were not sure if organic products taste better, Swiss heavy users reported that they hoped and assumed that organic food tasted better. They stated that they could tolerate different (typical organic) taste components. Consumers said that they would have to adapt themselves to this special taste of organic products. Organic food was also expected to be high-quality whole food, even in cases where sensory attributes (e.g. taste or appearance) of conventional food were more highly rated. In particular, heavy users (DE, PL, CH) often referred to the importance of non-sensory parameters in food. For German and Swiss heavy users, non-sensory factors such as ethics, animal welfare or health play a prominent role. Some heavy users also reported that the purchase and consumption of organic food satisfied them and had a positive effect on their emotions (PL, CH). Polish heavy users make their choices in favour of organic food due to the experience of something considerably deeper, more metaphysical (the feeling of internal energy spreading in the body, vitality, saturation, feelings of harmony) than simply sensory sensations when eating organic food.

Additionally, some consumers (FR, NL, PL, CH) linked the origin of food (from a certain farm, from the producer in the neighbourhood or a specific country) to a specific (higher) sensory quality. For Swiss **light users** the origin was apparently more crucial than the production method in relation to sensory aspects. Especially German **heavy users** referred to sensory characteristics of organic food only as a



part of a whole concept, being particularly concerned about ethical and moral aspects of animal welfare. Therefore, during the focus group discussions with German heavy users as well as one group of French heavy users, consumers faced difficulties in concentrating on the sensory aspects of organic food.

## **5.6 Country-specific characteristics and discussion foci**

In this chapter those results are listed that were special or characteristic for each study country.

### **Germany (DE)**

One result of the German FG is that the sensory perception and evaluation of younger German interviewees was strongly influenced by certain conventional brand products. While in other countries, opinions on the implication of sensory marketing differed, most German participants considered the provision of sensory information on products as not being meaningful. They would rather prefer transparent listing of contents and – concerning the sensory qualities – the opportunity to try the product in the shop. When talking about aspects of typical organic recipes and tastes, German users very intensively focused on aspects of ingredient levels in processed food, where, especially, sweetness was discussed very intensively.

### **France (FR)**

The main point of French participants was that manufactured organic products have to be at least as good as their conventional counterparts, with few exceptions. Some consumers seemed to associate manufactured 'organic', only with traditional handicraft products that may be manufactured on farms or in workshops (e.g. local cheese makers, small bakeries, olive oil mills). They consequently talked mostly about bread, cheese or yoghurt when referring to manufactured organic products. Convenience foods or frozen foods, for instance, were not mentioned by light users. Consumers commented that natural product lost its naturalness (a quality especially light users associated with the organic concept) along the supply chain. Most French participants lacked trust in the food industry and food retailers. Even packaged organic vegetables (e.g. in supermarkets, sold in small plastic baskets and wrapped with cellophane) were perceived as suspicious.

### **Italy (IT)**

The results of the Italian FG indicate – similar to the other case study countries – that sensory aspects cannot be isolated from other purchasing motives such as health, environmental protection or animal welfare. However, when comparing the results with the other case study countries it was found that sensory aspects and taste of food are more consciously perceived by Italian consumers compared to consumers in other study countries. They spoke more about sensory experiences and used more sensory characteristics to describe food than in the other countries. In Italy perceptions of sensory attributes was dependent on the participant's age. Older participants appear to pay more attention to sensory and safety attributes of food while younger participants seem to be more interested in the attributes of environment friendly, no-allergies, animal welfare, no-chemical preservatives or

additives. In sensory marketing, Italian participants very much positively discussed the influence of information provided on the labels of organic products.

### **Netherlands (NL)**

Dutch consumers mentioned influences of sensory preferences by price, preferences for specific products and qualities or the general attitude to organic farming. Dutch consumers clearly differentiated between processed and unprocessed food. This is due to the fact that organic consumers in the Netherlands prefer eating basic ingredients and are less interested in processed food. The product group “cookies” was more intensively discussed due to the fact that there are many different varieties offered in the Netherlands. Some respondents mentioned a learning effect that is linked to retailing through special outlets. Participants said that organic food tastes differently, and one has to get used to these different flavours in order to appreciate organic food. A similar frame in which to appreciate organic food are the outlets: one expects a more regular flavour of organic foods in regular supermarkets and a more ‘organic’ flavour in special outlets like whole foods stores. Dutch consumers very much discussed the influence of processing methods (e.g. abandonment of pesticides, etc.) on the quality of organic produce.

### **Poland (PL)**

The results of the FG are strongly influenced by the early development stage of the organic market of Poland. Due to the limited availability and the infrequent supply of organic products, consumers in Poland had fewer experiences with sensory aspects of organic food. However, even Polish light users were strongly committed to the values of organic farming and showed rather similar patterns in their behaviour compared to heavy users. Participants showed resistance to disclosing any sensory expectation. They admitted they would like some changes in the sensory properties of organic food but such changes could cause a cognitive dissonance since organic food is perceived as an “ideal” already reached. This could threaten the perception of themselves as persons living a “modern and healthy lifestyle”.

### **Switzerland (CH)**

Swiss participants especially discussed the different influences on the perception and evaluation of organic food (e.g. eating habits and sensory adaption, place or surroundings, origin, production method, plant variety or growing conditions). For some participants, the origin of food (from a certain farm, from the producer in the neighbourhood) seemed to be more crucial than the production method. In most cases the origin (e.g. from the farm, direct sale) was directly linked to a higher sensory quality. The origin of food often linked to basic attitudes which are found to have a direct influence on the positive or negative evaluation of the sensory qualities of organic food. Swiss participants especially pointed out that organic products that contain starch (e.g. pasta, rice, polenta) or semi-luxury food (e.g. tea, wine, chocolate, crisps) should have similar sensory attributes as to conventional food.

## 6 Results

### 6.1 Criteria for evaluation of sensory properties

In the focus group discussions consumers were asked to report which senses (sensory categories) are relevant to them when eating and judging food. An overview of the mentioned senses and their relevance in the respective case study countries is presented in Table 3.

**Table 3: Overview on mentioned senses and their relevance in case study countries**

	DE	FR	IT	NL	PL	CH
Taste	++	++	++	++	++	++
Odour	+	+/-	++	--	+	+
Appearance	+/-	+	-	+/-	+/-	+/-
Texture / mouth feeling	-	++	-	-	+/-	-
Sound	--	--	--	--		--
Others	Instinct, good feeling	Changes undergone when cooked	--	Feeling of satiety	Feeling after eating	Appetite, stomach feeling,

Quantification of relevance: ++ = very relevant; + = relevant; + / - = indifferent; - = limited relevance; -- = very limited relevance; nv = not available

Above all, the sense of “**taste**” was mentioned in all countries and FG – it was the **most important sensory category** for the participants when eating:

*“I think that the appearance is very important; however, for me it is finally the taste that is convincing me.” (CH.H.2F)*

Only in Italy consumers gave “**odour**” the same importance as the sense of “**taste**”; in all other countries (DE, FR, NL, PL, CH) consumers mentioned “**odour**”. However this sense was slightly less relevant.

In general, consumers often **linked the senses “appearance” and “taste”** when talking about sensory categories that are crucial when eating. As a consequence the sensory aspect of “**appearance**” was classified differently by the participants. Due to occasional deficits in the appearance of organic products, some consumers in France, Germany and Switzerland explicitly excluded this sense as they classified this as misleading information. On the other hand some consumers (FR, DE, CH) described the variation in the “**appearance**” of organic products as a quality indicator and guarantee for organic products.

In France, as for the product aspect (products being non-calibrated, misshaped vegetables covered with soil), only the light users were really concerned about it, as for the heavy users, the fact of having non calibrated and standardised products was not an indicator of whether the products are organic or not. Only for organic eggs, a

consensus appeared among French consumers that yolks were clearly more intensely yellow.

When it came to cooking or handling the products, French heavy and light users spontaneously mentioned texture, either in positive ways (organic products being perceived as “firmer”, “losing less water” (e.g. meat, poultry) or alternately “crunchier” and “juicier” (e.g. fruits, tomatoes)) or in negative ways (regular products being perceived as more watery or less consistent).

Furthermore, the FG results of all case study countries showed that the category of **“texture” or “mouth feeling” was of secondary importance** for the participants when eating or judging food.

In addition, individually light and heavy users likewise mentioned **additional senses** such as “sound” (DE, IT), “appetite” (CH), “satiety” (NL), or “physical sensations” (DE, PL, CH). With regard to participants’ criteria used to evaluate sensory properties of food, no patterns could be found at a European level to differentiate between statements of light and heavy users. However, in the German FG, only heavy users mentioned additional senses, while only Swiss light users mentioned additional senses.

## **6.2 Symbolic meanings and associations that participants relate to sensory characteristics of organic food**

In order to get a deeper understanding of consumer images towards organic food, participants were asked to describe what symbolic meanings and associations they relate to sensory characteristics of organic food.

Generally, participants faced difficulties in naming symbolic meanings related to sensory attributes. Therefore, they mainly referred their answers to organic food or organic food production in general. This might be due to the way the discussions were conducted. It was suggested to the project partners how best to introduce the question about symbolic meanings and associations in order to stimulate a discussion.

French participants seemed to be puzzled when they were asked to think of images or associations. This might be due to the fact that the question was asked towards the end of the discussion, when participants had already expressed themselves a lot before. Nevertheless, French consumers mentioned traditional farming and childhood memories. Vacations in the south of France were also mentioned when thinking about symbolic meanings and associations related to organic food.

In the German and Swiss FG the moderator asked the participants to write down associations related to sensory attributes. This was stimulated by further comments on specific associations that were linked to sensory properties of food (e.g. appearance, smell, situations, and drivers of liking).

Polish participants were exposed to a projective technique. They were asked to describe their sensations while travelling to the planet “sensory sensations of organic food”. In contrast, German light users strongly related their answers to the key words given by the introductory questionnaire. Similarly to Germany, Italian participants described their sensations through keywords given by the initial questionnaire. In addition, the moderator asked which symbolic meanings and associations participants relate to sensory characteristics of organic food.

In Italy, the question was introduced by proposing some examples. For Dutch participants 'sensory experiences' were too abstract to stimulate a discussion. A detour was devised by having participants articulate their associations around 'organic food'. Spontaneously, sensory characteristics, especially in comparison to conventional food, were mentioned. The moderator focused on these characteristics. In addition, also at other moments in these sessions, participants referred to their sensory experiences of organic food.

Generally, participants mentioned various images and associations with organic food, which reflect the complexity of the organic farming system (see below). As a matter of simplification, the images were aligned according to their topic (see Table 4).

*“Diversity of organic products, fruit. Many colours, plants of the rights size not overgrown. Everything attractive, appealing.” (P.L.L)*

*“[...] splash of such a crystal clear water, rich green, many colours and such a great orange pumpkin, just a great one not the normal size.” (P.L.L)*

*“So I think of vegetables with many different varieties, e.g. with dewdrops on it. They should look fresh and natural. Just diverse, and not everything standardised and equal looking, e.g. different in size and varied.” (D.E.H)*

Due to its complexity, this chapter is divided into two subchapters. In chapter 6.2.1, the symbolic meanings related to organic food are described, while in 6.2.2, the meanings and images attached to specific sensory attributes of organic food are depicted.

### 6.2.1 Symbolic meanings and associations towards organic food in general

For the most part, participants linked symbolic meanings towards organic food with **positive associations and images**. Here, participants mainly referred to (i) the method of production, (ii) different aspects and images of “nature” and (iii) personal feelings.

(i) When thinking of organic food, participants strongly referred to **childhood memories** and **former times** (D.E.L, F.R, I.T, C.H, P.L.L). Symbolic meanings in this regard referred to the actual memory or the idea of **peasant traditional farming** or to an **idealistic and desired way of farming** (D.E.L, F.R, I.T, P.L.L). Hence, participants' associations related to traditional **production techniques** as e.g. “three-field-agriculture” (C.H) or the “usage of old varieties” (P.L.L). Besides references made to traditional farming practices, other associations described pictorial traditional **peasant farm units** as e.g. “small farms” (F.R, I.T) “lots of barns”, “lots of people instead of machines”, “pigs that wallow in mud”, etc. (D.E.L)

Participants used the term **“organic”** as a **synonym for peasant agriculture and food production and processing**. Products that are “self-made” (F.R, I.T, C.H.L), “bought at the farm” (F.R, C.H.L), “directly from the producer”, “regionally produced” (C.H.L), or generally produced under “fair working conditions” (C.H.H) were perceived as organic. Traditional peasant agriculture was seen as a **natural way of farming**. Apparently, these images seem to have a strong influence on a consumer's expectations in (organic) sensory attributes. (C.H.L)

*“When I think about organic fruits, for example, I simply imagine an old beautiful standard tree and apple trees which weren't fertilised and have been growing there for years. [C.H.L.18F and C.H.L.19F are nodding][...] Ok. A standard tree doesn't have to be organic, but I think that's simply the picture.” (C.H.L)*

*“Today it [organic] just means for me “self-made”, a cookie is organic when I made it by myself.” (CH.L)*

Generally, organic was associated with aspects of **diversity**. Participants positively emphasised organic e.g. “diversity of organic products” (PL.H) or the positive environmental impact e.g. “biodiversity” (CH.H).

(ii) Participants strongly emphasised organic food with different positive aspects of **“nature”** (DE, IT, PL). Polish participants especially referred in this regard to different **images**. Here, associations were manifold. Organic food was associated with “the richness of nature” and “in harmony with nature” or associations alluded organic food to the **quality of landscape** which was considered as “quiet”, “idyllic”, “unspoilt”. Besides general positive images, participants referred to specific **idyllic images in terms of situations** e.g. to the “sunny and warm time of the year with singing birds and crystal clear water”.

Associations with “nature” also showed a strong relation to specific elements of **“plants”** e.g. “high grass” (PL.L) or “green plants like in a jungle” (PL.H). Participants also referred to specific **unprocessed commodities** of fruits and vegetables e.g. “strawberries with weeds”, “bean on a pole” (PL.L) or specific **production units** e.g. “vineyards” (IT) or “orchards with apples, pears and cherries” (PL.L) were named.

Associations also included **country specific images**. French, Italian and Polish participants referred to “vacations in the South of France” (FR), “typical Tuscany farm holidays” (IT) and a “jam made of “Papierówka” (old polish variety) (PL).

(iii) Organic food was linked to **personal feelings**. The consumption of organic food seems to enhance **personal well-being**, as organic food was associated with feelings of “wealth”, “satisfaction”, “healthiness” (PL), “no stress” (IT) or “silence” (PL.L).

*“Organic products give me the feeling of no stress and quiet living in the countryside.” (IT.L)*

The positive image of organic food was underlined by the negative image of conventional food. Polish participants considered non-organic food as “poisonous”, “tasteless” and “deceive”.

In contrast to these idealised picture of organic or peasant agriculture, some Swiss and Polish light users were critical towards such organic images. They rather described the **image of a rational and technical farming approach** (CH.L.) and described organic food as expensive (PL.L).

*“But again, [...] organic products always emphasise “self-made” and in the end these products are also produced [another CH.L agrees], but one gets the feeling, “Oh I have now a cookie which was made by the grandmother from next door and the salad was just harvested by the farmer”. That’s a little bit my picture. [...] It’s also industrial and I don’t actually have this nice organic product picture in my head with cows on the alpine pasture and the women who pick the berries there.” (CH.L)*

**Table 4: Symbolic meanings and images related to organic food**

Organic food	Symbolic meanings and images
Positive meaning and images related to organic food in general:	
Traditional food production	Farming as it used to be (FR, PL), three-field-agriculture (CH), traditional way of processing (PL.L)
Traditional peasant farming	Small farms (FR, IT), old farms, lots of barns, lots of people instead of machines, a mill, pigs that wallow in mud, many small patchwork fields (DE.L), Mountain, mountain people, no cars, no electricity, cheese made by mountain people (PL.L), small scale (PL.L)
Diversity	Biodiversity (CH.H), using old varieties (PL.L), many different varieties (DE.H) diversity of organic products (PL.H), diversity (PL)
Landscape and nature	Landscape, quiet landscape (IT), idyllic countryside and agriculture (DE.L), richness of nature (PL.L), harmonious world of nature, unspoilt nature (PL), harmony with nature (PL.L)
Images of nature	Nice day, blue sky, sun (IT), green (IT, PL), hot wavy air as during hot summer, light, sunny, juiciness (PL.L), singing birds, life, water (PL.H), splash of crystal clear (PL.H), everything attractive, appealing (PL.H), vegetables with dewdrop on it (DE.H), the end of August, time to harvest (PL.L)
Images of plants	High, unmown grass with apples lying around that can just be taken, high beans on a pole, blooming beans and strawberries with weeds (PL.L), green plants like in a jungle, many high trees, all is growing free (PL.H), plants of the right size, not overgrown (PL.H), fruits and vegetables, many intensive colours, a big orange pumpkin (PL.H), smell of tomatoes (PL.L), vineyards, orchard (IT), apples, pears and cherries orchard (PL.L), many fruit trees, a lot of fruits (PL.L)
Country specific images	Typical Tuscan farm holidays (IT), Vacations in the South of France (FR)  Jam made of "Papierówka" (old polish variety) (PL.L)
Regional food production and processing	Self-made (FR, IT, CH.L), bought at the farm or directly from the producer (FR, CH.L), regionally produced (CH.L), Fair working conditions (CH.H)
Feelings	Feelings related to childhood memories ( DE.L, FR, IT, PL.L, CH): the past and the ideal time of childhood (FR, PL), back to the past, as it used to be (PL.L)  Different aspects of "feelings": Consciousness, lightness, saturation, wealth, satisfaction, elegance (PL), no stress, spirit (IT), healthiness, safety (PL.H), comfort, silence, tranquillity (PL.L), natural and simple, fullness (PL.H), small and beautiful, horn of plenty (PL.L)
Negative meaning and images related to organic food in general:	
Farming practices	Rational and technical farming approach (CH)
Monetary value	Expensive (PL.L)

Italian participants especially associated idealised positive symbolic meanings and images with organic food, but directly **linked them to specific products** (see Table 5). Organic unprocessed and processed food was associated with symbols and images connected with the **origin of products** e.g. “images of stable or pasture for milk”, with the **production process** e.g. “hoe for Zucchini”, with **plants as source of food** e.g. “old beautiful fruit tree”, **images related to animals** e.g. “animal welfare” or with **landscape and nature** e.g. “woodland” and “pasture”.

**Table 5: Meaning and images of specific organic products**

Organic product	Association
Fruits	Old beautiful tree (IT)
Jam	Woodland, blackberries (IT)
Meat	Pasture (IT)
Meat & sausages	Animal welfare: pigs and chickens kept outside (DE.H)
Milk	Stable, cow, pasture (IT)
Tomatoes	Farmer (Woman) (IT), Garden (FR)
Zucchini	Hoe (IT)

An overview on symbolic meanings and images related to organic food is provided in Figure 9.

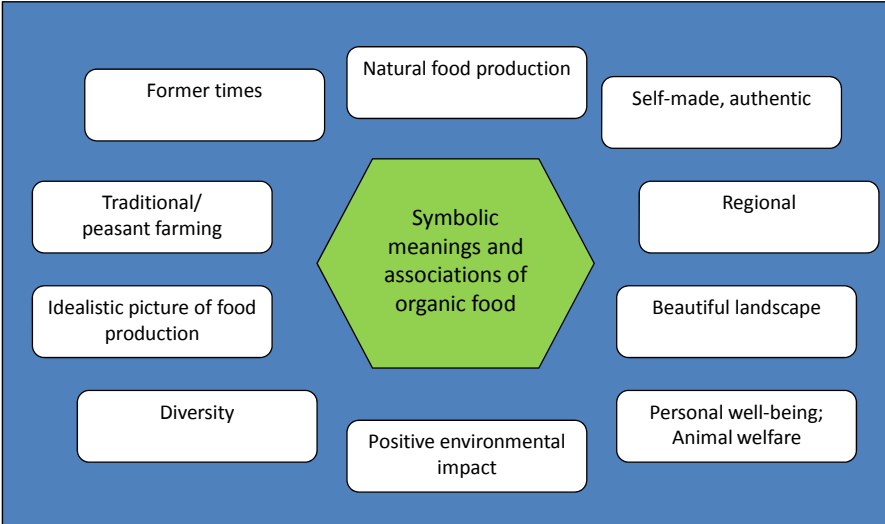


Figure 9: Overview on symbolic meanings and images related to organic food



## 6.2.2 Symbolic meanings and images related to single sensory aspects

Swiss and Dutch participants named images and associations concerning the **taste** of organic products. In most other cases, sensory attributes were directly linked to specific organic products or product groups, as described in Table 6.

Participants linked the **taste** of organic food with associations such as “traditional farming of their grandparents”, “small-scale peasant production” or “agriculture in accordance with the environment and life-cycles” (CH). Participants associated organic food with **childhood memories** (FR, PL, CH), the “taste of products as it used to be” (DE, NL) or with “experiences from their past or from their sensory experiences in the countryside” (FR). Some of them also expected organic food to “remind consumers of their childhood” (FR, PL). Organic food was therefore associated with “deep and innate taste” (PL.H). For Dutch participants, the most frequent image was the “authentic taste”, the taste as “it should be”.

As a result, these “product memories” seem to be important as they apparently serve as a “**personal sensory-quality standard**” when taste experiences of childhood or former times are compared with contemporary sensory characteristics of food.

*“What is organic? I sometimes have the feeling that organic means for me „like my grandfather produced“, when they didn’t have any fertilizer yet, when they [...] waited for the rain, one couldn’t irrigate every instant, they had little harvest [...] I still can remember - I’m the oldest in here - [...] I could just describe now, Polenta from 50, 60 years ago with this incredible taste. This was so good. Today I eat Polenta, I buy Polenta at Migros, that’s nothing and most of all it has written on it “every poem”, everything wonderfully written but it doesn’t taste even half, not even a quarter [as good as the Polenta of former times].” (CH.H)*

*“For me organic means figurative “like it used to be in old times”, the “three-field-agriculture” [...] the soil could recover, at this time one didn’t use any artificial fertiliser, one didn’t need anything, the soil could recover again. The vegetables and also grains, corn et cetera – just came out better, because it has been [...] a natural process.” (CH.H)*

*“I often feel a real difference when I eat organic chicken. It tastes like the farm chicken from my childhood. The meat has less fat content and less water and thus it tastes better.” (FR.H)*

The importance of these childhood memories is apparent, where these memories are a guiding motive for buying organic food (FR, PL).

*“I personally choose organic food because it resembles my childhood and I associate it with something good [...] good and simply tasteful. And certain products I come across on the conventional food market do not taste well. And I find the taste I like in organic food.” (PL.L)*

In contrast to the statements, French and Dutch participants **underlined their positive image** of organic food out of a differentiation from **negative conventional practices**. As a consequence, a reflection on such conventional practices results in an idealised picture of organic food. In this regard, participants especially linked farming practices with the sensory attribute of taste. Hence, **modern agricultural production and processing techniques** result in the **loss of authentic taste** of food (FR). Preserving methods, taste enhancers and especially ingredients concentrated on product appearance, were considered as a threat to the authenticity of food. Thus, **organic products** are perceived as a **return to the “pure and honest past”** (NL). This image is elaborated in the context of specific products as e.g. in the case of apples which are produced without the usage of chemicals (FR, NL).

*“That’s how it tasted previously. (Organic) apples smell really like apples. They are much juicier, taste better.” (NL.L)*

*“If you taste a conventional apple, it often tastes like a banana! An apple is really an apple if you eat the organic one.” (NL.H)*

*“About organic pork, one respondent remarked that “presently everything tastes neutrally, but this (of organic pork) is the taste as I remember it from earlier days.” (NL.L)*

*“No chemicals are used in the organic agriculture just like in the past. The vegetables grow freely, they take their time. The final result is a much tastier vegetable.” (FR.H)*

As organic fruits and vegetables are not “speeded up with artificial fertilisers” or other methods to force growth, they are perceived to be “fuller of flavour” and “less watery”. Seasonal and locally grown produce and a shorter logistical supply chain furthermore **enhance the flavour** of organic fruits and vegetables. “A more intense taste” was also seen for organic meat, to be the result of the abandonment of artificial growth promoters and of more friendly housing systems, especially as the animals have more space to move. The abandonment of taste enhancers and chemicals in processing and preservation techniques was generally perceived to **result in a taste difference** and especially in the case of meat or the production of cold cuts leading to a “purer taste”. In this regard, participants referred to milk and dairy products, where glass bottles are preferred to cartons. Furthermore, in the case of bakery products, participants mentioned several times the image that more natural “sweeteners” like honey and dates are used instead of refined sugar and generally whole wheat or whole nuts are used. (NL)

*“I find the cookies you buy in a regular store always so sweet. When you buy organic cookies, they always use honey. I don’t need to have sugar in everything.” (NL.L)*

French participants most often referred to organic; however, with symbolic memories and images consumers sited manufactured and cooked / baked products more often. As an example, it was either with the bread from the good old days or with grandma’s cookies that consumers related their experiences with organic baked products. Fresh products were more often related and compared to sensory experiences with products from the countryside or from the consumers’ childhood as well as with garden grown products. It also seems that often, only **products that in the past were often manufactured in the countryside** and on farms (e.g. bread, cookies, cheese or yoghurt) were considered as being good or real organic manufactured products.

*“Organic tomatoes taste just like the ones I have in my garden in the country side. They’re bright red, rich in taste, and aren’t all watery like the ones you get in the supermarket.” (FR.L)*

*“We used to have garden grown strawberries in our house in the countryside. Organic strawberries remind me of the ones I used to eat there when I was a child. They have a much livelier colour and a stronger and more complex taste.” (FR.H)*

*“I have tried organic yoghurts before and I have to admit they do have a different taste. For once you can really taste the milk and all those aromas that remind you of the countryside.” (FR.L)*

*“Organic bread reminds me a lot of the bread you could buy in the past that you can still find sometimes in small bakeries in the countryside. It has a golden, thick and crunchy crust with a developed soft interior. Nothing like the bread you buy in the supermarket or the normal bread from the bakery.” (FR.H)*

*“I have tried organic cheeses like Roquefort and Comté and I can assure you that it is incomparable with the regular cheese you can buy off the shelf in a supermarket. They have a much more complex taste and developed flavour.” (FR.H)*

Besides associations with taste, participants referred to the **appearance** and the **shape** of organic products. Here, symbolic images and associations related to unprocessed organic commodities such as fruits and vegetables have been made. Comments regarding the **colour** of organic products were especially prominent (DE.L, FR, PL, CH.H) Participants associated organic fruit and vegetables with “intensive”, “bright”, or as one German heavy user stated “ideal world colours”. Regarding the **shape** of organic produce, participants mainly referred to their own experiences such as “small sized” apples or eggs (CH.H), a general “different appearance” (DE.H).

However, also a more differentiated picture occurred and less positive and idealistic images arose when valuing associations regarding the appearance, shape, texture and odour of organic produce. Organic fruit and vegetables are associated as “crooked shaped” (FR, CH.H), “sometimes not nicely shaped” (CH.H) or “always a bit earthy” (DE.L). The texture of organic fruits and vegetables was on the one hand associated as “fragile” (CH.H) but “less watery” (NL) on the other hand. Concerning **odour**, one German light user associated a “not so intense, rather washed out smell”.

While for Dutch participants, the **abandonment of pesticides in cultivation methods** and chemicals in preservation techniques result in a positive enhancement of taste (as mentioned above), such practices might also result in a **different appearance** e.g. insects on organic and in “not so good spots” on these products. (NL)

*“We just picked [organic] apples and one has to cut some bad parts out of them.” (NL.L)*

One Swiss heavy user even associated organic meat directly bought at the producer as unhygienic.

*“I would not buy organic meat. I don’t know why, I wonder if it is hygienic although it should be all right in supermarkets. I assume that it should be more hygienic in supermarkets than buying it directly from the organic producers.” (CH.H)*

The statements so far include a range of more **positive and few negative symbolic associations** with organic food. However, Swiss heavy users commented that a potential flaw of organic produce can be compensated by another sensory attribute. Since the **taste** and **smell** of organic food are considered as **superior** (compared to conventional food), it strongly compensates for a potential lack of appearance.

*“Organic fruits often have a, very intensive colour; however, on the other hand are very fragile. Organic fruits and vegetables, e.g. apricots or strawberries are very fragile. Sometimes they are just not nicely shaped. They do not look exactly the same. On the other hand, the smell, especially of [organic] fruits almost compensates for this lack. The lack of appearance is compensated by the taste.” (CH.H)*

**Table 6: Symbolic meanings and images related to sensory aspects**

Symbolic meanings and images	Associations and meanings related to specific organic products
<b>TASTE</b>	
Relation to “former times”	<p>Childhood memories (FR, PL, CH), tastes remembered from childhood (FR, PL), the taste of products as it used to be (DE, NL)</p> <p>Agriculture in accordance with the environment and life-cycles (CH)</p> <p>Traditional farming practices of grandparents (CH)</p> <p>Small-scale peasant production (CH)</p> <p>Organic products are a return to pure and honest past (NL)</p>
Traditional way of farming	<p>Agriculture in accordance with the environment and life-cycles (CH)</p> <p>Traditional farming practices of grandparents (CH)</p> <p>Small-scale peasant production (CH)</p> <p>Organic food not speeded up with artificial fertilisers, no pesticides applied (NL)</p>
Deep taste, innate taste (PL.H), authentic taste (FR, NL)	Organic food in general
Fuller of flavour (NL), superior taste (CH.H)	Fruits and vegetables
Purer taste, more intense taste (NL)	Meat and cold cuts
<b>ODOUR</b>	
Rather “washed out smell”, not so intense, smells a bit earthy (DE.L)	Organic food in general
Superior smell (CH.H)	Fruits and vegetables
Smell of tomatoes (PL.L)	Tomatoes
Scent of bread (PL.L)	Bread
<b>APPEARANCE</b>	
Different appearance (CH.H), possibility of not so good spots (NL), possibility of insects on fruits and vegetables (NL)	Fruits and vegetables
Should look fresh and natural (DE.H)	Vegetables

## COLOURS

Rich green (PL.H), green and lots of red (DE.L), bright colours (DE.L), intensive colours (DE.L, PL) Organic food in general

Intensive colours (CH.H) Fruits

Light and friendly colours like red, orange and yellow, ideal world colours (DE.H) Fruits and vegetables

Intensive yellow (FR) Egg yolks

Bee hive colours (IT) Honey

Really red colour (DE.L) Tomatoes

## SHAPE

Crooked shaped (FR, CH.H) Cucumbers

Sometimes not so nicely shaped (CH.H) Fruits and vegetables

Small / XL sized (CH.H) Eggs

Small sized (CH.H) Apples

Different in size and varied (DE.H) Vegetables

## TEXTURE

Very fragile (CH.H), less watery (NL) Fruits and vegetables

Less watery (FR) Meat (when cooked)

Juicier (FR) Fruits

Crunchier (FR) Fruits and vegetables

Firmer (FR) Poultry

## OTHER

Unhygienic (CH.H) Meat

### 6.3 General aspects of experiences, expectations and preferences for specific sensory properties of organic food

Discussions about experiences, expectations and preferences regarding organic food brought different challenges for participants. This topic is discussed in depth (chapter 6.3.1). Consumers described sensory characteristics of organic food (chapter 6.3.2), but also stated that non-sensory attribute values surpass sensory sensations when it comes to the actual purchase decision (chapter 6.3.3).

#### 6.3.1 Overall reaction and the way the topic was discussed

In all study countries, consumer “experiences” related to sensory properties of organic food appeared to be rather subjective. Thus, it was **difficult** for the participants **to differentiate between real experiences and expectations** or general opinions (DE, FR, IT, NL, PL, CH). The specific difficulties and reasons underlying are described in the following section.

Generally, participants often had **difficulties in expressing experiences** with regard to sensory differences between organic and conventional products (FR, DE, IT.L, NL, CH). In the case of Poland, heavy users provided more specific remarks regarding their experiences with sensory properties. A comparison between organic and conventional food was difficult, as on the one hand, participants had **little experiences with organic food** (DE, FR.L, NL, PL.L, CH), and on the other hand participants had **few experiences with conventional food** (DE, FR.H, CH, PL.H). Little experience with organic food was - in the case of Polish users - governed by a limited availability, as certain products simply do not exist in organic quality (PL.L).

*“I would like to buy organic butter but I cannot remember if I ever had a chance to eat it despite the one I made using Thermomix [...]” (PL.L)*

*“I have never tried organic tomato sauce: I rather make it myself.” (NL.H) [Later on this participant will elaborate, and others will confirm this, that she feels that if one is interested in good quality food and buys organic products, one would make this sauce from scratch and not buy it readymade].*

*“An apple really tastes of apple, and not mostly of water. I’ve also had, for example, grapes. They were also really nice and sweet, also this real taste of grape.” (DE.L)*

Some participants had no experience of the **comparison of sensory attributes of similar products** (DE, NL, PL, CH) others did not pay much attention to sensory properties (CH, PL) as **sensory aspects of organic food played only a minor role** (DE, FR, PL.H, CH). The Swiss consumers that did not pay attention to sensory properties tended to introduce general statements and comparisons of organic and conventional farming.

Dutch consumers explained that if **one prefers organic food**, one is often **using basic ingredients** and tends to **eat less processed food**, which might explain that consumers have less experience with processed food. However, in the Netherlands there was one exception: consumers talked about sensory differences of processed dairy products and their sensory characteristics.

Generally, participants indicated greater **difficulties to perceive sensory differences** when **food is more processed** (e.g. ready-cooked) than **less**

**processed** (e.g. fresh food) (FR, IT.L, NL). With fresh products, participants are convinced of tasting a real difference between organic and conventional products (FR).

*“[...] basically, I see the difference. I appreciate the difference more in the fresh products. This difference is quite clear.” (IT.L)*

*“I am not convinced that organic products taste better. I would like to make a real comparison to make sure they do. For now I will only buy them for their innovating flavours or to try some new vegetable.” (FR.L)*

*“[...] sincerely, when I ate organic food, I didn't find any sensory difference in comparison to conventional one. I drank organic milk thinking that it could have better sensory attributes than conventional, but sincerely I did not meet any difference.” (IT.L)*

French light users more often spoke about differences regarding the sensory properties of organic products but they had a much more subjective image often mixed up with their expectations. Most of the perceptible differences French participants talked about were often linked to emotions or memories and were only **seldom** followed by a **concrete example**.

*“Organic products have a more typical, authentic taste. Nowadays, conventional strawberries are tasteless.” (FR.H)*

As Dutch participant expectations are linked with their knowledge of production techniques, they perceive the sensory attributes of **basic ingredients** to be the result of **organic agricultural production and preservation techniques**. They realise that the sensory characteristics of **processed food products**, are also determined by the **processing techniques** in addition to **organic agricultural and conservation techniques**. Another factor is the **recipes**.

*“Cookies one bakes [...], you have to do so many things to do that. If you talk about cookies and cake, you talk about very different products than when you talk about basic ingredients.” (NL.H)*

*“The more processed a product is, the harder it is to predict the taste. You have to take the whole process into account.” (NL.H)*

Reporting about experiences was also hard because in some countries light users especially **did not clearly distinguish organic products from conventional products**. Hence, e.g. home grown, garden grown, self-prepared food, market or farm sold products were considered as organic. (DE, FR.L, IT.L, CH.L). French light users often confused products bought at outlets other than supermarkets with organic products.

French light users seemed to have more images of a sensory superiority of organic products than heavy users. But this superiority was always **described by subjective opinions** and by **confusing garden grown products** and organic products.

*“Organic products have less water and a richer taste just like garden grown products.” (FR.L)*

Generally the results of the FG discussions implied that there are several factors that influence the way that sensory attributes of food are perceived and evaluated by consumers. The different ways are presented in the following section.

**Eating habits and sensory adaptation** influence consumers' preferences more in the long-term (CH). Polish and Swiss consumers were conscious about the fact that

sensory perception is influenced and interlinked with other factors such as eating habits and sensory adaptation (PL.L, CH.H).

*“It is impossible to separate certain customs, habits from sensory expectations, it is impossible because all is interlinked. Even if I do not like something at first I can change it with my consciousness.” (PL.L)*

*“I think it is important to what you are used to. I realised that I usually need the conventional [taste], I like it, I got used to it and this is for me as the preference. If I do [eat] an organic [product], I think I do not like it. It is different in taste and it fits not to the sauces I usually cook. It is changing everything. Then I simply prefer the conventional alternative. I find it better.” (CH.H)*

Another factor that can have an impact on the sensory evaluation of organic food is the **time, place and occasion when food is prepared or consumed**. One Swiss heavy user of organic products reported that taste and high quality food are always important to her. Two light users described that priority of taste and enjoyment of eating depends on their respective time resources. E.g. sensory aspects have a high priority when preparing a banquet meal, however, when there is little time available for preparing meals, sensory issues are not important to them at all. However, this consumer and others (IT, NL) did not report on differences in occasions for eating or not eating organic food (e.g. some organic products taste better or not). The place where people consumed the food also had an impact on the sensory perception of some Swiss consumers:

*“I think the environment is important. So if you eat somewhere, in a restaurant, where somehow nothing really fits, my taste is influenced by that. Or as I said, now we have a nice terrace, if you sit out there in the countryside, then somehow it fits together.” (CH.L)*

**Origin and production method** of some products seemed to influence perception of taste (FR, NL, CH). Swiss participants described (e.g. for eggs) that the imagination of which place or under which conditions eggs were produced, had a positive or negative effect on consumers' emotions which was reported as having an impact on the way **taste** was perceived.

### 6.3.2 Sensory descriptions related to organic food

Consumers were asked to describe their sensory experiences related to organic and conventional food. In general, consumers mentioned **several products and described their specific sensory characteristics**. Some common patterns could be found related to the sensory descriptions of certain products which are presented in the following paragraphs. The parameter “taste”, “texture” and “appearance” were most often described whereas the category “odour” was less often mentioned (see also chapter 6.1).

There are several criteria for evaluating sensory properties. Most of the descriptions referred to **positive experiences with organic products**. It revealed that most consumers used positive characteristics to describe sensory attributes of specific products. However, not all consumers judge organic products as tastier compared to conventional food. Especially, light users tended to mention more often negative quality parameters (e.g. shorter shelf-life (FR, DE.L, NL, CH.L) or visible quality matters; DE.L, IT, NL, CH.L) or negative perceived sensory attributes (DE, IT, NL, PL, CH).



The overarching sensory experience and expectation with organic products is that their taste is strongly oriented towards **authenticity**. Respondents elaborated on “authentic”: the taste of a product as it used to be instead of the taste of regular products as these are presently sold (NL) or expected products to taste and feel like the products from the farm or from their childhood (FR.L). Further expectations are a more intense, pure or natural taste (DE.L, FR, IT.H, NL) or more natural and less industrial / manufactured products (FR.L), since conventional products on the market today are perceived rather as tasteless, neutral or bloated. This authenticity is often linked to a higher sensory quality of the product. Italian heavy users described their expectation that organic food should express the basic and natural components of food.

*“[...] in my opinion, in the organic food the ‘natural’ aspects which are included in it should emerge” (IT.H)*

*“That’s how it tasted previously. (Organic) apples smell really like apples. They are much juicier, taste better.” (NL.H)*

*“The taste is always pure because of the other cultivation. Not rushed with artificial fertilizer. That’s why it is tastier, purer. It has grown by itself.” (NL.H)*

*“If you taste a regular apple, it often tastes like a banana! An apple is really an apple if you eat the organic one.” (NL.H)*

*“When I buy organic I expect to find a product with a stronger taste, I expect something that tastes more authentic.” (FR.L)*

*“I often have a special expectation to the different flavours I’ll find in a fresh organic product. As a matter of fact they’re often richer in taste and with something that distinguishes them from the regular products.” (FR.L)*

In particular, the taste or flavour of the product groups listed in Table 7 are mainly described as “different”, “stronger”, “more intense”, “authentic” or “natural”. In France, light users especially referred to attributes as “stronger taste”, “fruitier” and “richer” when talking about organic produce.

Looking at the sensory descriptions of organic vegetables consumers of all case study countries (DE, IT, NL, PL, CH) mentioned that these products would have the right **sweetness**. Similar to this, organic fruits were described as sweet (DE.L, FR.L, IT.H, PL). Other organic products such as milk (IT.H), sugar cane (IT.L), fruit juice, ham (NL) were also described as being sweet or sweeter. However, some organic products were also described as less sweet e.g. cookies (DE.H, IT.L, NL, CH.H), jelly baby (Gummy-bears, DE.H), jam (DE.L, IT.H).

Particularly, organic vegetables were characterised by less watery taste (NL, DE.L, CH.L). The same applied to fruits (CH.L), fruit juices (NL) or yoghurt (NL) that were described as less watery.

Whereas organic vegetables and fruits were positively described across their taste attributes, organic dairy, meat and bakery products were also described with **negative attributes**. E.g. yoghurt: velvet and lush (NL), less intensive, bland (CH.L); meat: unpleasant strong animal taste (NL, DE.L), artificial aromas missing (CH.L); bread: sour / pappy taste (DE.L); less tasty (CH.L); wine: tasteless (IT.L). A common pattern is that light users mention negative parameters.

**Table 7: Sensory descriptions of taste related to organic food perceived by light and heavy users**

Sensory categories and products / product groups	
TASTE	Sensory characteristics of specific organic products
Vegetables	Strong taste / flavour (IT.L), sourness (IT.H), different taste and flavour (tomatoes, IT.L), sweet taste (fennel, IT.L) Potatoes: true taste, full bodied (IT.L); tastier (NL); sweeter (carrots; NL), less watery (lettuce / tomatoes; NL), authentic bitter taste (Brussels sprouts / chicory; NL); more intense, better, less bloated / watery (DE.L); sweeter taste (tomatoes, kohlrabi, DE.L) very intense and natural taste (DE.H), natural taste (cauliflower, DE.H), right sweetness (PL), more taste and less water (cucumber, CH.L), typical taste (beetroot, carrot, CH.H), profound sweetness (carrots, CH.H), freshness (salad, CH.L), stronger and richer taste (FR.H)
Fruits	More marked taste / aftertaste (IT.L), particular / sweet / imperfect / succulent taste (IT.H), sweet taste (apple, IT.H) particular or true taste of apple (old apple variety, IT.H); more intense in flavour (apples, NL); Real, how fruit ought to taste, natural, no chemical sweetness (DE.L), taste of specific variety (apples, DE.HU), right sweetness (PL), more flavour, not watery (CH.L), more intensive (pears and apples, CH.L), characteristic taste of variety (apples, CH.L), fruitier taste, more complex taste (FR.L), stronger and richer taste (FR.H)
Dairy products	Acidity, intense taste (IT.H), intense / sweet taste (milk, IT.H); fuller of taste, more tasteful (with connotations of: more intense, richer, velvety and lush; yoghurt, buttermilk, curd cheese, NL), smoother thicker and containing less water (yoghurt NL); more intense taste, tasting of something (cream, yoghurt, cheese DE.L) more intense, better, creamier, smoother, sharper (milk, DE.H); taste like the product (milk, CH.L), more fruit and less intensive / strong / sweet, like home made, too bland (yoghurt, CH.L), pure and creamy (cheese, CH.L), stronger taste (FR.L)
Meat	Satisfying taste, rich (IT.H), strong taste (IT.L); tastier, the taste as I remember it from earlier days, the real taste / unpleasant strong animal taste (pork NL), sweeter (ham, NL); taste too much like animal (DE.L), more intense taste (poultry meat, DE.H), smoked in natural and proper way (PL); stronger in taste (CH.H), very intensive, very delicious, artificial aromas missing (CH.L), more taste (FR.H)
Bakery products	Superior taste, less sweet (cookies, IT.L), more taste of raw flour (bread and cookies, IT.H); more authentic in taste, firmer in structure and more filling or satisfying (bread, NL), less sweet or another kind of sweetness (cookies, NL); sour / pappy taste (bread, DE.L), individual ingredients can be tasted (bread and cake, DE.H), taste of spelt (DE.H), variation in sweetness (cookies, DE.H), right taste (bread, PL), less tasty, like home made (cookies, CH.L), less sweet (cookies, CH.H), no taste (bread, DE.L)

OTHERS	
Chocolate	Higher taste (IT.L), smoother, more intense, taste what it was made of, smooth taste (DE.L), heavenly taste, impression of tasting the individual components (DE.H)
Coffee	Less acidity (PL)
Fish	Taste of sea and freshness (IT.L)
Fruit juice	Better taste (IT.H); less watery, taste of fruit, fuller of taste, sweeter but different kind of sweetness than regular (NL)
Gummy-bears	Less overly sweet, not artificial (DE.H)
Herbs and spices	Do not taste all the same, more intense taste (DE.L)
Jam	Not as sweet (DE.L) intense flavour, acid taste, less sweetness and more fruit (IT.H)
Olive oil	Tastier (FR, NL)
Pasta	Particular taste due to flour, raw (IT.H)
Sugar cane	Sweetness more intensive (IT.L)
Tea	Intense taste (IT.H); less harsh, not as artificial (DE.L)
Tomato sauce	Nice taste, less acid (IT.H); more pure, less chemical (NL)
Wine	Sourness, intense taste (IT.H), tasteless (IT.L)

When considering taste, fruits and vegetables were described very positively (see Table 7). However, sensory attributes related to the appearance of these two product groups emphasise that they are more **heterogeneous**, irregular, less perfect in their shape but also thinner, smaller or shorter (see Table 8). As indicated in chapter 6.1 “Criteria for evaluation of sensory properties”, consumers often use these features as an indicator to judge whether a product is organic or not (DE, NL, CH) or to use as a quality indicator (DE). In consequence most consumers appreciate organic products despite these flaws:

*“[...] my parents have a vegetable garden in Monopoli where they cultivate organic fruit and vegetables. The flavour and look are totally different than conventional food. Fruits are smaller, bruised and differ from each other, but I appreciate them a lot!” (IT.L)*

*“Fruit of the (organic) farmer is often deformed. Yesterday I got nectarines, not nicely shaped but dented. But they taste so good.”(NL.L)*

The aspect of colour was also used to describe the appearance of vegetables (DE.H, PL), fruits (IT.H, DE.H, PL, CH.H), dairy products (IT.H, DE.H), meat (NL, DE.L) and some other products (IT.H, DE.H). With a few exceptions, **colour** was only mentioned by heavy users. Words such as “more intensive” or “deeper” were used; but so were descriptions of “weak colour” or “less nice in colour”.

**Table 8: Sensory descriptions of appearance related to organic food perceived by light and heavy users**

APPEARANCE	
Vegetables	Less perfect / standardised, can be dirtier (e.g. potatoes, spinach; NL); thinner (cucumbers, DE.L), uneven and not well shaped (paprika, DE.L), heterogeneous colour (tomatoes, DE.H), smaller, shorter, thinner and more furrowed (cucumbers, DE.H), nice colour (PL), smaller in size (FR.H, CH.H), crooked shaped and not standardised (FR.H), smaller and sometimes unusual shape (FR.H)
Fruits	Small size (IT.H), natural colour (tomatoes, IT.H), shapes are more irregular and pieces are less perfect (IT.L), intense colour (strawberries IT.H); apples can have worms and are natural and authentic (indicator that no chemicals were used, NL); imperfections, not so even (pears and apples, DE.H), nice colour (PL); very intensive colours, not so nice in shape, heterogeneous appearance, smaller in size (FR.H, CH.H), less nice in colour (apples, CH.H), crooked shape and not standardised (FR.H), smaller and sometimes unusual shape (FR.H)
Dairy products	Intense colour (IT.H), darker colour (milk, IT.H); colour depends on season (milk, DE.H)
Meat	Nicer / deeper red, natural colour since it lacked nitrate (NL), less pink (salami, NL); Fresh and red, Bordeaux colour, does not get a grey sheen as quickly as conventional meat (DE.L)
Bakery products	Appealing appearance (cookies, IT.H)
OTHERS	
Eggs	Differing sizes, dirtier, egg yolk had yellower colour (DE.H), stronger colour, more intensively yellow (FR.H)
Fruit juice	No colourant (IT.H)
Pasta	Have a healthy appearance (IT.L), opacity (IT.H)
Tomato sauce	Weak colour (IT.H)

Compared to the above mentioned categories the sensory descriptions of **the texture were less often used** by consumers (see Table 9). However, some similarities could be found. E.g. organic vegetables were described as firmer and / or crispier (DE.H, FR, IT.H, NL), the same applied to organic apples (PL). Organic meat was characterised to have a firmer and / or tenderer structure (IT.H, NL, DE.L, DE.H, CH.H). Some consumers described organic cookies as drier (DE.H, NL). On the other hand some of the German consumers also mentioned negative attributes for bread such as “pappy”, “bone dry” while others used positive parameters (IT.L, DE.H, PL, CH).

**Table 9: Sensory descriptions of texture related to organic food perceived by light and heavy users**

TEXTURE	
Vegetables	Firmer / crispier (e.g. green beans, lettuce, potatoes and carrots; NL), longer firm and crisp (tomatoes, DE.H), firm (lettuce, IT.H), tender (cauliflower, DE.H)
Fruits	When you bite into organic fruit you notice the juice, something comes out. Not like when you bite and have cotton wool with strawberry aroma in your mouth (DE.L), containing less water, juicy (PL), crispy (apples, PL), dried fruits: soft, humid, dense and glittering (PL)
Dairy products	Good mouth feeling (DE), creamier, mouth feel of clumps from creamy layer is good (milk, DE.L), different consistency, creamier (cream, DE.L), less intense, authentic, softer, more full-bodied, fruitier / tastier (yoghurt, DE.L), less watery (milk, DE.H), creaminess, good consistency / mouth feel (PL), creamy (CH.H)
Meat	Tenderness (IT.H); More tender and less tough, firmer and tougher (especially for chicken), when frying, meat does not shrink as much and less water comes out (chicken; NL); retains volume during cooking (DE.L, DE.H) and loses less liquid, tender, soft as butter, well-seasoned (DE.L), better consistency, stays firm, tender and moist (poultry, DE.H), juicy but not watery, compact texture (PL); tender (CH.L), more tender, firm in consistency (CH.H), more tender (FR.H), less water (FR.H)
Bakery products	Raw texture (bread, IT.L), drier: less fatty taste (cookies, NL), stale and dry (cookies, DE.H), firmer, more filling / substantial, too firm and hard, pappy, tastes of nothing (bread DE.L), pappy, bone dry (DE.H), lighter, softer but moister (bread rolls, DE.L), right consistency: compact, not like cotton wool (bread, PL), similar structure to home made bread, not dry (CH.H)
OTHERS	
Chocolate	Different way of melting, it crumbles a little (DE.L)
Olive oil	Thicker (NL)
Gummy-bears	Less firm (DE.H)
Eggs	Compact (IT.L), harder shell (DE.H)
Pasta	Consistent, more structure (IT.H), Rough texture (IT.L)
Honey	Dense, rough texture (IT.L)
Tomato sauce	Thicker, less watery (NL)
Salad	More tender (IT.H)

Odour was the sensory category that was the least often used by consumers to describe organic products. The few statements recorded have in common, positive attributes with an emphasis on a more intense, better or fragrant odour of the products (see Table 10).

**Table 10: Sensory descriptions of odour related to organic food perceived by light and heavy users**

ODOUR	
Vegetables	Particular odour (IT.H), Strong odour (tomatoes, IT.L), more fragrant (apples, NL); one can smell the flavour (tomatoes, DE.H), good / intensive smell (PL), smells like sunshine (tomatoes, CH.H)
Fruits	Natural smell (IT.H), Good / intensive smell (PL, CH.H)
Dairy products	Smell of cow (raw milk, DE.L), good smell (PL) intense smell (butter, PL.H)
Meat	Fat smelling (IT.H); right and pleasant smell (PL),
Bakery products	Smells like life / freshness / grain (bread DE.L), right smell (bread, PL)
OTHERS	
Colza (rape) oil	Stronger odour (FR)
Olive Oil	More fragrant (NL)

### 6.3.3 Non-sensory attributes and their relevance as a buying motive

The results of the FG discussions suggest that **sensory attributes** of organic products are **not the main buying motive** for consumers. As already mentioned, some participants did not notice a difference to several similar conventional products, especially when processed (FR) or they valued their importance very low (PL, CH). Especially heavy users tended to buy organic food because the organic production system meets their personal values (e.g. environmental friendly (FR, IT, NL, PL CH.H), animal welfare (NL, IT, CH), fair trade (DE, CH) etc.) whereas **sensory aspects seem to be less important** to them (PL.H, CH.H).

In discussions on sensory experiences, it again became clear that for German light users, other parameters play a large role and positively or negatively influence the choice of products. While the price of organic products is negatively rated, rearing conditions for animals, no use of hormones and chemical residues has a positive effect on the buying decision.

As a consequence the **purchase and consumption of organic food satisfied heavy users** (PL.H, CH.H), and **several non-sensory attributes** as motives for consuming organic products were identified. Aspects mentioned were the (i) **production and processing methods** employed, (ii) the **origin** of the food and (iii) **health aspects**.

(i) When considering production and processing methods, participants show two different behavioural patterns. On the one hand, organic products are preferred as they are less processed and contain healthier ingredients (see chapter 6.4.3), or because consumers are in favour of the organic farming approach.

*“No, [...] I just have a better feeling regarding my guest or my own family, so that I can say I did all that was possible – I bought an organic product [...] that gives me some security, and now we eat, we enjoy it.” (CH.H)*

Also for German heavy users, the variety of organic products was emphasised positively and described as important, though, other parameters such as **manufacturing process** or the **ingredients** of an organic product had a greater influence on the purchase decision.

*“I don’t eat and buy organic products because their taste differs from conventional products but because of the production processes on which they are based, i.e. the ingredients, the chemistry, etc.” (DE.H)*

Also for a Polish light user, the way of processing was most important. For example, the consumer **did not recognise any differences in taste** of organic cereal products but preferred them because they are **low processed** (PL.L).

Some heavy users showed a strong commitment towards the **organic farming approach** (PL.H, CH.H). Benefits from the production method including animal welfare were of higher importance than any deficiencies in sensory properties (PL). In this regard, some participants described that they would buy organic meat because it is produced under **animal friendly** conditions. This fact carries greater weight than sensory aspects, as some participants did not perceive any difference in taste (NL, CH.L).

*“[...] I check the grain, I check the fat, and that tells me already a lot. I think that organic food has not a great taste, so perhaps there is not even any difference in taste. So I might buy organic because of my love for animals [...] you buy it because it has been held very different.” (CH.L)*

*“My wife is very sensitive to pollution, like radiation and smoke. I myself have a skin disease. We pay a lot attention to what we eat. Therefore we started to buy organic products without any chemical residues. Only after a while we discovered that it tastes better.” (NL.H)*

However, people might appreciate organic products not just out of concern for animal welfare (e.g. cows can be out at pasture instead of being indoors permanently) but because they find it tastier (e.g. dairy products) (NL).

As for the French light users, ‘organic’ meant farm grown and more natural, they often considered organic products as being comparable to garden grown products, or products that came from small producers. As a consequence they often thought of organic products as having less water content and therefore more taste.

*“The organic fruits have more flesh. I tried an organic peach the other day, and it had so much more flesh than the one’s you get in the supermarket, and it was juicier too.” (FR.L)*

*“I feel that they [organic product] taste closer, and feel closer, to what we are supposed to eat. Something like the products from the past, before this whole massive production we have nowadays.” (FR.L)*

Nevertheless, for some participants **sensory qualities seemed to be more important than the production system** (organic / conventional). Sensory properties such as “taste” (CH.L) or “freshness” (NL.H, CH.L) were more crucial for consumers than the way a product was produced.

*“Organic is just one option, as there are several brands. It is just like another trademark and if this tastes best, then I take that.” (CH.L)*

(ii) For some participants, the **origin of food** (e.g. from a certain farm, from the producer in the neighbourhood) seemed to be more crucial than the production method. Consequently, the origin of products coming from a specific country (associated with a high quality standard; PL.H), from a regional producer (FR.H) or from their own garden or self-harvesting system (NL) (associated with freshness, NL, CH.L) was often directly linked to a higher sensory quality.

*“A farmer is indeed not always organic [another CH.L: agrees to], I buy a lot directly from farmers but I do not think it is organic. But it is fresh [another CH.L: agrees] and I think this is essential now for me among others. So I believe that most farmers do not produce organic otherwise it would be indicated on a big sign. But for me it is not so important. I think freshness is the most important issue for me.” (CH.L)*

*“It doesn’t make sense to buy organic products from Latin America if it comes to Europe by plane it is not environmentally friendly anymore. I’d rather buy from local farmers.” (FR.H)*

In particular, Polish heavy users considered dairy products from their home country to be a guarantee of superior quality. The same applies to Italian pasta which was perceived to have a certain quality (PL.H). Also, Dutch participants perceived a difference in product quality of e.g. vegetables bought directly at the farm are fresher than in the supermarket.

*“Vegetables bought at the farm are better than in a shop. [At a farm] they harvest them in the morning and at 10 o’clock they pick them up.” (NL.H)*

(iii) Apart from altruistic reasons, the **health** issue seemed to be another important non-sensory-factor that goes beyond the expectations of sensory aspects (PL.H, CH). Polish heavy users reported buying organic food mainly because of health concerns or life style and undervalued the importance of sensory attributes of organic products. In the context of healthy organic nutrition, some consumers preferred certain ingredients such as whole grain flour instead of white flour. Organic food was expected to be high quality whole food, even if sensory attributes (e.g. taste or appearance) of conventional food were rated higher. (CH)

*“When thinking of pasta, I expect wholemeal instead of subtle things [...] something special, which even has a higher qualities. Wholemeal doesn’t necessarily taste better, but it is better for your health, because it has more dietary fibres, for example. This is why I buy organic pasta, because they have a higher quality.” (CH.L)*

*(CH.L): The only products that I buy organic quite consistently are dried apples and „steamed apples“ because they are not sulphurised, which is so unpleasant to eat . [When I use the peel of conventional] lemons, oranges [for cooking]. I have the feeling that you can't wash it away, they are impregnated ..., and then I have it in my food.*

*(Moderator): So you buy these products basically not because they taste or smell better?*

*(CH.L): (??) because I think they are not toxic.*

However, due to a recent debate on television and in the press, some Dutch consumers judged conventional food production standards as sufficient regarding health aspects and they do not think that organic food is healthier due to the lack of chemical residues and additives.



*“Studies [whether organic food is healthier than conventional food] contradict each other. I just don’t know what is better; it’s more a feeling that organic is better [than a firm fact].” (NL.H)*

## **6.4 Consumers’ sensory expectations and preferences related to variability and standardisation of organic food**

As sensory attributes of organic and conventional food might differ, the respective expectations and preferences of consumers also possibly show differences. Thus participants were asked for which products and in which cases they would expect sensory attributes of organic products to be different / similar from conventional products. They were also asked to state the reasons for these expectations.

This chapter is divided into four subchapters. In chapter 6.4.1, the overall reaction and the way the topic was discussed is covered. Chapter 6.4.2 describes expectations and preferences towards standardisation and variability from a general point of view. Chapter 6.4.3 focuses on sensory attribute differences, while chapter 6.4.4 illustrates similar sensory attributes of organic and conventional food.

### **6.4.1 Overall reaction and implications, and the way the topic was discussed**

Swiss and Polish participants discussed their expectations on sensory attributes related to variability and standardisation of food in a generalised way. Swiss participants did not always refer to organic and conventional food but to different **production methods, ingredients or production and processing techniques and the point of sale**. To give an example: participants compared “mountain cheese”, which has a higher variance in taste (more intensive but also with potential negative sensory attributes) with more standardised cheese. Packed cheese is expected to be more standardised whereas (mountain) cheese that is sold directly by the producer can show a higher variance but has to meet higher requirements with regard to sensory attributes. (CH)

*“An alpine cheese cannot always taste the same [...], the alpine flora is not the same every year, it changes. Therefore, there has to be a certain difference.” (CH.L)*

Polish heavy users referred – in the context of variability and standardisation – to conventional products. They reported on a **perceived change of variability** over time and referred to the taste of conventional food “as it used to be”, with some nostalgia.

*“[...] in the past, conventional food used to taste better but now all is processed in a similar way. I still remember conventional ham from the time 10 years ago. It was really tasty and it looked well, it was a taste of real ham from the countryside.” (PL.H)*

Polish consumers, unlike consumers in other countries covered by the research, are **limited in their choices by the size and structure of existing organic product availability**, and the fact that many organic processed and foreign products are still unavailable in Poland. The participants’ expectations and preferences reflected barriers resulting from the immature character of the Polish organic food market. These issues affected the results of the discussion on variability and standardisation of organic food.

Some Italian participants faced difficulties in interpreting the concept of variability / standardisation in the right way. In particular, they referred to the **concept of standardisation** only for **conventional products** while **organic food** was

**associated with the concept of variability.** In addition, many participants confused the term “organic products” with “home made products”, “local products”, etc. Light users often differentiated between conventional products on the one hand and organic, local, home-made, etc., products on the other hand. However, after an explanation run by moderators about the correct meanings of “variability / standardisation” and “organic products”, the discussion about the expectations and preferences of participants was carried out. In short, the discussions were run in two directions. How much and in which ways sensory aspects of organic food should differ from conventional food was discussed first.

*“[...] organic must remove completely from conventional food.” (IT.L)*

Second, it was discussed if sensory aspects of organic food should or should not be standardised in the way of many conventional food products.

As already mentioned, Dutch participants had different expectations of sensory attributes related to standardisation and variability depending on whether a product is a **basic ingredient** or a **processed one**. Participants perceived the sensory attributes of basic ingredients to be the result of organic production and preservation techniques and due to shorter supply chains and sales in season. They regarded, for appearance, less standardised vegetables and fruits to be an indicator of organic production and conservation techniques with **implications for a better flavour**. With respect to processed foods, the perceived difference is between regular stores and specialised stores (see chapter 6.4.3).

In Germany, the discussion differed significantly between heavy and light users. Whereas light users tried to talk about this topic based on examples and concrete products, heavy users discussed the question of standardisation and variability in a more general way. Additionally, they did not discuss this topic with the same intensity as the light users because for them it seemed to be very clear that organic products do not need to have the level of standardisation that is typical for conventional food products.

In France, this topic led to discussions that rapidly turned to economic considerations. For most French participants, variability and standardisation were disregarded as key characteristic of organic products. Some consumers argued that non-standardised organic products should be cheaper, when in reality the opposite was often true.

#### **6.4.2 General aspects on expectations and preferences towards standardisation and variability of organic food**

Participants mostly related their experiences and expectations to specific products or sensory attributes, though general statements regarding the differences of organic and conventional food were also made.

Generally, participants agreed upon the fact that organic food **should not be standardised** and that it should differ from conventional in terms of variability and sensory aspects (DE, FR.L, IT, PL, CH.). Hence, the variability of organic products was perceived as important (DE, IT, PL, CH).

*“[...] for me it is not acceptable that organic food would be similar to conventional food in terms of sensory attributes”. (IT.H)*

*“They shouldn’t have to be or do anything. They should be exactly as they are. And because of this, they probably taste different to conventional.” (DE.H)*

Dutch participants claimed that organic processed food is standardised in comparison to organic basic ingredients. The **lack of standardisation** in organic basic ingredients is perceived as an indicator of its **superior quality**. ‘Organic’ in processed (i.e. standardised) foods is perceived as an aspect, together with other factors, that makes a product superior. In the Netherlands, high-end products are usually marketed with a cluster of associations: artisanal (not a legal term, but one that refers to small scale production with more attention paid to quality of ingredients and production), organic, and also regional.

In France, however, heavy users really saw variability as a way for retailers or producers to fool them and make them think the products (mostly fruits and vegetables) are more natural. Although few participants (light users) seemed to value the variability of organic products, the majority agreed that standardisation and calibration relate to waste and price considerations.

Participants linked the appearance e.g. less standardised shapes and less perfect vegetables or fruits (IT.H, NL) (e.g. like dented nectarines and bad spots on apples; NL) to the nature of organic production and preservation techniques. Participants **were not particularly in favour of less standardisation** but took it as **an indicator for other aspects** which they preferred, like **taste** or **texture** (FR, IT, NL).

*“[...] when I observe a fruit, I easily recognize if it is organic or not. While conventional fruits are homogeneous in terms of shape, organic fruits have different forms. This reassures me that it is organic!” (IT.H)*

*“Organic fruit and vegetables often have a more rustic shape. But what counts are the taste and the texture that’s often better.” (FR.H)*

*“We do get the weirdly shaped potato more often than the regular product buyer might get in his supermarket, but the final product superiority, once you’ve cooked it, is undeniable.” (FR.H)*

French participants appreciated rediscovering products and tastes from the past and linked organic food to desired varieties within a product group.

*“When you go to organic shops you can always rediscover products, fruits and vegetables from the past. There’s always a different variety of a potato or carrot you’ve never heard of.” (FR.H)*

*“There are plenty of flavoured yogurts or beverages or juices you only find in organic shops, plenty of new flavours to discover.” (FR.H)*

*“I like buying organic wine from time to time. What I like about it is that I am always surprised with what I get. Each bottle, even from the same wine or the same vintage tastes different! It makes me think about the small wineries I have visited in the past.” (FR.L)*

*“Organic products do have a different, stronger and more authentic taste we are not used to, but that’s one of its advantages. Buying organic from time to time is nice, because you’ll always be surprised by subtle changes in taste, smell, texture [...].” (FR.L)*

For other participants, the issue of standardisation and variability was beyond the area of their interest (PL). Participants prefer some products in organic quality, while **other products are purchased in conventional quality** (NL, PL, CH). For example, in the Dutch study, a group of consumers could be identified that appreciated sensory characteristics of organic products **on an ad hoc basis**: they buy specific organic products e.g. garlic, tomatoes in the supermarket, as they have discovered these specific products taste better than the regular counterparts. One Dutch light

user judged particular products in their conventional and organic variant. On the one hand, tomatoes are never bought in organic quality, as they were not better than conventional. On the other hand, organic apple juice is bought since it tasted so much better than the conventional alternative.

Therefore, consumers simply **dislike certain organic products** (PL.L) (see chapter 6.4.4) or the conventional alternatives are preferred they are far **more available** (PL.H).

*“[...] there is a larger range of conventional apples and I sometimes prefer non- organic ones even if I know they were sprayed.” (PL.H)*

*“I found good apples that were not organic but from a known source.” (PL.H)*

The availability of organic products was a specific concern in the Polish discussion groups. Polish participants are rather governed by the **availability** and constraint on organic food supply. Participants referred to the **retail channel** and the **type of product** having an impact on the search for variability versus standardisation. There is an effort required to access a varied assortment of organic food. (NL, PL.H)

*“I have good access to producers and distributors of organic food. At this moment I would not find any conventional product that I would consider better than organic.” (PL.H)*

The limited availability of organic food in Poland is also reflected in the call for **more diverse and new organic food** (PL.L).

*“I think it would be nice if there was more diversity and products from different cuisines. This diversity of cuisines is observed in industrial food. If there are, for example, restaurants where you could eat something organic but as you could eat it in Spain.” (PL.L)*

Polish heavy users also discriminated between Polish and foreign products claiming taste properties were influenced by the origin of food products. Hence, the **origin of the product** was one perceived factor having an impact on the variability of sensory properties of organic food. Dairy products, and fruit and vegetables of Polish origin were especially perceived to be of higher quality. Macaroni from Italy was perceived as of better taste.

*“[...] when it comes to vegetables and fruit there are two categories – foreign ones and ones produced by Polish farmers. At this moment distributors of organic food buy foreign fruit and vegetables. This is another category of products,, they [...] are different in appearance, smell and taste. Just like conventional ones, but they are without certain bad properties.” (PL.H)*

The origin of the products was also discussed by French light users in a different way. They ascribed variable and less standardised organic products to be produced, picked and processed by small farm structure or small companies. In this regard, participants felt **unsure about the traceability and provenance** of the products. Participants felt uncomfortable with the lack of detailed information concerning the production, processing and controlling process.

*“Sometimes the organic manufactured products come from small farms and we have little information about where and how they were manufactured and I’m sometimes a little afraid about traceability and food safety stuff.” (FR.L)*

French light and heavy users agreed that there’s **little difference** between organic and conventional products when it comes to **processed products**. Both consumer profiles think that in most cases the **difference** can only be really felt on **non-manufactured products** like fruits, vegetables and meat. However, other participants are of a different opinion as discussed in the following chapters.

### 6.4.3 Sensory attributes of organic food should be different compared to conventional

When comparing organic to conventional products and focusing on expected differences, participants most often commented on the sensory attribute “taste”. Here, participants differentiated expectations between unprocessed and processed organic commodities. Only a few participants commented on their expectations regarding the visual appearance and texture of food.

#### **TASTE: “Strong innate taste” of especially “unprocessed commodities” (e.g. meat, vegetables, fruits, milk, etc.)**

Participants in almost all countries referred to a “**strong innate taste**” of organic products (DE, IT, CH, PL), differing from conventional food. However, statements in this matter differed between actual experiences or expectations of organic taste sensations. On the one hand, it was reported that organic products have a superior taste, though (NL, CH.H) not all participants agreed on this (NL). On the other hand, it was expected that the taste of organic food should be different to conventional food so as to be easily distinguished from conventional products (IT.L). Participants therefore expected organic products to taste “**authentic**” (DE.H, FR, IT, PL), “**healthy**” (PL) and “**natural**” (DE.H, IT, PL) and to have a “**more intense taste**”, “to have a particular **identity**” (IT).

*“[...] organic food should have a more intense taste. In addition, it should distinguish itself from conventional products!” (IT.L)*

*“[organic food has to have a particular identity and taste, or] its natural taste, the old taste.” (IT.L)*

*“That’s how it tasted previously. (Organic) apples smell really like apples. They are much juicier, taste better.” (NL.L)*

*“The taste is always pure because of the other cultivation. Not rushed with artificial fertilizer. That’s why it is tastier, purer. It has grown by itself.” (NL.H)*

*“If you taste a regular apple, it often tastes like a banana! An apple is really an apple if you eat the organic one.” (NL.H)*

While the mentioned statements referred to organic products in general, participants related authentic taste sensations especially to unprocessed commodities (CH, PL) as e.g. meat, vegetables, fruits and milk (CH). Participants experienced these commodities as “better”, “different”, “more intensive” or “authentic in taste” (CH). Swiss heavy users furthermore appreciated or expected a **higher diversity** of varieties in **taste** especially but also **appearance** of e.g. organic fruits or vegetables.

*“Vegetables and fruits are the commodities I can taste the most differences. There is the conventional rather flavourless product or the one of watery consistence or of a certain colour that you can relate to and know what it is [tastes]. I simply expect of organic vegetable and fruits, that a tomato tastes like a tasty tomato and that a courgette tastes like a tasty courgette and for grapes or apples or whatever, that it does not just look as if it had no taste or that it tastes as cells filled with water.” (CH.H)*

## **TASTE: “Typical organic recipe and taste” of “processed commodities“ (e.g. yogurt, biscuits, sweets, dairy products)**

Participants presented a strong norm that **processed** food, enriched with various components is “**unhealthy**” and “**unnatural**” (PL). Focusing on the taste, participants believed that all conventional food tasted the same, in terms of lack of strong taste or artificial taste. Hence, conventional food lacks “personality / authenticity”, attributes that are accredited to processed organic food and reflected in their possible slight variability when it comes to taste and texture. Organic processed food is expected to have a more authentic taste or to taste like a product from the farm, but also to be at least as good as the conventional (FR). Polish participants liked the **innate taste** of organic food while interference would represent a loss of authenticity. The same applies to Dutch participants, though some did not have experiences with processed organic food. For the ones not having experience, they expected processed products to taste “more authentic”. However, they were less certain, as other influencing factors were mentioned by them such as production and processing techniques or the recipe.

*“(On organic tomato sauce) I never eat those readymade sauces but I expect that it wouldn’t have any flavours that it doesn’t need to have because it doesn’t contain any additives.”*  
(NL.H)

French participants referred in this regard to **dairy products**, which are expected to have a fuller taste and texture. They described organic yoghurt and dairy products as being **less smooth and standardised than conventional products** and they considered it as being an advantage or as **something looked for** when buying an organic dairy product.

*“Organic dairy products are manufactured with whole, non pasteurised milk. This process gives the final product a more authentic, full taste. Like yogurts or cheese from the farm.”*  
(FR.L)

Participants very much related their taste experiences and expectations to specific ingredients and nutrient contents (DE, CH). Participants assumed that organic food has a **lower level of certain “unpleasant” ingredients** than equivalent conventional food. The sweetness of organic food was mentioned in this regard.

Participants stated that organic sweets / candy (DE.L, NL), organic jam and soft drinks (Bionade) (DE.L) differ from comparable conventional products (DE.L, NL). Participants stressed that organic products are **less sweet** (DE.L, NL) e.g. whole grain cookies (NL) and contain a different type of sugar (brown sugar) (DE.L). The majority of the participants supported the use of brown sugar instead of refined sugar. It is perceived as more natural and more pleasant (DE.L).

*“I do find that this sweetness that organic products have is simply a pleasanter one for me, because it means I can still enjoy the product without the taste being excessively drowned out by sugar.”* (DE.L)

Only two participants stressed the opinion that organic sweets were **sweeter** (DE.L).

Participants also reported **lower fat** (DE.L, NL) contents e.g. in whole grain cookies (NL), **lower salt** (FR, DE.L, PL.H) and **spice levels** (FR, PL.H) as positive organic product qualities, where the participants affirmed differences to conventional products.

*“It’s always implied with organic food that it is healthier, and a healthy diet logically contains little fat.” (DE.L)*

In contrast, some participants (DE, NL) appreciated a high fat content in organic products, as it is perceived as an important taste component (“fat carries taste”, DE.L).

Participants referred to their experiences with organic yogurts and biscuits that have lower sugar content and a **higher amount of fruits** (CH). A higher amount of fruits was also seen for organic lemon juice (DE.L). Italian participants stated that the **taste** of organic food ought to be achieved **by basic ingredients** as e.g. whole wheat flour, rather than by secondary ingredients (e.g. additives):

*“[...] in my opinion, organic biscuits should be more often made of whole wheat. When you eat an organic biscuit you can taste the whole wheat flour and not only the sweetness given by sugar as is the case with conventional biscuits.” (IT.L)*

Polish heavy users claimed that it is possible to elicit a “natural taste” of organic food that is distinctive for a specific product. However “natural taste” is more a matter of our habit and imagination.

*“If you buy organic tomato juice in a shop, it is dense and dark and the organic one is watery and there are such “particles” in it. It tastes different and the first sensory sensation can be negative because we are used to dark and dense tomato juice.” (PL.H)*

The statements so far show a perceived or experienced difference between organic and conventional food. These differences were seen by consumers as a **typical organic taste**. The special composition of ingredients also corresponded with consumers’ expectations regarding the sensory attributes of the specific product. Dutch participants gave one explanation for this. They considered the processing of influence. Organic products are not enriched with chemical additives, but then organic becomes linked to other aspects of food in their recipes. For instance, with bakery products, ‘organic’ is linked with healthy, hence whole grain cookies with less sugar and fat. Or, ‘organic’ is linked with artisanal, like high end cold meat cuts. Organic is then considered as one of the aspects that **makes a product of general higher quality**. Hence, organic is not only seen as another standardised quality just of organic origin. French participants came to the same conclusion, for processed products (e.g. bread, wine, cheese, etc.) they believe that such processes as “handmade”, “traditionally made” give a special note to organic products that makes a difference between processed conventional and organic food perceivable.

*“I think that products like bread, cheese or wine, where a farmer or a baker has his “savoir-faire” combined with good raw material, like organic ingredients, could make the difference. I’d like to compare it to conventional products.” (FR.L)*

## **TASTE: other aspects of taste and related issues**

Most comments made about taste sensations are mainly referring to differences between conventional and organic food. However, in all German light users focus groups, **differences in sensory properties** and **among different organic qualities** were noticed. In their opinion, not all organic products can be judged equally.

*“I always differentiate between EG-Bio, Demeter or Bioland. For me that’s often still a big difference. With EG-Bio I don’t always taste the difference. I find Demeter or Bioland really organic.” (DE.L)*

Participants often claimed that organic food **ought to taste different** to conventional food (FR, PL, CH.H). However, Swiss heavy users did not report the difference to be better or positive per se. Polish light users were more reluctant than heavy users to admit that there are organic products that might taste different. They aspired to be considered as organic food consumers and such a “confession” could threaten their self perception as dedicated organic users.

The taste of organic compared to conventional food was furthermore discussed in terms of (i) reasons **why taste sensations differ** or are expected to differ and (ii) the **importance of such differences**.

(i) Besides the reasons already mentioned **why taste between organic and conventional food differs** (e.g. no use of additives, low processing, origin of the products, low levels of unpleasant ingredients, etc.) participants added some more claims as the **point of sale**, perceived **health** differences and expected differences due to a **higher price** of organic food. French light users, who often confused organic with home grown products, questioned whether the major difference between organic and regular fresh fruits and vegetables came from the organic production and processing processes or from the size difference between regular and organic farm units with the organic ones often being smaller than the conventional ones.

*“Me too, I also believe in this difference between organic and conventional tomatoes, but sometimes I wonder if that wouldn’t come from the size of the farms that produce these organic products. They often taste like garden grown products that are grown in small gardens. Could that contribute to this difference as well?” (FR.L)*

Dutch participants stated that differences in taste sensations **depend on the point of sale**. Organic products from the supermarket are expected to taste similar to the conventional alternative, especially the Premium-brand products. Organic products bought at a whole food store are expected to taste differently. Though, the standard is set by the notions of health and environmental consciousness. This means that the products should primarily have a positive effect on the body and the environment, with the aspect of flavour being second rated.

*“It’s logical that Albert Hein (the main supermarket chain) with its organic products, like peanut butter, tries to copy Calvé (a popular premium-brand peanut butter). People who shop in a whole food store are more willing (than supermarket shoppers) to adjust their preferences to organic food.” (NL.H)*

*“The organic peanut butter (a brand that is carried by whole food stores) has always an oily film on top. That’s because the peanuts are processed in another way than in the regular peanut butter. You just have to stir it before using it. That’s all. I prefer the different taste. I resist those tastes of premium-brands that the food industry tries to force upon me.” (NL.H)*

The difference in taste was also related to the **health** aspect. Organic food was perceived as healthier (PL.L, DE.H) due to “more ingredients” (DE.L) than in conventional food and therefore was expected to taste different. (PL.L)

*“I think if it is healthy it must have another taste because it doesn’t have all these substances like conventional. Healthy food must have another taste.” (PL.L)*

*“Yes, it should taste different, and then I believe that it’s better. I believe that if it tastes better, there are more ingredients. That’s healthier too.” (DE.H)*

Organic products were expected to taste different as they are more expensive (PL.L) and can therefore **justify a higher price** (DE.L).



*“If they taste similar, I would buy the cheaper pudding. I then think of my purse. If they differ in taste, I would rather pay more.” (DE.L)*

*“If I pay more for organic food I expect it to be different, to have different taste. (PL.L)*

(ii) However, participants were not generally convinced about the different taste of organic food. Despite taste not being a prior buying motive (see chapter 6.3.3), regarding some products (e.g. tomatoes CH.H) consumers are **convinced that organic products taste better** than conventional products (NL, PL.H, CH.H). However, in cases where they did not know or were not sure if organic products taste better, consumers reported that they **hoped and assumed that organic food tastes better** (NL, CH.H).

*“Yes, [...] it is a political decision that we mainly buy organic products because of the production conditions etc, working conditions and not due to taste. We hope and assume that they [organic products] taste better.” (CH.H)*

Two different streams of thought could be identified and are depicted in the following section. For one, the **taste of organic food is not to enhance** and for the others, organic food presents **flaws, but they are willing to adjust and adapt themselves**.

Polish light users were sceptical about any modification of taste and they underlined their satisfaction from what they experience while eating organic food. They appreciate taste and the different properties of organic food claiming that **organic food is superior**.

*“We reached the taste that we prefer the most. We came to the conclusion it is the real taste and [...] we should still try to improve it? So we could get a product of a higher quality and we already have the best one.” (PL.L)*

Polish and Swiss heavy users showed in this regard a different opinion. They were dissatisfied with certain sensory properties of organic products. However, they accept certain flaws in organic quality and argued that **taste is to be learnt**. Some participants stated that they would rather prefer **adapting themselves to the taste of organic products** (CH.H, NL, PL.H), than expect a modification in the taste of organic food (PL.H).

*“I ordered once an organic chicken and I wanted the chicken not to be so expensive so I asked for the small size chicken. When I picked it up I noticed it has such an intense smell. It was a different smell. When I cooked the chicken, it was really hard and did not smell well. I could see it was a chicken that lived outdoor and I am used to such hormone-chickens, the disgusting ones. I mean the poor ones [...] soft ones. But it doesn't mean I would like to change something [...] I would like to change myself.” (PL.H)*

*“It (organic product) has to taste a little bit different [another CH.H agrees], but the taste maybe does not appeal to me, after a couple of times the organic product is much better, maybe because I got used to it.” (CH.H)*

*“Consuming organic food requires accepting different tastes, typical for a given product. One can say that organic food is for people who accepted such a lifestyle, for connoisseurs and conventional food is for people not searching for any deeper sensations. We eat because we have to eat, we eat in a rush and not with an atmosphere of celebration or anything special, it is without any deeper emotional feeling.” (PL.H)*

*“Organic rice has specific taste, specific consistency and you have to get used to it and accept it [...]” (PL.H)*

*“[...] flavours which we were not familiar with. We notice that now we eat organic food, we change our appreciation. We prefer food in different ways. It’s in another way tastier.” (NL.H)*

French and Swiss heavy users seemed to be **more tolerant to different (typical organic) taste components** and did not want to buy conventional products instead of organic.

*“For me it doesn’t matter [...] well I know how conventional pasta is and this I love more than anything, but when I have now organic products, [...] it tastes different, just floury, that’s true, but I don’t have a problem with that.” (CH.H)*

*“The organic Colza oil I buy in my local organic specialty shop isn’t perfect yet, but I don’t want to go to a regular supermarket just to get a little bottle of Colza oil. So I guess I’ll stick to the organic one for now, I bet they’ll come up with something a lot better.” (FR.H)*

Therefore, **raising one’s consciousness** for the differences in sensory attributes of organic food (PL.H) was considered as an important factor in accepting perceived differences.

*“[...] we can research how to improve organic food, to make it more acceptable but I do not know if you can improve organic food. Is it more about raising consciousness of the whole society because we all act on the level of consciousness!” (PL.H)*

In this regard, it is especially challenging to convince children (DE.L) and young people (PL.H.) to accept different sensory attributes. These peer groups do not represent such strong norms (PL.H) to accept the different taste (DE.L, PL.H.) and appearance (DE.L) that organic food may have.

*“[...] such vanilla quark or such quark for kids and young people, they like it. It is with added sugar. If I make such a quark from natural cheese, which is even two times more expensive, they do not want to eat it. They claim they like the other much more.” (PL.H)*

Another aspect mentioned was the influence of **eating habits on sensory evaluation** as mentioned in chapter 6.3.1. In the case of the Netherlands there were also light users that were open minded to adapt themselves and to appreciate the special sensory attributes of organic products, however, they were limited by their financial means to regularly purchase organic products. Generally, Dutch participants seemed to have different histories and priorities in applying motivations for buying organic products. The respondents who had started to buy organic products because of environmental friendliness, animal friendliness and / or health had **discovered that organic food tastes better**. Typically these respondents reported that one **has to learn or to adapt to the flavours of organic products in order to appreciate them**. For these respondents, sensory appreciation seems to be inherent in adhering to certain ideas. They might be heavy users, but there are also light users who share this appreciation but who don’t have the financial means to purchase organic products frequently.

One explanation for the tolerance of different sensory attributes of organic food is the fact that **non-sensory-factors** are of greater importance and that they are valued beyond taste sensations (see chapter 6.3.3).

## **APPEARANCE & TEXTURE**

As already mentioned, compared to the discussion about issues regarding taste, the appearance and texture of organic food compared to conventional was seen to be of minor importance. However, as the taste of organic products was desired to be

“natural”, the **shape** also should not only differ from conventional products, but was even expected to differ among organic products (IT.L).

*“[...] the shape of organic food does not have to be standard. It has to be natural and each food must have different shapes, because it has to depend on the nature.” (IT.L)*

In the context of appearance of organic products, German light users mentioned that the **colour** of organic products differs in some cases from equivalent conventional ones. For example, organic sausages turn green and grey when stored over longer periods. For Italian light users, organic food should have a strong ‘personality’ while **sensory attributes should be maintained persistent** and constant **during the shelf life**. A change in appearance can result in children having an aversion to eating it, as children are used to the colours of conventional products. (DE.L)

*“And a lot of conventional products include colorants children react positively to. They see the bright colours, maybe because of that missing colourfulness from similar organic products. There’s definitely a difference in this visual appeal. And there should be.” (DE.L)*

This statement was underlined by the example of Vanilla pudding. One participant supported the difference in the colouring between organic and conventional products and referred to the need of raising children’s’ consciousness, as mentioned above. (DE.L)

Some German light users preferred organic bread on the basis of its **consistency**. They described it as firmer, more filling, and more substantial. The bread rolls were lighter and softer but moister.

Participants indicated that organic food should be more characteristic than conventional products in terms of **texture** (IT.L).

A certain appearance was not only desired regarding the products themselves, but also concerning the way the **products are presented at the point of sale**. Italian light users and French participants noticed differences in this regard, where especially Italian light users noticed differences in the presentation of the products depending on the **type of retail**. Some participants preferred to purchase in specialised organic food stores, where organic food was presented in the way participants are reminded of the “naturalness” and “simplicity” of food. Other participants preferred to buy organic products in retail stores, where organic food is more presented as conventional food. (IT.L)

*“[...] presented with small quantities of soil [...] it is dirty [...] I prefer such shops rather than big retailers, as Conad, where organic products are clean, better packaged [...] well presented as conventional food.” (IT.L)*

*“[...] instead, I would not like the organic food dirty with soil. I do not want it!” (IT.L)*

In France, heavy and light users are of differing opinions on this matter. While light users expect organic food to be non-calibrated and with a sometimes raw-like look (e.g. with dirt) as if it had been freshly picked from a farm, heavy users think the opposite. For heavy users, organic products do not have to be always deformed and misshaped. For some of them this “freshly picked look” with dirt is unnecessary and perhaps makes **organic products look almost ‘fake’**.

*“Having non standardized products is normal.” (FR.H)*

*“Nowadays they don’t rinse the vegetables anymore, they leave the dirt on it to give it a more authentic look and they make you pay more for that. I don’t feel that organic products have to have soil on them to be authentic and natural.” (FR.H)*

In conclusion, on the mentioned differences in appearance, from comments made by German light users it can be concluded that they do not assume and expect a perfect appearance of organic products. Organic vegetables and fruit should generally be small, as this is connected with a more intense taste.

*“You can anticipate the taste that you’d like to have. But perhaps it’s got lost in the size of the fruit, because the taste isn’t sufficient for a large fruit, it might only be conceived for a small fruit.” (DE.L)*

## ODOUR

Some participants commented on the odour of organic food differing from conventional. Italian light users expected organic food to be more characteristic in terms of **smell**. As an example, German light users reported on the superior smell of organic bread and eggs.

*“I enjoy the smell of bread so much. You cut it open, I rarely buy a whole loaf, usually a half or a quarter. I always smell it, I love doing that. I don’t know why, it smells like life, like freshness, I don’t know, like grain, perhaps also a few spices in it.” (DE.L)*

*“When you cook organic eggs and then cut them open, they smell good. We wanted to treat ourselves recently and had breakfast at Cron & Lanz. I opened my hard-boiled egg and it smelled of fish, like fishmeal.” (DE.H)*

### 6.4.4 Sensory attributes of organic food should be similar compared to conventional

Different sensory attributes between organic and conventional products were not always desired by the participants. Reasons given described especially the **taste** and the **appearance** and **texture** of conventional products as more valuable.

## TASTE

Some Swiss consumers, and especially those who do not believe that organic food is **healthier**, recommended that organic food should **not taste different** compared to conventional food. **Variations in taste are undesired.**

*“If organic or not organic, it does not make any differences. If I want tasty cheese, than I want just tasty cheese and then I don’t check whether it is organic or not (CH.L.) [another CH.L agrees].”*

One heavy user in Italy stressed that organic food ought to imitate conventional products. According to this participant, the consumer **needs time to adapt to the new taste** especially when a new **product is launched**.

*“[...] at the beginning, a new organic product should be similar to conventional product, because the consumer has to be accustomed to the new product. So, if it will be different from conventional products, consumers may not recognize it and may refuse it.” (IT.H)*

Concerning fruit and vegetables, one German light user assumed that more people would buy organic products if they **tasted more similar** to conventional products, meaning that organic products should not differ that much from the most common conventional standard flavour.

Some Dutch participants referred to a desired adaption of conventional taste to organic produce (e.g. pasta sauce), but doubted the feasibility.

*“I always buy Bertolli pasta sauces, they are not organic but very tasty. I would expect an organic pasta sauce to taste at least as good as those Bertolli sauces, but I think you cannot really improve on the Bertolli flavour.” (N.L.L)*

Two main groups that are expected to taste similar to conventional products were depicted by the participants, “products that contain starch” and “semi-luxury products”.

### “Products that contain starch”

For Swiss heavy users, processed products that contain starch (e.g. pasta, rice, polenta) were expected not to be different from their respective conventional products. According to the consumers, this type of food serves as a basic component of a meal and therefore should **not have a “strong innate taste”** (e.g. such as whole grain pasta have) (CH).

*“[...] amylaceous products, regardless if these are pasta, rice, polenta, for me these products have much less characteristic taste compared to meat or vegetable. Therefore I’ve got the feeling that amylaceous products should rather correspond more to the conventional ones than vegetable, meat or milk products. [...] Pasta is for me a side dish. And the other things have to be tasty for me. (CH.H) [approval by another CH.H].*

Participants furthermore commented on desired differences in the appearance of “products that contain starch” as mentioned below.

### “Semi-luxury food”

The specific taste of “semi-luxury food” (e.g. tea, chocolate, crisps, wine) and the **joy of eating** such products is considered to be of **higher importance** than the production and processing method (organic / conventional) (CH). It was reported that conventional products of this category **taste better** than organic ones (DE.H, IT.L, PL.H, CH) or at least similar (CH). Polish participants referred in this regard to several conventional products of **sweets, candies or desserts**. Consumers recommended that organic semi-luxury food should imitate the sensory attributes of the conventional benchmark (CH, PL.H, DE.H) in order to be preferred (DE.H). They were unable though to describe which dimension of taste is responsible for their preference for these products (PL.H).

Some consumers (DE.H, IT.L) further noted that for certain conventional brands of product there are no organic equivalents on offer, or that no comparison with organic products can be made. One participant spoke in support of certain conventional products which organic should adapt such as the conventional nut-nougat cream “Nutella”, where comparable organic products did not have the same sweetness and the nutty taste. The key words “**familiarity**” and “**habit**” were used in this context as reasons for the preference for Nutella. “Kellogg’s” (cornflakes) was also introduced as a conventional product that is so strongly favoured for its sensory properties that it cannot be compared with a similar organic product. These conventional brands are first and foremost preferred because of their familiar taste which seems to be the most important aspect.

Italian light users requested in this regard organic wine to have a similar taste as conventional. However, consumers reported that organic semi-luxury food was below their expectations and they consequently preferred conventional products (CH).

(CH.H): [...] there are organic corn crisps, which are also tasty. However, if we really want to enjoy eating chips in front of a DVD, there is still no good organic alternative. [...].

(Moderator): But would you prefer organic crisps, which are exactly the same?

(CH.H): Yes, again that is just the reason why we don't buy them in organic, just because we want good taste. When eating crisps, we go for taste, which is so salty, greasy, unhealthy [...].

(Moderator): But if this would exist in organic quality?

(CH.H): If available in organic quality, yes of course!

So far the statements discussed desired similarities between organic and conventional food. Generally, participants commented on food, where the **conventional alternative is preferred**, without commenting if organic food should be adjusted to the specific conventional characteristics.

German and Dutch participants referred in this regard especially to meat and sausage products. They **prefer the conventional alternative** as in the case of meat, it “does not taste so much like an animal” (DE), it had a “strong animal taste” (NL) and in the case of sausages “the flavouring is better” (DE). As mentioned in the previous chapter 6.4.3, children dislike certain characteristics of organic food (e.g. colouring). As a consequence, one participant preferred conventional products when cooking for children.

*“One definitive factor for us is that my children dislike organic sausage because due to the lack of curing salt it goes green or brown very quickly.” (DE.L)*

Thus, conventional products are preferred in specific situations.

Polish heavy users claimed to **prefer tastes of conventional** hard cheeses and dairy products since the assortment and **availability of organic** hard cheeses and certain dairy products is still limited (see chapter 6.4.2). Regarding the availability, German heavy users remarked on a wider selection of conventional chocolate. Therefore, the **variety in taste** was much **larger**. Other reasons for buying conventional chocolate and ice-cream was the **creamier texture** (DE.H) and the **high price of organic chocolate**. Furthermore, certain products such as conventional beer (taste of hop and cider, DE.H) or Gummy-bears (too hard or sometimes not fruity, DE.H) were preferred in conventional quality. Polish light and heavy users considered **processed conventional products** as pizza and readymade sauces, mayonnaise, ketchup, mustard, etc. as **better**.

## APPEARANCE & TEXTURE

Regarding “products that contain starch”, German light users stated that organic bread and rolls are too variable. Especially organic bread rolls should more **resemble their conventional counterparts in terms of appearance** as they are perceived as too “slack” and “pale”.

Regarding the appearance and texture, participants commented on **products that are preferred in conventional quality** without commenting if organic products should adjust to the conventional in appearance and texture.

As above, German light users commented on the **texture** of conventional bread. In contrast to participants who appreciated organic bread as it was “firmer” and “more filling” (chapter 6.4.3), these attributes were not generally preferred. Participants especially perceived the “fluffiness” of conventional bread as positive. In their opinion,

organic bread in comparison was “too firm and hard” and as one participant mentioned “too difficult to digest”.

Light users commented on the preference regarding conventional food in terms of **processing technique** (PL.L) or **ingredients** (PL.L, DE.L). They were sceptical about the taste properties of **wholesome cereal products** (e.g. macaroni (PL.L), bread DE.L) that **differ** in terms of **colour, texture and consistency** (PL.L).

*“I am used to “white” macaroni and I do not like the wholemeal one.” (PL.L)*

The preference of organic or conventional products was also shaped by very specific aspects of sensory properties like **consistency** that have an impact on culinary utility (PL.H). Comments made mentioned the preference for conventional goat’s milk (PL.H).

*“I prefer conventional goat milk because when I buy organic one, the non-pasteurised one changes the consistency while cooking. That’s why I buy non organic goat milk.” (PL.H)*

## 6.5 Adaption of organic regulations

As mentioned, participants do not want organic food to be standardised, it should differ from conventional food (DE, FR.L, IT, PL, CH). However, only Polish and Swiss participants commented whether if they would prefer organic regulations to be adapted in order to make organic products most similar in their sensory properties to conventional food. There was a wide consensus among the consumers that **organic regulations should not be changed or relaxed**. Polish consumers argued that organic food gives them so many experiences of a **higher sensory level** that they do not anticipate any change. The idea itself seems irritating to some, though participants often argued they did not have any expectation related to standardisation of organic food. However, it must be stressed that it was not possible to talk with Polish participants about the organic regulation in a direct way. This was due to the fact that many of the Polish consumers are unaware about the existence of organic regulations and their potential impact on food properties.

Swiss participants connected standardisation of regulation with the potential authorisation of use of new additives. They were concerned that new additives are **in favour to adapt sensory properties of organic food** to conventional standards. If such additives were to be allowed in organic processing, consumers would not be willing to pay a higher price for such products. The special organic quality would no longer be clearly defined.

*“[...] When consumers pay more, they expect simply better [...]. Regulations should restrict additives and everything. I don’t know enough about it, but I can imagine that in conventional products, additives are probably used.” (CH.L)*

Consequently, the consumers would rather not buy a certain product at all, if the organic alternative would not meet their expectations in sensory properties. Others would rather substitute the organic alternative with a conventional product that fulfils the expected sensory properties. One participant suggested changing and adapting the sensory perceptions rather than changing the organic regulations and the restrictive list of additives permitted. (CH)

The comments so far have focused on the question whether organic regulations should be adapted, in the course of future actions. However, one German light user critically noticed a change in organic product quality. The **taste of organic products has declined since the EC organic regulation** has been implemented. As for other

German light users, a difference in sensory properties among organic labels was noticed, as mentioned in chapter 6.4.3.

## 6.6 Consumers' perceptions on sensory food marketing

Participants in the focus groups were asked to express their experiences and expectations concerning sensory marketing. In this regard, participants **faced difficulties in giving related answers** (FR, DE, IT, PL, CH). Participants mainly referred to expectations of sensory information, rather than to experiences. Generally, participants tended to reflect on various claims found on a food package label. They had difficulties in recalling circumstances in which they were confronted with information on sensory properties and / or any marketing efforts (PL). This might have been a consequence of unclear questioning, but also due to the fact that **other information** (e.g. ingredients, country of origin, storage conditions) is **more important for consumers** (FR, CH). As a matter of fact, participants declared information as **nutrient, sugar and trans-fatty acid content** (DE), list of **ingredients** (IT.L, PL, CH), **preservatives** (IT), hormonal **additives** (CH), **origin** of the product (FR, PL) to be of greater relevance when buying food (DE, PL, CH).

*“When I see a wonderful steak and think of buying it, I would refuse to purchase it, if there is somewhere a note on it which is written „made in the US, may contain hormonal additives“, I don't buy it, because I have the information.” (CH.H)*

*“Well sweetness is subjective anyway. I find it difficult to describe whether something is sweet or not. I would rather see the priority list in the ingredients which are used, because one can still make it more or less sweet.” (CH.H)*

*“[...] if I have to choose a food product, it would be important to know if it contains non-natural additives. I would like that on the label all the additives (natural and not) added are reported. Thus, I can compare natural with non-natural food products.” (IT.L)*

*“[...] for me the use of preservatives is very important in the food choice!” (IT.L)*

Dutch participants recalled their experiences and expectations with conventional wine labelling, since it was the only sensory labelling system the participants were familiar with. The market leader in the Netherlands provides a limited number of colour codes: consumers can use these codes in selecting wine on the basis of the wine's sensory characteristics. In the Dutch group discussions, the moderator referred to this system. Answers given therefore alluded to this system and its applicability for marketing organic products. (NL)

This chapter is divided into three subchapters. Chapter 6.6.1 takes a general view on participants' experiences with sensory information about specific organic products. In the following chapter, the experiences and expectations of participants who approved (chapter 6.6.2) and disapproved (chapter 6.6.3) sensory marketing are discussed.



### 6.6.1 Experiences with product specific sensory marketing

Participants reported on their experiences with **product specific sensory information** (DE, CH), though, Swiss participants only responded after further inquiring and giving examples. Table 11 gives an overview of the mentioned products and the respective information named. The participants mainly referred to their experiences in the sensory attributes of **taste** and **texture**.

**Table 11: Examples of experiences with sensory marketing of organic food**

Organic food	Experiences with sensory marketing
Apples	Information about taste: e.g. sweet and sour (CH.L, DE.L) (attribute: taste) Information about suitability for storing or consumption (DE.L) (attribute: texture associated with taste)
Avocado	Information with link to sensory attributes: e.g. “ripe for consumption” label on product (CH.H) (attribute: taste)
Cheese	Information about processing method which has an influence on sensory attributes and ripening stage: e.g. “raw / pasteurised milk” (processing factor associated with taste of the product) (CH.L)
Cucumber	Information about mouth feeling “crisp” (CH.H) (attribute: mouth feeling)
Grapes	Information about taste and sensory attributes: e.g. sweet and seedless (DE.L) (attribute: taste and texture)
Pepper	Information about taste level: e.g. “heat level” (CH.H) (attribute: taste)
Pineapple	Description with link to sensory attributes “extra sweet” (CH.H) (attribute: taste)
Potato	Information about cooking attribute (CH.L), floury and firm (DE.L, DE.H) (attribute: taste and texture)
Sauces	Information about “heat level”: hot, spicy and mild (DE.H) (attribute: taste)
Wine	Information about specific taste and use (CH.L), dry or flowery (DE.H, DE.H) (attribute: taste)

### 6.6.2 Consumers that appreciated sensory marketing

Participants’ perception and valuation of the sensory information as presented in Table 11 was diverse. The following depicts the (i) **reasons for a possible utility** of sensory marketing, (ii) what **sensory information should address** and (iii) how it **should look**.

(i) Participants referred to several reasons why in their opinion sensory information is, or might be, useful. Sensory information has the potential to call attention to a product, which participants would not have bought otherwise (CH). Sensory information can therefore be helpful for people who are buying organic **products for the first time** (DE). When choosing from a large offer, the information can support the buying decision (NL), it can help to **choose the “right” product** (PL.L, CH), that fulfils their **personal requirements** on specific product qualities (CH).

*“When I see several products on the shelf, the sensory information could guide me to choose a sweeter product or spicier one, whatever I need. Such information can be useful.” (PL.L)*

*“I like to have various tastes in one dish in balanced / equal share. When I buy rice I know it is more sweet and I compose other ingredients [...] I did not know the sweet rice and if there was no recommendation from the sale staff I would not have bought it. In this case sensory information could support my choice.” (PL.H)*

*“These avocados, which are packed, there is written on it „ready to eat“. There are so many diverse products which are labelled alike; therefore this convinces me to buy them. If there is written on a pineapple „extra-sweet“, then I would rather buy it. I have the feeling that I would not buy these products without any taste information. And therefore I appreciate this information.” (CH.H)*

*“Yes, for example with potatoes, soft cooking or hard cooking. Yes in that I’m very interested, that I get the right ones.” (CH.L)*

Therefore, sensory information can indicate **differences between products** (PL.L). Two examples were given to underline the utility of such information: when a store offers ten different kinds of apples (NL) and when products in the existing organic assortment are of foreign origin and as a result they are unknown and expensive.

However, participants underlined that they would **prefer to verify sensory properties themselves**. (PL.H)

*“Such sensory information could be supportive but I would like to verify the taste myself.” (PL.H)*

In this regard, one Dutch participant argued for the advantages of educating people on sensory qualities. She supposed that there are consumers who think that the reason one buys organic products is environmental consciousness, and that these buyers disregard sensory qualities. Those consumers could be made aware of the fact that organic products have different sensory qualities compared to conventional ones.

(ii) Sensory information should address different issues. Participants appreciated information about **processing techniques**. In particular, they would like to be **informed about the absence of additives or preservatives** (e.g. no use of sodium glutamate). This would furthermore make them aware of a possible modification of sensory characteristics over time (IT) and would therefore make them accept sensory differences (CH) as for example “natural way of drying prevents losing consistency” (PL.H).

*“[...] to report on the label the sentence ‘The product will modify its smell and aroma over time’ would increase my trust in the organic food.” (IT.L)*

There was a wide consensus among Swiss participants that sensory informing about certain ways of how **to process or consume** a product e.g. cooking characteristics of potatoes or apples, eating conditions of avocados, is highly relevant for consumers. Polish heavy users appreciated the presence of sensory information because it could help them to **use the product in the right way**. Therefore, sensory information that refers to the composition of flavour and taste is most helpful when preparing meals (PL.H).

*“Not every apple fits with every meal. In fact I want to know what kind of apple it is and which attributes the apple has. In the store, this information is often missing.” (CH.L)*

(iii) Italian participants expressed particular preferences and expectations towards sensory information that should be reported on the label (e.g. indication of the levels of acidity, types of odours). In addition, it appears that **colours, images, symbols, keywords, sound / noises, the material of the label** could be associated with certain sensory attributes and may increase the **probability of purchase**. Participants therefore mainly focused on **suggestions** and possible ways of **how to increase consumer trust through specific information on labels**.

The colour of a label was considered as a valuable sensory attribute (IT). In the participants' opinion, **the colour could help to associate certain food qualities**.

*"[...] in my opinion the colour of the label is very important. A colour could be, for instance, associated with a particular odour. For example, a warm colour, such as orange, gives me the idea that a product has a high quality and that it is organic! On the other hand, cold colours, such as for instance pale blue or green, may suggest the presence of additives or preservatives in the food." (IT.L)*

Italian participants underlined the importance of **symbols and images** of nature or people represented on packaging labels, which would improve the trust of organic food.

*"[...] a picture of a grass lawn where adults and kids are walking in between trees, or a dad and a mum with kids who walk in the nature or a mum with her kid harvesting peaches or apples." (IT.L)*

*"[...] coming back to nature!" (IT.L)*

Italian participants believed that messages **promising certain sensory attributes** may attract consumers.

*"[...] the proof of natural odour. An example of advertising is: 'if you (consumer) purchase this organic product you will discover the true taste of this food.'" (IT.L)*

**Sounds / Noises** of organic agriculture could be used as a marketing instrument at supermarkets. Italian participants believed that this may increase consumer trust.

*"[...] it is important to highlight that organic food is produced by nature. Maybe to reproduce the sounds, for instance, of the soil ploughed by a tractor it could increase the consumer trust." (IT.L)*

Participants also appreciated information that links **ingredients to certain sensory attributes** as flavour, odour, etc. and suggested that sensory information should be very **immediate and simple messaging** (IT).

*"[...] information on the label of a jar of honey such as for instance 'Acacia honey with odour of acacia flowers' or 'Cocoa with inkling of walnut and almond' may attract me to buy this product." (IT.L)*

*"[...] retailers should promote their products in a very immediate and simple way. For instance, 'biscuits more crispy and full-flavoured.'" (IT.H)*

These statements show that **subjective and non-subjective marketing information** is appreciated by Italian participants and both styles of information are believed to perhaps enhance consumer trust in organic products.

Swiss participants considered specific sensory information as useful, but **limitations** regarding sensory marketing were mentioned. Sensory information on the packages was only read at home, after purchase. Thus, it does not necessarily influence the buying decision but could have a long-term effect on future buying behaviour.

Consumers, who are more involved in food purchase and preparation, were much more interested in sensory information than those, who were only occasionally responsible for the food purchase and preparation of meals. Therefore, it is challenging to address all consumers with sensory information. (CH)

French participants have different opinions regarding the presentation at the point of sale (see chapter 6.4.3). Looking from a marketing point of view, different opinions were recorded. Retailers sometimes market their products e.g. vegetables, by leaving dirt / soil on. This emphasises a raw, farm image. While light users considered it normal, and believe it gave the organic products a more natural look, heavy users were not fond of such presentation. For heavy users, purposely leaving dirt on organic products was **just a marketing ploy** to be able to sell products with a higher price as if this dirt really was a guarantee of a finer and more natural organic product. The heavy users did not see why organic products shouldn't look just like conventional counterparts as far as presentation goes. There is a clear **mistrust of marketing and the food industry** and of retailers in general. More insight in this matter is depicted in the following paragraphs.

### 6.6.3 Consumers that did not appreciate sensory marketing

The majority of German participants did **not see much point in sensory marketing**, and stated that they found information such as nutritional content more valuable. Participants in the other countries claimed different reasons why sensory marketing is not of use for consumers. French participants were overall very distrustful of any kind of marketing and they usually trust their local providers (farmers, market gardeners, greengrocers) more. However, participants who doubted the relevance of sensory information often had **difficulties to imagine** how **sensory information** would look like on a product (CH).

The most dominant argument of participants who disapproved of sensory marketing was that the information given was highly **subjective** (PL, CH). This subjectivity was discussed in two different ways. On the one hand, sensory information was considered as subjective, as consumers have different preferences and prefer different tastes (PL.H, CH).

*“Somebody likes a certain taste but I might not be in favour of it.” (PL.L)*

*“Different people have different sensory predisposition and one can like something and others can like something else. I must try the product by myself to assess. Such sensory information is not of much relevance.” (PL.H)*

*“I think there should be objective information on the label. Information about taste, smell is so subjective. Everybody can understand it in a very different way.” (PL.L)*

On the other hand, subjective sensory information was disapproved of because information used in marketing and displayed on product labels can be **misinterpreted** and **misleading** (PL). Participants referred in this regard to (i) the **actual information** provided, (ii) the **amount of information**, (iii) the **institution which provides** the information and (iv) the **impact such information** might have on the consumer.

(i) Therefore, typically used sensory information such as “traditionally manufactured”, “according traditional recipe”, “natural” (PL.L) or “better taste” (CH), suggests certain sensory sensations. Especially the key word “natural” was considered to suggest specific properties as little processed or the lack of additives. As participants were

very sceptical towards additives, information on these would negatively affect their food choices (PL.L). Participants therefore questioned the reliability of such information (PL.L, CH) and suggested that the information provided should be objective and reliable (PL).

*“It seems almost a little bit suspect when reading on the package „specially tasty“. It has no influence on me at all, I don’t believe this at all.” (CH.L)*

(ii) Participants argued that there is already **too much information** provided in the supermarkets (NL), respectively on the food packaging (CH). Participants believed that the volume of messages results in higher consumer prices. Therefore, **the more information** on sensory attributes that is provided, **the more expensive** the product is. In this context, information is consequently negatively perceived. (CH)

(iii) As a consequence, Swiss participants feared that sensory information was just a **marketing instrument** that aims to influence their buying behaviour. Especially the **information provided by specific brands was mistrusted**. Consumers considered information provided by the retailer or at the point of sale as more neutral and therefore useful.

*”Regarding apples, there is also written sweet or sour at the shelf. This is something different than if there would be written something commercial on the package.” (CH.L)*

French heavy users consider it as acceptable that organic fruits and vegetables are often smaller, crooked shaped and not standardised (chapter 6.3.2). Yet most participants suspect retailers to purposely use these characteristics to fool consumers and make them think that products are organic or more ‘natural’.

(iv) Generally, Polish heavy users commented that sensory information can indicate certain sensory properties and create many expectations that are not fulfilled since **organic food is not standardised**. The making of real commitments in terms of sensory information is therefore considered as difficult. As a result, consumers might be **disappointed and the image of organic food could be distorted**.

Dutch consumers considered sensory information potentially **patronising**, as if consumers could not decide for themselves how things taste. In their opinion, the best way to assess a product is to taste it.

*[On sensory information] “No, that’s patronising! People themselves should think.”(NL.H) “I agree, people should taste for themselves.” (NL.H)*

Sensory marketing is perceived to create more **distance between consumers and food**. Dutch participants argued that the way food is marketed in our society, consumers are already distanced from the production techniques: consumers do not know where and how vegetables and fruits are cultivated. As consumers do not know where food comes from, and how it is produced, they are **hardly able to judge for themselves the quality of a product**. For instance, one can almost buy year-round strawberries: people hardly know where and how these are grown. People should learn about strawberries and their cultivation, and with this knowledge be able to judge the qualities depending on the season, production location etc.

Consumers doubted whether sensory marketing would have an impact on their buying decision. They argued that **habits** seemed to have a strong influence on consumers’ choices (PL.L, IT). Polish light users were convinced that they make the right choices and that they are not influenced by others (without specifying who to be meant by “others”). Some Italian participants also highly disapproved of sensory

marketing and indicated that promotional information does **not have an influence on their buying decision.**

*“We have our own taste; we choose products we are used to.” (PL.L)*

*“[...] advertisement does not influence me really much! Maybe because I have been vegetarian for ten years. I tried various types of nutrition. I disapprove of all these promotion activities, publicity, marketing [...]. If I really like a product, I buy and taste it! I do not need advertising! I am not attracted by new products.”(IT.L)*

## 7 Discussion & conclusions

This research started out with the hypothesis that sensory perception and evaluation of food – beside other aspects such as health – is crucial when consumers decide whether or not to buy organic products. In answering this hypothesis, different aspects need to be considered.

### 7.1 Importance of consumer's perception

The complexity of the topic - sensory perception of organic food - is reflected by the difficulty of consumers to talk about their experiences and expectations regarding sensory attributes. The questions arising are: (i) do consumers perceive sensory aspects, (ii) how do they perceive them and (iii) what influences govern such perceptions? These questions were not necessarily topics of this research but still need to be considered when discussing sensory properties.

In the focus group discussions, the concept of sensory perception was elaborated by the comparison of organic with conventional food. Regarding these comparisons, consumers showed different concepts of experiences. By trend, heavy users had little experience with conventional food while light users showed little experience with organic food. Though, the case was not that simple. As elaborated by the Dutch case, there exist different patterns, not necessarily distinguished by the frequent versus occasional consumption of organic foods. One pattern is that people buy certain categories of food always in organic quality (usually vegetables and fruit) but no other organic products. Choosing organic or conventional products ad hoc if one picks (and buys) according to which of the options is preferred is another pattern. This is especially the case in supermarkets where both organic and conventional products are available.

The perception of differences between organic and conventional products is not only linked to the frequency of consuming or familiarity with products of both kinds. It also depends on conscious consumption in terms of sensory attributes and on the personal relevance of sensory attributes. However, the topic of sensory sensations did not reveal a constant pattern validated for typically heavy or typically light users or for a certain country. The values and images related to sensory aspects are too diverse. It appears that sensory attributes cannot be singled out from a lot of other factors governing sensory perceptions.

The study suggests that the perception of sensory properties underlies different influences. Eating habits and sensory adaptation have influence in a long-term effect, while time, place, and occasion for when the food is prepared or consumed influences consumers in the short term. Furthermore, origin, production method, plant variety or growing conditions, food package, recipes etc. are factors all influencing this matter. Besides the perception of sensory properties, such factors are directly linked to the negative or positive perception and expectation of sensory properties (e.g. how taste is perceived). Communicating the advantages and properties of organic farming and processing systems is therefore a necessary step to satisfy consumers in their purchasing decision and culinary sensations.

However, in order to perceive differences, consumers need to be familiar with the distinction between conventional and organic food. The perception of sensory aspects specific to organic food was in the case of light users – but also to some

extent by heavy users – hampered by this. They did not clearly distinguish conventional from organic products. Organic was perceived as a special brand or equated with home-grown or products from the market, etc. Such findings correlate with other research carried out (Stolz et al., 2009). Hence, it demonstrates a selective perception of information about organic production and a potential to better inform consumers about organic farming and production processes in connection with the perception of labels.

This research shed light on different patterns of consumer importance attached to sensory aspects. The findings suggests that: (i) consumers do not have experience in comparing similar products, (ii) their cognitive perception of sensory attributes is low, (iii) they do realise sensory differences and judge them mainly positively, (iv) but they are of minor importance for buying decisions, while other factors are more relevant and important to them.

## **7.2 Perception and evaluation of specific sensory properties**

Lehmann (2007) reports on sensory testing focusing on odour, taste, appearance, texture and after-taste. This research is in line with these reported sensory properties except for after-taste, which was not perceived by consumers of this study. When focusing on the importance of sensory properties Lüth et al. (2004), as well as other country specific studies, suggest that taste is most important when judging organic food. Other sensory properties, such as smell and appearance of organic products rarely represent relevant aspects. This research suggests the same findings, as consumers in all countries referred to taste as the most important sensory property, followed by odour. Only in Italy, odour was of the same importance as taste. When talking about experiences and expectations with organic food, a different picture occurred, where odour was less often mentioned, while appearance and texture were most prominent. The importance of sensory properties differs depending on the context. Appearance and odour appear to be the most important sensory attributes when consumers purchase food, while taste and odour are the most important attributes when consumers dine (especially IT). This implies that consumers differ between the perception of sensory attributes and the valuation of such when talking in relation to specific foods.

When focusing on the valuation of taste, a study executed by Kuhnert et al. (2003) on purchase motives suggests that most participants claim organic to taste better than the conventional counterpart. However, studies carried out to assess the differences in taste (Fillion and Arazi, 2002) and other sensory properties (Lehmann, 2007) between conventional and organic products proved that no common claim such as “organic tastes better” could be universally determined. Sensory quality very much depends on the respective product. This discrepancy was also found within this research with perceptions of “organic is superior” to a more differentiated product related observation.

Nevertheless, when judging organic food, taste was mainly evaluated positively by organic consumers. For appearance, texture and odour, a more heterogeneous picture emerged. Texture and odour was less often mentioned but with a tendency to positive evaluation. In contrast, light users more often referred to negative parameters of organic food, especially with processed food such as dairy, meat and bakery products. In this regard, sensory attributes function as quality criteria. The study suggests that sensory attributes cannot be singled out but are rather interlinked. Consumers use such features to evaluate if a product is organic or not.



On the one hand, a lack of standardisation with “less regular appearance” and “less perfect shapes” are criteria for organic quality are to some extent expected and a guarantee for superior taste. On the other hand, consumers are not particularly in favour of such low standardisation but again took it as an indicator for other aspects which they preferred, such as taste (especially NL). Therefore, flaws in the appearance of organic products can be compensated for by their superior taste and smell. Such expectations and experiences are overall linked to fruit and vegetable. These are the most dominant product groups which consumers refer experiences and expectations to. Padel and Foster (2005) argue that organic most often is associated with the product groups of fruit and vegetable and with a healthy diet. As health is a major buying motive for organic produce, this might be an explanation why consumers have more experiences with these product groups than with processed food and / or participants display greater difficulties when judging processed food (especially FR and NL).

A word used to describe the differences between organic and conventional food was “authenticity”. Concerning the attribute taste, in this regard consumers show a strong desire to experience taste as it used to be, a more natural or intense taste. This runs in line with the associations and images organic consumers ascribe to organic food. Such expectations were often linked to childhood memories. Memories seem to be important for the sensory evaluation of food, as they apparently serve as a “personal sensory-quality standard” when taste experiences of childhood or former times are compared with modern day sensory characteristics of food. Consumers therefore require that organic products should not be standardised and should differ from conventional products in terms of variability and sensory aspects.

### **7.3 Sensory expectations and experiences related to specific product groups**

Authenticity is experienced and expected as a “strong innate taste” of organic unprocessed commodities such as fruits and vegetables, meat, milk. Consumers furthermore expect processed products such as yogurt or biscuits with a “typical organic recipe and taste” to taste differently to their conventional counterparts. Here, consumers are focusing on ingredients of processed food and link them to higher sensory expectations. Organic food contains lower levels of certain “unpleasant” ingredients such as salt and fat and is enriched through the use of certain ingredients such as wholemeal flour. In this regard, especially the sweetness of processed products is a relevant issue. Consumers for the most parts link the sweetness of organic products to a different type of sweetness or a more pleasant one. Organic is therefore seen as one aspect that makes a product of general higher quality. Therefore, organic products are directly linked to healthier diet, which is a major motive for buying organic food.

As already mentioned, consumers have difficulty in perceiving differences between unprocessed and processed food, however, product groups were identified where organic products are expected to taste and partially to look similar to their conventional counterparts. Consumers expect certain processed foods to be similar because of negative sensory properties of the organic product, e.g. due to the use of whole flour (especially DE). “Products that contain starch” (e.g. pasta, rice, polenta), which mainly serve as a side dish or “semi-luxury food” (e.g. tea, chocolate, crisps, wine, sweets, candy) are mentioned in this regard. Organic food was characterised by consumers by its exceptional taste. That might be the reason why consumers do not appreciate organic products when served as a side dish.

It has to be considered that some consumers commented that special culinary enjoyment is more linked to conventional products (e.g. pasta, crisps, high quality chocolate) and not to organic products. One reason might be that organic is linked to a healthy diet. In contrast, consumers might primarily link semi-luxury food with joy and not with health. Therefore the product does not need to be organic. However, some consumers would substitute a conventional product if the organic offering would taste similar. It seems that in comparing these two categories, the taste of organic products is embedded somewhere in between: in some cases not as good in certain semi-luxury products, but too characteristic to serve as a side dish.

Though certain products are preferred in conventional quality, consumers are of the opinion that the organic regulation should not be relaxed in order to adapt organic to conventional sensory properties (especially PL and CH).

An overview on sensory characteristics consumers ascribe to organic products is provided in Figure 10.

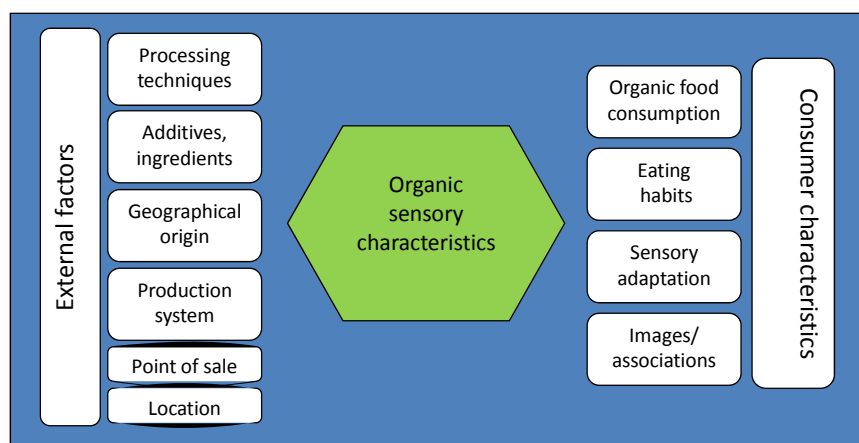


Figure 10: Sensory characteristics of organic food

#### 7.4 Reasons for sensory differences and adaption to sensory attributes

As already mentioned, different factors have influence on the perception of sensory attributes. Consumers are convinced that certain factors influence the quality of organic food and directly link such attributes to positive sensory sensations. Factors mentioned were e.g. the lack of additives, low processing, origin, low levels of unpleasant ingredients, recipes. An aspect prominently discussed (especially FR and NL) was the loss of authentic sensory properties due to conventional farming and processing techniques over time. Consumers therefore appreciate organic products as they represent naturalness, more sensory intensity and individuality. Furthermore, as elaborated in the Dutch case, consumers differentiate between organic quality offered in supermarkets or whole food stores. As a consequence, organic produce purchased in supermarkets is for those preferring sensory sensations close to conventional products but still wanting to enjoy organic quality. In contrast, organic food provided by whole food stores is directly linked with authentic taste and seen to be healthier and to have a positive effect on the environment. Generally, due to the fact that organic is perceived as healthy and more expensive, it is expected to contribute to different taste sensations. As these examples illustrate, certain knowledge and images impact upon a positive evaluation of sensory attributes.

Positive effects on the health and the environment were also found by Millock et al. (2004) as major values influencing the purchase decision in favour of organic food. He discriminates in this regard between use and non-use values. Health, taste and freshness are considered as use values, while environmental and animal welfare attributes count as non-use values. Millock et al. (2004) state that consumers often claim to be influenced by non-use values in their decision to opt for organic food. However, he found that in the real market, use values are the main drivers for purchasing organic products. This corresponds with findings of Zanolli and Naspetti (2002) where pleasure and well-being expressed by health, tasty, easy to use, etc. are the prior buying motives for organic products. This research elaborated similar results, showing taste is an important aspect when buying organic food, but also that generally, sensory attributes of organic products are not the major buying motive for consumers. The motives can therefore be divided into sensory and non-sensory properties, with the second having more impact on the purchase decision. Consumers referred in this respect to organic production and processing methods, the origin of the products and health aspects. Especially heavy users tended to buy organic food because the organic production system meets their personal values on environmentally friendly, animal welfare, fair trade etc. These findings show the importance of the organic farming system and benefits as a total, holistic package. Consumers are focusing not only on the final products but rather consider the product chain in total. The literature underlines these findings in suggesting that this is a process over time and displays the interaction between sensory and non-sensory attributes. A study carried out by Idda et al. (2008) claims that consumers could be made aware to buy organic food by better communicating the taste argument. However, especially light consumers only develop as medium consumers when benefits such as health, environmental awareness and animal welfare become relevant factors for them (Taylor Nelson Sofres, 2004). Therefore, non-sensory attributes are often over valued if sensory attributes are realised but not perceived as superior.

When looking at the interrelation between sensory and non-sensory attributes, two different patterns occurred: some consumer appreciate organic food but have to get used to the organic taste, while others state that the superior taste of organic food was the overall reason why they started buying organic food. That's how some heavy users started to consume organic food as they discovered the better taste, and that's why some light users buy only specific organic foods which they find better tasting (especially NL). However, there are also consumers, and especially heavy users, who do not search for sensory sensations as their actions are governed by mentioned non-sensory attributes such as environmental or animal welfare concerns or they experience personal wellbeing and satisfaction through organic consumption (especially PL.H). Though some would like adaptation in organic sensory properties towards conventional food, such changes would threaten their perception of living a "modern and healthy lifestyle" (especially PL.H). Though organic food presents flaws, consumers are willing to compromise and adapt themselves to the characteristics of organic food.

As a consequence, in answering the organic market entrance hypothesis, taste is a crucial factor for the question whether or not to buy organic products, however diverse patterns could be found, as sensory perceptions, experiences and expectations are themselves governed by multiple factors.

## 7.5 Expectations and implications of sensory properties as a marketing tool

In the context of consumers' experiences and expectations on sensory marketing, the central question of a general usefulness of sensory information arose. The opinions on this issue differed remarkably among the participants in the studied countries; with generally German consumers giving priority to other information. For several consumers in most countries information about e.g. ingredients, preservatives, nutrient content, origin of the product, was considered as more important and having more relevance in their buying decision. However, this needs to be seen in the context that consumers faced difficulties recalling circumstances when confronted with sensory marketing efforts. This might be due to the fact that sensory marketing is hardly deployed as a communication tool.

Consumers who appreciated sensory information referred to the usefulness when deciding between products, when buying a product for the first time or in order to choose the product which fulfils their personal requirements. As mentioned in the study, consumers are often buying the same organic products; marketing information can therefore be a useful tool for consumers who are willing to try new products and expand their experience. Consumers appreciate the sensory sensations of organic produce, from old varieties or varieties that are not common or which are only offered in organic quality. Therefore, consumers can expose themselves to new products and flavours (especially FR). Consumers would most appreciate information about processing techniques, how to process and consume the product the right way. Such information can especially be useful to prevent the potential disappointment of not considering potential differences between organic and conventional food. The study suggests that consumers more involved in food purchase and preparation are more interested in sensory information. Sensory marketing can therefore call attention, highlight differences and support the buying decision.

Building trust and providing trustworthy information is a central issue for consumers. Here, consumers referred to very ambivalent opinions. The ones disapproving of sensory marketing referred to the subjectivity of taste sensations and to the potential for misleading information. Therefore the information provided should be reliable and especially objective. As this study shows, people have a desire to experience natural and authentic organic food, but consumers (especially PL and CH) are very sceptical that such information is provided as a marketing tool. They point to written information or a presentation potentially representing naturalness as e.g. vegetables presented at the point of sale with mud pieces. But such a way of presentation was appreciated by some other consumers. Especially Italian consumers consider e.g. subjective messaging as using symbols, images, sounds, noises, etc. as potential instruments to increase consumer trust. Sensory marketing therefore faces challenges in order to service different expectations and varying preferences.

A marketing tool is only effective when having influence on consumer behaviour. The study suggests that such influences have certain limitations. Consumers often notice information on packages only after the purchase decision and when at home. However, this can have a long-term effect on their buying behaviour. Consumers realise that organic food may vary due to its low level of standardisation. There is a potential disappointment in consumers trusting certain sensory information which may not be fulfilled. However, a flexible system has the potential to adjust to possible variations.

Generally, sensory aspects are a vague concept to describe, with people having problems expressing their experiences and expectations. Building awareness and

training consumers on sensory properties are pre-requisites in efforts to advance the conscious consumption of organic food. Sensory marketing can be a very effective tool in this regard.

Further research needs to be done in order to analyse the importance of sensory aspects for the individual segments of organic food consumers and to develop targeted marketing concepts for each. This will be achieved by a quantitative study which will be conducted within WP 4.3 of this project.

## **7.6 Recommendations for different players**

A focus of this research was on elaborating recommendations in terms of sensory marketing. In the following section, these will be elaborated especially for producers, processors and retailers of organic food. Further aspects and recommendations towards policy makers and researchers are depicted in Table 12.

Although the results of the FG discussions suggest that in many cases sensory attributes of organic products are not the main buying motive for consumers, the analysis gives some evidence regarding the method of communicating sensory aspects of organic food. As already mentioned, the recommendations elaborated by the different countries show some ambivalence:

- **Need to provide diverse information**

The information required should be reliable and objective. The message should be immediate and simple, as consumers fear that when sensory communication strategies are provided, the product gets more expensive.

Consumers appreciate information which defines the characteristics of organic food. Therefore, information about organic production and processing techniques would be most useful. This can be used as distinctive features to define conventional products and support trust in organic food.

As mainly those more involved in food purchase and preparations are interested in sensory properties, marketing tools should especially be adjusted to this consumer group as well as for consumers who are willing to buy new products and search for new taste sensations.

- **Information provided on the packaging**

Correct information reported on the label about nutritional components, sensory attributes, modification during the shelf-life of sensory attributes, how to process and consume the product the right way, about packaging materials, etc. may increase consumer trust and increase the likelihood of purchasing organic food.

Sensory marketing activities should include information written on the label such as particular colours, images, symbols, keywords or sentences, which consumers associate with organic products. The study suggests that consumers associate taste especially with positive images reflecting childhood memories or / and idyllic and romantic ways of peasant agriculture. Furthermore, origin, production and processing techniques, etc. are directly linked to higher sensory perceptions. Such images could be used for sensory marketing. However, such images raise the question of objectivity in sensory marketing.

Consumers appreciate information that links ingredients to certain sensory attributes such as flavour, odour, etc. Studies show that sensory information referring to flavour attributes such as e.g. acidity, sweetness of apples is most appreciated by

consumers. A tool for easy recognition is the allocation of flavour groups to colour codes (Weibel and Leder, 2006). Such a system is already implemented and appreciated in the Netherlands for wine purchases.

- **Tools and information provided at the point of sale**

Some consumers trust more in comparative information over a range of products in a shop (e.g. information about the taste of different apple varieties) than in sensory information on packaging which is negatively perceived as a marketing device with the intention to influence consumers.

Sensory marketing activities should include reproduction of sounds / noises of organic production methods at the point of sale. This may increase consumer trust in organic food.

At the point of sale, consumer should have the possibility to directly link the product to its origin, by providing information regarding production and processing methods through e.g. leaflets.

Sensory marketing should not be limited to written descriptions, but also include degustation and oral information from the sales persons. These two elements are often missing in supermarkets / big retailers. Oral advice by sales persons could also be integrated in the communication strategy of big retailers e.g. by providing sensory information at the level of a cheese or meat counter. Hence, the personal contact and possibility to inform from the perspective of the producer / retailer and to be informed from the perspective of the consumer could be a central tool to enhance trust and build markets and consumption.

**Table 12: Further recommendations elaborated out of WP 4.2.**

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<b>All actors</b>	Support market diversification with authentic organic products and organic products close to conventional sensory attributes such as taste in some cases  Further development of new products in organic quality and use of old varieties or varieties related to different taste sensations as in conventional quality
<b>Retailers</b>	Enhance information provided in terms of marketing activities, as information on the product package or at the point of sale (chapter 7.6)  Support public relation activities on organic production and processing methods
<b>Producer and producer organisations</b>	Enhance information provided in terms of marketing activities, as information on the product package or at the point of sale (chapter 7.6)  Enhance public relations activities on organic production and processing methods
<b>Policy makers</b>	No relaxation of organic EU regulation and private standards  Support public relations activities on organic production and processing methods  Enhance research activities on consumer perception and organic sensory properties tailored to specific consumer segments

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# Appendix

## Appendix 1: Recruitment questionnaire



### Ecropolis WP 4.2: Recruitment questionnaire

Date.....

Name of the interviewer .....

Good morning/afternoon, my name is ... I am working at...on a European consumer study. I would like to invite you to participate in the study. The study deals with taste and appearance of organic food. The participants of the study will be asked to discuss the mentioned issue in a small group of 8 consumers. I guarantee that all data collected during the study are analysed anonymously.

Could I now ask you some preliminary questions, in order to find out if you match the criteria for taking part in the study?

- yes
- no → (thank respondent and close interview)

Are you interested in taste and appearance of food?

- a lot
- a little bit
- not at all → (thank respondent and close interview)

Is one of the following cases true for you: Do you work on a farm / for the food industry / a market research company or in the field of sensory and food?

- yes → (thank respondent and close interview)
- no

How often did you eat organic food in the last two month?

- frequently
- occasionally
- seldom → (thank respondent and close interview)
- never → (thank respondent and close interview)

How do you identify organic products?

ATTENTION NOTE FOR Interviewer: Don't read out possible answers. Multiple answers are possible.

Part A	satisfying	Part B	not satisfying
Organic food label <input type="checkbox"/>		I buy on the market <input type="checkbox"/>	
I buy in <b>organic</b> food shops/farm <input type="checkbox"/>		I buy from farmers <input type="checkbox"/>	
Logo of the certification body <input type="checkbox"/>		I eat garden grown food <input type="checkbox"/>	
Code number/name of the certification body <input type="checkbox"/>		Other <input type="checkbox"/>	

If none of the replies in Part A are mentioned → answers are to be considered :  
not satisfying  → thank respondent and close interview

I am now going to name you different kinds of food. Please tell me, if you consume these products in organic quality

(Interviewer: please mark the respective answers in the fields provided by a cross and repeat the following question for each product group.)

**Do you consume...**(please name the respective product group)?

Product groups	yes	no
Organic tomato products		
Organic apple		
Organic meat products		
Organic bakery products		
Organic dairy products		
Organic oil		

Please check how many products are not consumed. If **more than 3 products** were answered with “no”  → thank respondent and close interview

How old are you? ..... (note age)

If not answered → (thank respondent and close interview)

Which of the two age groups do you belong to: (Just enter)

18-45 years

46-75 years

Gender (just enter!)

female

male

Thank you very much!

(Interviewer: If consumer fulfils criteria recommended, please note down his/her contact information and make an appointment): We would be very pleased if you participated in our study. For taking part in the group discussion, you would get an allowance of xx €. I would now like to make an appointment with you...

Please let me know your name and telephone number, so that I can get back to you if necessary (see next page).

NOTE: if the interview has ended at an earlier point, briefly explain the reason why and thank the person for helping.

Name .....

Email .....

Telephone number .....

Appointment: Date.....Time.....

---

Participant number (Please leave blank)

## Appendix 2: Focus group discussion questionnaire

Name: .....

(Please write legible)

1. How often do you eat these products in organic quality?

	always	often	rare	never	I don't eat it
vegetables					
milk products					
sausages					
bakery products					

2. What gets spontaneously in your mind when you hear the term „organic food“. Please write down your associations or mental pictures:

3. In which occasions (e.g. banquet / everyday meal, eating with children/ friends/colleagues,...) do you prefer to eat organic food?

4. There are different reasons to eat organic food: Are there occasions when you prefer organic food especially because of its sensory qualities (odor, taste, mouth feeling, after taste, appearance;)? Please describe why.

Appendix 3: Focus group discussion questionnaire (section 4)

Name: .....

I like to eat these products in <b>organic</b> quality	
Products	Sensory attributes

I prefer to eat these products in <b>conventional</b> quality	
Products	Sensory attributes



## Appendix 4: Discussion Guideline

### Instructions for use of this guideline

This guideline should be used by the moderator to conduct the focus group (FG) discussions. Every FG discussion is divided in seven sections:

### Summary of the sections

1. Questionnaire (when the participants arrive, before the beginning of the group discussion)
2. Introduction
3. Warming-up
4. Associations related to sensory characteristics of organic food
5. Expectancy to sensory properties of organic food related to standardisation/variability
6. Expectancy to marketing of sensory aspects of organic food
7. Final
- 8.

Each section consists of the following elements and has the same layout as shown in the box below:

Nr. Heading of section, (duration)                      End time

Some further explanations about the section

**Key questions:** This are the main question we want you to ask in any case.

Our suggestions for:

“Text to be read out by the moderator”,

Questions and ideas for follow up and further probing

(Texts and further questions are suggestions only, and have only to be used if they are suitable in the discussion flow)

**INSTRUCTIONS FOR THE MODERATOR WHAT TO DO AND WHAT TO LOOK OUT FOR**

Objectives of this section:

In the box there is a summary of the objectives (for each section)

1. Questionnaire (when the participants arrive, before the beginning of the group discussion)

Welcome the participants, Ask them to fill in the initial questionnaire

2. Introduction (15 minutes, End 0:15)

Introduction of moderator, institution, research project 'Ecropolis' (printed information should be distributed after discussion)

Introduction of note-taking, audio and video taping

Assure protection of privacy

Explanation of discussion outline and 'rules': no right or wrong answers, extensive collection of data/all opinions are allowed;

Explain that the participants are expected to discuss the questions among themselves. The moderator will only ask some main questions, and keep the discussion on the subject.

Introduction of respondents

"Thank you for taking time to attend this discussion. The purpose of the meeting is to discuss your experiences related to sensory properties of organic food. This means how you evaluate taste, appearance, colour, texture, sound, smell etc of organic products. This is part of an European funded research project. If you would like to know more about the project, we can tell you more about it afterwards.

My name is ... and I will be moderating the discussion. This is .... who will be assisting.

My role as a moderator is to facilitate the discussion and direct it, when necessary, to address certain questions. However, I shall not be participating in the discussion. It is our aim to get to your views and for this it is important that every one has a chance to speak, there is no "right" opinion.

Before we start, I wanted to give a short outline of what we are going to do.

After a short round of introduction, we would like you to discuss your experiences with organic food and sensory properties of organic food. Sometimes, I will ask you to reflect on certain questions individually before discussing them in the group.

As you see, we will be recording the session. This helps me to concentrate on what you say rather than taking notes. Although we have asked you for your name and some details about you and your background, I can assure you that this is only to help us in the analysis process, but that your confidentiality will be fully protected."

*Key question: "I would like to begin with a short round of introduction, with your name and your position. Could you also let us know what does eating mean for you".*

GO AROUND THE TABLE OR USE SNOW BALLING (EACH PERSON FINISHING INVITES SOMEBODY ELSE TO TALK). PROMPT EACH PERSON DIRECTLY AND TAKE SHORT NOTES TO FORM A “MENTAL” PICTURE

Objectives of this section:

Participants get familiar with setting and context and know what to expect

Moderator gets to know participants and gets some basic information about their background;

3. Warming-up (10 minutes, End 0:25)

“Now, we start with the first question.”

*Key question: “Which senses are important for you when eating”*

YOU CAN PINUP CARDS WITH THE DIFFERENT SENSESATIONS ON A PINBOARD (APPERANCE, ODOR, TASTE, MOUTHFEELING, AFTERTASTE) IN ORDER TO HELP THEM REMEMBER DIFFERENT SENSATIONS (AND NOT TASTE ONLY)

Objectives of this section:

Icebreaker, barriers are reduced and a friendly atmosphere is created

Associations related to sensory characteristics of organic food (45 min), End 1:10

“Now, I would like to move to your sensory experiences with organic food.”

*Key questions: “ When eating organic food, did you perceive sensory differences to conventional food? Before we discuss this question in the group, we would like you to try to remember your experiences individually. Please take a moment to write down some products where you prefer the organic products and some products where you prefer the conventional ones for their sensory properties. Please write down the products and the related sensory properties.”*

USE THE QUESTION TEMPLATE

If it is difficult for some participants to answer the question – e.g because heavy users consume organic products mainly and do not compare them to conventional ones - they should be encouraged to describe products they like and they do not like (without direct comparison with conventional products).

THE MODERATOR CAN ACTIVATE THE PARTICIPANTS ASSOCIATIONS WITH THE FOLLOWING WORDS:

“Imagine that you are looking at the product, what do you see, what attracts you (or not)? How does it smell? When you eat it, how does it taste? Please write down all your associations! How is the texture when you take the product in your hands? How is the texture when you take it into the mouth? Is there a special sound you like? Do you have certain associations, images related to these sensory perceptions?”

AFTER THE ASSOCIATION EXERCISE ASK THE PARTICIPANTS TO SHARE THEIR EXPERIENCE IN THE GROUP. IT IS NOT INTENDED THAT PARTICIPANTS PRESENT WHAT THEY HAVE WRITTEN DOWN ONE AFTER THE OTHER BUT THEY SHOULD START TO DISCUSS IT.

pay attention to products, related sensory Properties and more symbolic associations and images.

POSSIBLE QUESTIONS FOR PROBING (ONLY IF NECESSARY):

“Do you have similar or different associations/experiences than the other participants?”

“Are there other organic products with sensory differences in relation to conventional ones?”

“There are many statements on [taste, appearance...], are there also associations regarding [smell, texture, sound...]

“You mentioned [natural, more intense, less sweet... etc] what do you understand by this?”

In the following we like to deepen the issue of more symbolic associations to the sensory of organic food.

*Key question: “Please take a moment to imagine the sensory of organic food. What kind of images come to your mind? Maybe it reminds you to special experiences of the past. When you had to draw a picture symbolising the sensory of organic food, what would you draw? Are there special people, animals, colours, symbols, sceneries? You may close your eyes for this association exercise.”*

AFTER THE ASSOCIATION EXERCISE ASK THE PARTICIPANTS TO SHARE THEIR EXPERIENCE IN THE GROUP.

IF PARTICIPANTS HAVE NO SPONTANEOUS ASSOCIATIONS, GIVE THEM AN EXAMPLE (BUT NOT RELATED TO ORGANIC). E.G. THE COWBOY ON THE HORSE WITH MARLBORO CIGARETTES.

Objectives of this section:

*Allowing the participants to 'get in touch' with their sensory experiences of organic food.*

*Discussing experienced sensory differences between organic and conventional food*

*Collect products, related sensory properties and find out words that are used to differentiate the taste of organic products among them and from the conventional ones*

*Explore more symbolic associations related to sensory properties of organic food*

Expectancy to sensory properties of organic food related to standardisation/variability (20 min), End 1:30

“Now we have a broad picture on your sensory experiences with organic food. In the following, I like to focus on your expectations.”

*Key question: “Basically, do you expect organic products to taste most similar than conventional products, or different?”*

Further question In case participants express that some organic products should taste Similar than conventional products:

Sometimes organic products [taste, look...] different because certain ingredients are not allowed in organic products (e.g. emulsifiers, flavours). Do you think that organic norms should be adapted in order to make organic products taste most similar to conventional ones?

FURTHER QUESTION IN CASE PARTICIPANTS EXPRESS THAT SOME ORGANIC PRODUCTS SHOULD TASTE DIFFERENT

“Please describe how organic products should taste.”

POSSIBLE QUESTIONS FOR PROBING (ONLY IF NECESSARY):

“Are there products which should taste similar and others which should taste different? Which ones? How should they taste”

“Are there situations where organic products should be similar/different [e.g. when eating with friends, family]

“Should organic products be [less sweet, fat, artificial, salty or more natural, more intense in flavour, ...]?”

“Is this also applies for cookies? For chocolate? For pasta? For convenience products?”

Objectives of this section:

*Understand for which products and in which situations participants prefer variability/standardisation of organic products.*

*Understand why participants prefer standardisation/variability for certain products/in certain situations*

*Approach consumers expectations to specific ‘organic taste’*

Expectancy to marketing of sensory aspects of organic food (10 min), End 1:40

“We have talked quite in detail about a number of issues related to sensory of organic food. Now, I like to learn on your experiences with sensory information”

*Key question: “Do you remind situations where your buying decision was influenced by sensory information and how?”*

POSSIBLE QUESTIONS FOR PROBING (ONLY IF NECESSARY):

“What kind of information would you welcome?”

“Would you welcome explanations why organic products sometimes taste different (e.g. because no artificial flavours can be used)?”

“Would you welcome similar information as provided in case of wine [or other example relevant in the country]”

Objectives of this section:

*Learning on the participants’ experiences with sensory marketing of organic food.*

Final (10 min), End 1:50

“Before we close the discussion, I would like you to give you a final opportunity to add anything you still want to mention”

*Key question: “Is there anything else we should have talked about, that you would like to add? Anything that we should have asked you?”*

LEAVE TIME FOR EACH PERSON TO SAY SOMETHING, MAYBE GO ROUND THE TABLE.

Objectives of this section:

*Give all participants (including the quiet ones) a final opportunity to add aspects that might have been forgotten to ask for and to reflect again on what has been said.*

IN THIS PHASE IT IS POSSIBLE TO PROVIDE SAMPLES OF VANILLA YOGHURT (ARTIFICIAL FLAVOUR VS. NATURAL FLAVOUR). THIS MAY HELP TO GAIN DEEPER INSIGHTS INTO THE CONCEPT OF ‘NATURALITY’. AFTER A BLIND TASTING AND DISCUSSION, THE MODERATOR CAN INFORM THE PARTICIPANTS WHICH ONE WAS THE NATURAL/ARTIFICIAL. THIS WILL PROBABLY ENCOURAGE FURTHER DISCUSSION

Afterwards

Participants can ask questions about the project

If you have any questions about the project you would like to ask us, now is the time  
CHECK IF THE PARTICIPANTS WROTE DOWN THEIR NAMES AND COLLECT THE PAPERS WITH THE NOTES

REIMBURSEMENT

Thanks and Close