

Consumer trends and preferences in the demand for food

T. Bjørndal
J. Fernandez-Polanco
A. Lappo
A. Lem

SNF



SNF

SAMFUNNS- OG NÆRINGSLIVSFORSKNING AS

- er et selskap i NHH-miljøet med oppgave å initiere, organisere og utføre ekstern-finansiert forskning. Norges Handelshøyskole og Stiftelsen SNF er aksjonærer. Virksomheten drives med basis i egen stab og fagmiljøene ved NHH.

SNF er ett av Norges ledende forskningsmiljø innen anvendt økonomisk-administrativ forskning, og har gode samarbeidsrelasjoner til andre forskningsmiljøer i Norge og utlandet. SNF utfører forskning og forskningsbaserte utredninger for sentrale beslutningstakere i privat og offentlig sektor. Forskningen organiseres i programmer og prosjekter av langsiktig og mer kortsiktig karakter. Alle publikasjoner er offentlig tilgjengelig.

SNF

CENTRE FOR APPLIED RESEARCH AT NHH

- is a company within the NHH group. Its objective is to initiate, organize and conduct externally financed research. The company shareholders are the Norwegian School of Economics (NHH) and the SNF Foundation. Research is carried out by SNF's own staff as well as faculty members at NHH.

SNF is one of Norway's leading research environment within applied economic administrative research. It has excellent working relations with other research environments in Norway as well as abroad. SNF conducts research and prepares research-based reports for major decision-makers both in the private and the public sector. Research is organized in programmes and projects on a long-term as well as a short-term basis. All our publications are publicly available.

Working Paper No. 17/14

**CONSUMER TRENDS AND PREFERENCES IN
THE DEMAND FOR FOOD**

by

**T. Bjørndal
J. Fernandez-Polanco
A. Lappo
A. Lem**

SNF Project No. 5228

Competition, cluster and market analyses for the salted cod and dried cod industry

The project is financed by The Research Council of Norway

**Centre for Applied Research at NHH
BERGEN, October 2014**

ISSN 1502-2140

© Materialet er vernet etter åndsverkloven. Uten uttrykkelig samtykke er eksemplarframstilling som utskrift og annen kopiering bare tillatt når det er hjemlet i lov (kopiering til privat bruk, sitat o.l.) eller avtale med Kopinor (www.kopinor.no)
Utnyttelse i strid med lov eller avtale kan medføre erstatnings- og straffeansvar.

Content

1. Background	1
2. Safety and health benefits	2
3. Corporate social responsibility	5
4. Production systems and innovation	6
5. Sustainability.....	9
6. Country and region of origin.....	12
7. Summary and discussion.....	14
References	17

CONSUMER TRENDS AND PREFERENCES IN THE DEMAND FOR FOOD

By

T. Bjørndal, J. Fernandez-Polanco, A. Lappo and A. Lem

Abstract

The objective of this report is to analyse the major tastes and preferences of consumers in food consumption, as well as expected changes in these over time. We identify five important consumer trends and purchase drivers: food safety and health benefits; corporate social responsibility; production systems and innovations; sustainability; and food origin. For each of these trends we will consider relevant actions that are being implemented by governments, non-governmental organisations (NGOs) and the private sector.

1. BACKGROUND

The objective of this report is to analyse the major tastes and preferences of consumers in food consumption, as well as expected changes in these over time, and the impact that consumers have in establishing these trends. We will identify five important consumer trends and purchase drivers: food safety and health benefits; corporate social responsibility; production systems and innovations; sustainability; and food origin. For each of these trends we will consider relevant actions that are being implemented by governments, non-governmental organisations (NGOs) and the private sector. In the final section, we will summarise the findings and discuss their implications for future food demand. Consumers play a powerful role in how retailers and companies market their products and interact with one another.

It is generally accepted that consumers generally care about what they eat, how their food is produced and the impact food production and consumption have on the environment and society. Consumers' concerns about the methods of food production and the conditions under which food are grown have increased in the developed world in the last two decades. This increase in concerns was primarily motivated by the "mad cow" disease crisis in Europe (Hoffman, 2000; Loureiro and McCluskey, 2000; Davidson, Schröder and Bower, 2003). The result has been an increased demand for information about the origin of food and harvest methods used in food production. This kind of information is being used by some segments of concerned consumers as an indicator of product attributes such as technical quality, food safety, environmental and social sustainability.

The way retailers react to these demands for information by consumers will vary significantly across cultures, countries, chains and products. Different factors affect the consumer's decisions to act responsibly (Nayga, 1999; Thøgersen, 2000), including the role of social agents, governmental or otherwise, in consumer information and education (Roheim, 2008), as well as certain conditions and capabilities both on the part of the media and the consumers (Sapp, 2003). The media should be able to understand the topics and communicate them adequately while consumers should be capable of processing and understanding the information provided by the media and other sources.

According to the UK Foresight Report (Government Office for Science, 2011), the change in values and ethical stances of consumers will have a major influence on consumption. As a result, food security and food system governance will be affected. “Examples include issues of national interest and food sovereignty, the acceptability of modern technology (for example, genetic modification, nanotechnology, cloning of livestock, synthetic biology), the importance accorded to particular regulated and highly specified production methods such as organic and related management systems, the value placed on animal welfare, the relative importance of environmental sustainability and biodiversity protection, and issues of equity and fair trade” (UK Foresight Report, p. 16).

Retailers may accept and adopt new trends in food consumption if they perceive them as a way to improve sales and customer satisfaction. However, consumers and retailers differ in the way they select and process information and make decisions about product attributes because they have different attitudes, different buying policies and different goals.

The perception of value depends on the degree to which customers believe that the product will contribute to fulfilling their goals. Creating value for consumers is a very important source of competitive advantage for a retailer. However, retailers have strong beliefs about those aspects of their business demonstrated by past experience as being important for obtaining the goals and profits they are looking for (Skytte & Bove, 2004). From a retailer’s point of view, most food products are substitutes of each other in attracting consumers. Undifferentiated generic foods can be easily replaced by a multiplicity of providers. Among a group of substitute goods, the more popular products are those with the higher probability to be put on sale and promoted by retailers (Hosken & Reiffen, 2004).

The economic criterion of maximising profits will prevail in retailers’ decision making, and it can be a barrier for developing the market for new food products demanded by consumers which may not offer retailers the margins required. However, at the same time that the agrifood system becomes globalised and the retail chains increase their market power, the responsibility for securing food safety and quality standards has been moving from public to private institutions. The rise in private retailer standards and labelling (Codron et al., 2005) has precipitated the rise of third-party certifiers. This trend reflects the growing power of supermarkets in their aim to regulate the global agrifood system, but at the same time the trend in private retailer standards offers opportunities to create and promote responsible practices among producers and consumers (Hatanaka et al., 2005).

This report is organised as follows: safety and health benefits (section two); corporate social responsibility (section three); production systems and innovations (section four); sustainability (section five); country and region of origin (section six); and summary and discussion (section seven).

2. SAFETY AND HEALTH BENEFITS

Deloitte (2012)¹ suggests that healthy eating is a critically important consumer driver, a trend that will have considerable influence over company strategies in coming years. Population increases and demographic changes such as aging as well as rising GDP allow us to assume that this trend will continue to gain importance until 2030. The trend is reinforced by the fact that the

consumer of the future will have a better level of education worldwide and better knowledge about health and healthy eating (Lem, Bjørndal and Lappo, 2014).

The benefits derived from a healthy diet include enhanced health. It can therefore be expected that information on potential health benefits increases the demand for a specific food and consumers' willingness to pay (Marette, Roosen, and Blanchemanche, 2008). However, the effects on buying behaviour from expected health benefits are not uniform across individuals. Consumers' ability to process information and understand health benefits will affect the adoption and consumption of these healthy foods. Consumer perceptions about food risks and benefits arise from social interaction, and are strongly dependent upon the trust in the public and private institutions involved (Sapp, 2003). Individuals have different levels of qualifications, cognitive skills to process information, and personal experiences with the product, which may affect the perception of potential risks or health benefits. Some attributes like taste may dominate the decision to consume a product, but aspects like cost or safety may be more important in deciding how much to consume (Lin and Milon, 1993). Similarly, the effect on buying behaviour may be affected by the level of consumer involvement in personal health care, and is related to other habits. Consumers that are concerned with nutrition and health are more likely to use nutritional labels than those less concerned (Nayga, 1999, 2000). On the other hand, dietary guidelines are difficult to maintain by consumers. They may be receptive and able to process the information related to a healthy diet, but many of them will be unable or unwilling to comply with the diet (Hamilton et al., 2000; Leipämaa-Leskinen, 2007).

Nevertheless, consumer buying behaviour guided by food health benefits is not uniform across countries and individuals. Euromonitor International's annual study (2011)² finds that respondents globally already rank good health as the most important determinant of happiness and that consumers, both in emerging and developed markets, show interest in dieting. The results of the Euromonitor Global youth survey suggest that in the 15 leading youth markets,³ one-third of 16-24 year olds claim to be trying to lose weight and healthy food was found to be popular worldwide, with 56% of global youth buying healthy products. Even though the survey result might reflect only intention toward healthy eating on some occasions, it proves that many consumers recognise the importance of eating healthily.

The main driver of this trend is the concern over the global rise in the proportions of overweight and obese consumers. Obesity increases the risk of a broad range of fatal and non-fatal diseases in developed countries and there is a concern that a similar trend will be seen in developing countries if food consumption increases as a result of anticipated improvements in GDP. According to the World Health Organisation, in 2008, more than 1.4 billion adults, 20 years and older, were overweight.⁴ Greece, United States, Italy, Mexico, New Zealand, Chile and United Kingdom have the highest rates of obese children aged 5-17 where the percentage of obese boys and girls is more than 25% of the whole population. Countries with the highest obesity rates among adults are the United States, Mexico, New Zealand, Chile and Australia where 33.8%, 30%, 26.5%, 25.1%, and 24.6%, respectively, are obese⁵. In most of these countries the consumption of meat is high. Even countries such as China and India that were not concerned by obesity in the past are now battling epidemics of diabetes and obesity.⁶

Along with improvements in GDP per capita, urbanisation contributes to increased concerns about obesity. Changing work habits of urban people demand convenience in food

consumption. According to Deloitte (2012), consumers today demand convenience and are willing to pay more for it as they would rather buy time than prepare food. Thus, the amount of processed foods in consumption increases. According to de Moraes, Afonso and de Almeida (2010), however, processed, functional and convenience foods are still less familiar to the elderly in Europe. This is supported by a survey conducted among a group of elderly people in Portugal that states: “for the Portuguese elderly, good taste was strictly related to the fresh and unprepared products, which is in fact the opposite of the convenience food concept”. Adoption of urban lifestyles, however, provides more exposure to advertising, which increases awareness about both the benefits and disadvantages of convenience food to both young and elderly consumers. However, the benefits of convenience go beyond healthy diet and are more related with social changes in gender roles and availability of time.

As a response to the global problem of overweight and obesity, many policy makers, health professionals and health bodies advocate greater government intervention in the habits and lifestyles of citizens. The UK Foresight Report (Government Office for Science, 2011) suggests that “campaigns to change individual behaviour involving public education, advertising, targeted programmes in schools and workplaces, and the provision of better labelling enable the public to make more informed decisions”.

Amongst the countries that have taken such measures are Hungary, Brazil, India (Bangalore) and the USA. Andreyeva, Long, and Brownell (2010) state that one way to address the issue of obesity is to change the relative prices of selected foods through carefully designed tax or subsidy policies. According to the Euromonitor International Study (2011)², Hungary has imposed higher taxes on products rich in salt, sugar and carbohydrates, and in Bangalore parents are being discouraged by authorities from giving processed foods to their children. The study also reveals that Brazil's public health authorities “are arguing for aggressive official measures, ranging from healthier school meals and the aggressive promotion of breast-feeding to taxes and tougher warnings on unhealthy food products”. The authorities in the US are trying to reduce fast food consumption through zoning, counter-advertising, taxing unhealthy food, calorie labelling, warning labels and other nutritional information. Corporate Accountability International's report (Gagnon, Freudenberg, and Corporate Accountability International, 2012) encourages US citizens to take an active part in reducing the number of fast food restaurants in their community and suggests a number of policies that might help to do so, depending on the situation and the demands of the specific zone.

Closely related to health concerns are food safety concerns. Epidemic crises such as the ‘mad cow’ disease have triggered greater calls for increased transparency, meaning the ability to trace the food bought by consumers. Transparency represents an important aspect of quality and safety assurance by allowing the tracing of products, ingredients, suppliers, retailers, processing operations or storage procedures throughout the food production chain. This is especially relevant when failures occur. As the food chain has lengthened from local production, processing and consumption to more global commercial opportunities, the need to transfer information related to production and public health and the complexity of these transfer vehicles has expanded (McKean, 2001). With the increase in complexity, the consumer wishes to know about the origin (species, place, condition of rearing or catch), the transformations and the distribution of their food products (Pascal and Mahé, 2001). Thus, the Hazard Analysis and Critical Control Points (HACCP) standards are applied to international trade as a response to consumer demand.

HACCP International is a leading food science organisation specialising in the HACCP food safety methodology and its application within the food and related non-food industries. The organisation develops standards for preserving the basic environmental conditions of food: cleaning and disinfection, maintenance, personnel hygiene and training, pest control, plant and equipment, premises and structure, services (compressed air, ice, steam, ventilation, water etc.), storage, distribution and transport, waste management, and zoning (physical separation of activities to prevent potential food contamination).⁷

HACCP standards are an example of regulations supporting safety of production and trade as developed countries have made them a prerequisite for exports and imports. Initially introduced as a voluntary requirement, HACCP systems are becoming mandatory for all imported food or for certain food sectors in many countries today.

Many food processing companies already have effective internal traceability systems as part of their HACCP based quality assurance systems.⁸ In many cases, however, traceability is lost before and after the company deals with the raw materials and the final products. Consequently, several e-business companies produce software allowing the integration of financial and production data in one programme package, and most of these have traceability capability components implemented (e.g. i2 technologies Inc., Dallas, USA; SAP AG, Walldorf). The United Nations Electronic Data Interchange for Administration, Commerce and Transport (UN/EDIFACT) standard is currently the most widely used standard for transferring data between steps in the chain.⁹

A good example¹⁰ of food digital tracking is the Chinese organic farm Yi Mu Tian. Mindful of Chinese consumers' concerns over food safety, the high-tech farm, which uses computers for temperature regulation, lighting and watering, operates a traceability code system that allows consumers to track any food item back to the field in which it was grown. Customers can also track the growth of vegetables by camera. As of October 2012, the farm had fulfilled home delivery orders to over 60 000 families in Shanghai.

In addition to HACCP quality assurance standards, legislation and standards have been issued in order to control sanitary standards of food. FAO and WHO established The Codex Alimentarius Commission in 1963.¹¹ The Commission develops harmonised international food standards, guidelines and codes of practice to protect the health of consumers and to ensure fair practices in the food trade.

3. CORPORATE SOCIAL RESPONSIBILITY

Another trend that is gaining importance globally is corporate social responsibility (CSR). CSR has been in vogue for some time already and public awareness of the initiative continues to grow. According to Deloitte (2012), corporate social responsibility is increasingly important for consumers as they consider sustainability, ethical sourcing, and food miles, among other factors. Consumers are expected to pay more for 'socially responsible' products and may support companies who care enough to do so.

Increasing concerns about healthy eating and social responsibility were manifested in another trend – transparency, which we briefly touched upon in the previous section. Despite the development of efficient traceability systems all over the world, it is still difficult for interested

consumers to find adequate and reliable information regarding where food is grown and its impact on the planet. However, “never before has it been easier to find data and information about food. It is now possible to locate your closest farmer’s market, to learn about the sustainability of your favourite brand, and to uncover the environmental and social score of products compared to similar items. You can subscribe to countless food publications, blogs and recipe sites.”¹⁴ Consumers are learning about food more and more via the web and share the information with each other. Transparency helps consumers make better decisions regarding their food consumption. Individual consumers may have different sustainability agendas from the companies that serve them. A new partnership is needed between corporate social responsibility and marketing communities to reconcile a company’s own responsibility initiatives with its consumers’ aspirations” for a sustainable supply chain. “The informed consumer can affect change in the food system by choosing to purchase items that promote sustainability, equitability or other desirable goals. Clear labelling and information are essential for this to happen” (UK Foresight Report, Government Office for Science, 2011, p. 36). As a result, transparency is no longer a consumer driven trend, but a retailer’s corporate social responsibility policy.

Consciousness of corporate responsibility is often driven by the media, by NGOs, and by shareholders. The transparency that better informed consumers of today demand from corporations goes beyond values stated in company ethic codes. Consumers are interested not only in what the company has planned to achieve in the direction of social responsibility, but also what has not been achieved in reality.

According to Edelman (2012)¹², the percentage of global consumers who trust businesses to do what is right was 56% in 2011, with a reduction to 53% in 2012. Cone Communications (2012)¹³ states that 69% of US consumers said they are more likely to buy from a brand that talks publicly about its Corporate Social Responsibility (CSR) results, versus the 31% who would purchase from a brand that talks about its CSR mission and purpose. As a response to the trend, many companies are motivated to actively communicate to the consumer that they carry out their business responsibly providing full information about the product and its movement through the value chain. As an example, in September 2012, McDonald’s began publishing calorie information on all its restaurant menus and drive-through windows in the US, whilst the company also started promoting its ‘Favourites Under 400 Calories’ menu, which includes lighter dishes such as the Filet-O-Fish sandwich and the Egg McMuffin.¹⁴

4. PRODUCTION SYSTEMS AND INNOVATION

Traditional procedures of food production and processing, sometimes related to local cultures, are linked with positive perceptions in the assessments made by consumers about the expected quality of food products. This idea is sometimes included in the designations of origin schemes in the countries of the European Union (Bertozzi, 1995; Fotopoulos and Krystallis, 2003). It has been demonstrated that a traditional appearance of food can be identified by consumers as a sign of superior quality in contrast to standardised commercial foods (Kupiec and Revell, 2001). In a similar way, some consumers tend to distrust innovation and the use of new technologies in food production (Yeung and Morris, 2001, 2006; Yeung and Yee, 2003), considering their outcomes as less authentic, of lower quality, and even hazardous (Sapp, 2003). When making food choice decisions, technology appears to be a potential source of risk for concerned consumers.

Uncertainty about the possible consequences derived from consuming foods having that used innovative food harvest methods can adversely affect consumers' willingness to purchase (Loureiro and Hine, 2004). Unfavourable beliefs and attitudes towards these new foods may impede adoption and diffusion, negatively affecting perceptions and appraisal of the products. Mistrust of innovation may also prevent the adoption of convenient foods in the most traditional societies (Choo, Chung and Pysarchik, 2004).

This is the case of aquaculture and other new developments in food production, including genetically modified organisms. In some countries with significant rates of seafood consumption, farmed species are also suffering from low consumer appraisal and a low expected quality. Aquaculture is a relatively new source of food supply which is not as appreciated as traditional wild fishery in high seafood consumption communities (EG DG MARE, 2008; Fernandez-Polanco, Mueller and Luna, 2013). This is the case of Southern European countries, where seafood is culturally related to the traditional diet. As a result of this preference for wild species, farmed products result in negative perceptions and a less competitive position in terms of preferences and prices.

Conversely, organic food has become very popular by trends in healthy eating. Organic food certification is a reflection of consumers' concerns about both health and the environment. The term "organic" refers to the way agricultural products are grown and processed. Specific requirements must be met and maintained in order for products to be labelled as "organic" (Council Regulation (EC) No 834/2007)¹⁵. Organic crops must be grown in safe soil, have no modifications, and must remain separate from conventional products. Farmers are not allowed to use synthetic pesticides, bioengineered genes (GMOs), petroleum-based fertilisers, and sewage sludge-based fertilisers. Organically raised animals are not given antibiotics, growth hormones, or fed animal by-products. In addition, the animals are given more space to move around and access to the outdoors, both of which help to keep the animals healthy. The more crowded the living environment, the more likely the animal is to get sick. In order to raise animals organically, clear communication with farmers is important. Germany and the European Commission work together in the direction of animal welfare. They identified the principles of welfare quality that are good housing, good feeding, good health and especially appropriate behaviour.

"An organic label indicates that a product has been certified against specific organic standards. The label carries the name of the certification body and the standards with which it complies (e.g. EU 2092/91)."¹⁶ The label of a given certification body informs the consumer about the type of standards complied with during production and processing as well as on the type of recognition granted to the certification body. "Many certification bodies operate worldwide, most of which are private and originate in developed countries. To the informed consumer, this label can function as a guide."¹⁷

In July 2010, a mandatory European Union (EU) logo for organic food was introduced to strengthen the organic sector by making the identification of organic products easier for consumers. "The placement of the EU logo is mandatory from 1 July 2010 for pre-packaged food. It remains voluntary for imported products after this date. From 1 July 2010, where the Community logo is used, an indication of the place where the agricultural raw materials were farmed should accompany it. It should be indicated that the raw materials originate from 'EU

Agriculture', 'non-EU Agriculture' or 'EU/non-EU Agriculture'. If all raw materials have been farmed in only one country, the name of this specific country, in or outside the EU, can be indicated instead. If operators wish to sell their products in another EU Member State than their own, they may place an additional national or private logo that will be recognised by the consumers of this particular country¹⁸.

However, according to Deloitte (2012), while consumers want healthy food” they often don’t know what healthy means and are easily confused. For instance, organic means “not enhanced,” while functional foods usually signify “enhanced”.

The global organic food market grew by 9.8% in 2011 to reach a value of US\$67.2 billion. North America and South America account for 50.3% of the global organic food market value with large amounts of output in South America exported to North America. In 2016, the global organic food market is forecast to have a value of US\$102.5 billion, an increase of 52.6% compared to 2011.¹⁹ Taking into account the above, the standardisation of labelling and increased consumer awareness about it are very relevant. Janssen and Hamm (2012), in analysing the consumer perception of the mandatory EU logo for organic food, found that while the introduction of the logo was generally welcomed in all countries, consumers were concerned about the trustworthiness of the inspection system. It is suggested that communication campaigns informing consumers about what the new EU logo stands for and how the inspection is done should be conducted to address these concerns. This could involve topical publications and activities arranged by different social groups.

The development of the organic market has also its own brakes. Despite its growing popularity, premium prices are still a problem for increasing demand in developed countries (Magnuson et al, 2001), and limit the potential of markets in less developed countries, which become suppliers of organic food for foreign richer market. Spain is, within the EU, a good example of this gap between producer countries and destination markets. Spanish organic agriculture may benefit from enlarging the local market. However, in spite of increasing concerns about health and environment across the population, consumer’s and retailer’s attitudes toward organic food do not favour demand expansion. There are even small segments willing to accept premium prices for the expected benefits of an organic diet; these premiums are not big enough to compensate the cost differential between organic and conventional agriculture (Sanjuan, 2003).

While the organic food concept and labelling met with fast approval from consumers, acceptance of genetically modified crops and nanotechnology is low. Genetic engineering is a science that involves deliberate modification and transformation of certain genetic materials of plants or animals to create new variations of products. Genetically modified (GM) foods made their first appearance in food markets in the 1960s. As suggested in Chen’s (2008) research about consumer attitudes and purchase intentions towards genetically modified foods, many foods consumed today are either genetically modified whole foods or foods containing ingredients brought about by gene modification technology.

Nanotechnology is a technology dealing with nano-particles and allowing materials to achieve new qualities in this dimension. Even though this technology makes interesting innovations possible in the food domain such as by adding additional benefits (e.g. better solubility of

vitamins, longer shelf-life, cancer prophylaxis), the possible negative consequences of this technology for humans and environment are unknown.

Despite the perceived benefits of these technologies, consumers are rather sceptical when they see “genetically modified” in the labels. Consumer attitudes in Europe towards GM foods as reported in many studies and publications appear to have been strongly negative (e.g. Bredahl, 2001; Grunert et al., 2000; Grimsrud et al., 2004). US consumers historically remained neutral toward GM foods until recently when research studies suggest their slight disapproval of such foods (Gaskell et al., 1999, pp. 384-7). Batrinou, Spiliotis, and Sakellaris (2008) demonstrated in an emphatic way a degree of phobia concerning GM food and the importance of carefully worded labeling among younger consumers. Siegrist, Stampfli and Kastenholz (2009, p. 660) summarise the results of a survey detailing consumers' decision-making process with regards to nanotechnology products in this way: “Results suggest that consumers attribute a negative utility to nanotechnology foods, even though the products had a clear benefit for the consumers. Results suggest that consumers are interested in products with additional health effects only when the effect is due to natural additives”. Thus, food markets should make special efforts to raise consumer awareness about the benefits of these new technologies, so that consumers will have a more positive attitude towards genetic modification and nanotechnology in foods.

5. SUSTAINABILITY

Sustainable consumption and production in food, fisheries and agriculture has long been a concern of resource economists (Bjørndal and Munro, 2011) is another consumer-driven trend. The availability of natural capital such as fish stocks and land is limited by nature. Thus, the informed consumer cares about integrated implementation of sustainable patterns of food consumption and production, respecting the carrying capacities of natural ecosystems. Consumer choice plays a leading role in orienting production, as consumers select certain types of products according to place of origin, production processes, or producer.

Kurien (2005, p. 58) provides a good example of how consumers can influence sustainable production in the fishing industry. “Fish-exporting developing nations need to reassert their commitment to immediate resource rejuvenation and long-term conservation and management. Consumers in developed countries play an important role in this context. It is they, finally, who will decide the contours of luxury consumption. Harvesting of small Nile Perch in Kenya is based on the export demand for fillets obtained from immature fish with a body weight below one kilogram. There is a vibrant, illegal market in the United States for immature lobsters from Brazil. As long as such demands persist, it actually pays developing country fishers to fish unsustainably.”

FAO (2012) reveals the latest statistics about fish stock depletion: almost 30 percent of fish stocks are overexploited - a slight decrease from the previous two years – while about 57 percent are fully exploited (i.e., at or very close to their maximum sustainable production. Overexploitation not only causes negative ecological consequences, but also reduces fish production, which leads to negative social and economic consequences.

Poor natural resource use in aquaculture not only influences fish stock depletion, but also threatens biodiversity. Mangroves, which are commonly found along sheltered coastlines in the

tropics and subtropics, have declined from 18.8 million ha in 1980 to 15.2 million ha in 2005 according to *The World's Mangroves 1980-2005* (FAO, 2007). Human pressure on coastal ecosystems and the competition for land for aquaculture, agriculture, infrastructure and tourism are often high and are major causes of the decrease in mangrove areas” (FAO 2012, p. ix).

Fisheries sustainability, assured to consumers through ecolabels and other types of certification, reflects the seafood sector's increasing willingness to be environmentally friendly. From a retailer's point of view, ecolabeled products increase transparency in aspects going beyond food safety and quality standards. The goal of ecolabels is to create market incentives for the implementation of sustainable processes in the food industry. Research has provided evidence pointing to a positive effect from the use of ecolabels on seafood demand and consumers' willingness to pay. Within the same species, certified fish may be preferred to non-certified, while the premiums do not exceed a limit of tolerance (Wessells Johnston, and Donath, 1999). Environmental labels are more useful than quality claims in obtaining premium prices for seafood products and for particular species (Jaffry et al., 2004). However, it was recently found that consumers are not willing to shift from their preferred species to other lower priced ones due to the presence of environmental labels (Johnston & Roheim, 2006). The effects of ecolabels differ among species and certifying agencies (Wessells, Johnston, and Donath, 1999; Jaffry et al., 2004), and across countries (Johnston et al., 2001). The former is related to the intensity of public concerns, governmental and non-governmental actions and presence in media dealing with environmental issues (Roheim, 2008).

The number of consumers persuaded to purchase these environmentally labelled products, and their willingness to pay a premium for them, become key factors in assuring the success of these kinds of strategies (Roheim, 2008). One cannot expect that consumers are going to be attracted by the presence of ecolabels alone in a set of buying options; they need to be convinced to act environmentally friendly. As with healthy behaviour, it is a process which begins with consumers' concerns, which do not necessarily result in a willingness to behave sustainably without the concurrency of other psychological factors (Abdul-Muhmin, 2007). Consumers will not pay attention to ecolabels unless they are environmentally concerned and convinced to act for environmental protection through their buying decisions. Consumers have to perceive that buying those products is an effective means to achieve this goal, and they need to recognise that the information in the label is useful for this purpose (Thøgersen, 2000). Confusion on the meaning of the term sustainability and on the wide number of different options is one factor which may affect the conclusion of the process. In addition, the availability of these labels in stores is the main requirement for the success of ecolabeled products, and this decision lies in retailers' hands.

The proliferation of ecolabels in fish consumption in the last decade or so has led to calls for some international guidance in the area. As a response, FAO developed the *Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries* (FAO, 2009). The guidelines set out principles, minimum requirements, and procedural aspects that any ecolabelling scheme should encompass and provide a benchmark against which various schemes can be compared. Washington (2008, p. 2) states that "by purchasing fish and seafood products certified to a respected ecolabelling scheme [consumers] can reassure themselves that their consumption is not having an adverse effect on fish stocks or the marine environment, and assuming no price premium, they can 'do the right thing' at no additional cost." At the same

time, information on potential health benefits was shown to increase demand for specific seafood species and consumers' willingness to pay (Marette, Roosen and Blanchemanche, 2008).

The world's leading certification programme for wild capture fisheries is that of the Marine Stewardship Council (MSC). The organisation has developed standards for sustainable fishing and seafood traceability and follows certifications set out by the FAO and the ISEAL Alliance (the global membership association for sustainability standards).²⁰ The MSC programme is not mandatory, but certain retail chains in countries such as UK and Germany have a preference for MSC certified sea products. In other countries it is voluntary and any fishery can try to become certified if it passes the rigid standards of the MSC. MSC certification is expensive though which puts small-scale fisheries at a disadvantage. In addition, the mandatory requirement of MSC in some EU countries creates market access problems for developing countries. By 2013 there have been 188 fisheries that are certified to the MSC standard. There are 106 that are in the formal process of being assessed but have not yet been certified. The total landing of fish from MSC certified fish is 6.5 million tonnes amounting to 7% of the global seafood supply.²¹ Regression results of hedonic analysis of MSC certified frozen processed Alaska pollock products in the London metropolitan area using scanner data shows a statistically significant price premium of 14.2% (Roheim, Asche and Santos, 2011). However, their conclusions are conservative when considering whether the premium is sufficient to cover producers' costs of certification.

The benefits of carrying the MSC logo have recently been put in question by certain producers and governmental institutions, Alaskan salmon processors being the best known case. A group of salmon processors from Alaska withdrew from the MSC in 2011 and kept selling their products under the coverage of the local and governmental certification programme alone (Alaska Sea Food Marketing Institute). This withdrawal appears to have had no significant consequences on their sales, even in markets with a strong presence of MSC certified products like Germany. Among other well-known government certification programmes are Krav (Sweden), Iceland Responsible Fisheries and Ø-mark (Denmark).

Consumers also have concerns about how the production of food affects climate change. Mercer (2006) states that "28% of consumers in the UK, and 19% in the U.S., are 'strongly concerned' about climate change. This group shows a latent demand for products, services and brands that would allow people to reflect their climate-change concern in their spending". "Global climate change has been largely driven by the activities of the industrialised countries. Yet its most severe consequences will be and, indeed, are already being felt by the developing countries. Moreover, it is the poor of those countries who, in part because of the poverty, are most vulnerable. If left unchecked, climate change will increase hunger and cause further deterioration of the environmental resources on which sustainable agriculture depends." (Conway and Wilson, 2012).

In Europe the concept of buying local products is strongly promoted. The food miles concept which originated in the United Kingdom (UK) in the early 1990s has been supported by a range of environmental, community and farmer groups, and became very popular among consumers and stakeholders in assessing the sustainability of production and the impact on climate change. Food miles is the distance that food travels from its production until it reaches the consumer. Long-haul trucking and flying require large amounts of fossil fuel, the combustion of which releases carbon dioxide and other pollutants into the atmosphere. Extended supply chains due to

globalisation with big flows of imported products have significantly increased the distance in recent decades. An example is given by salted & dried cod, a traditional product made in Norway for export to countries such as Portugal and Brazil. In recent years, China has started importing frozen cod from Norway which, after salting and drying, is exported to Brazil where it is sold in competition with Norwegian product. The food miles involved in these two alternative supply chains are vastly different. According to Worldwatch Institute, “in the United States, food now travels between 1,500 and 2,500 miles from farm to table, as much as 25 percent farther than two decades ago.”²² In the same vein, reflecting ‘the consumers’ concern about the carbon intensity of transportation, two major UK retailers (Tesco and Marks and Spencer) now place plane stickers on fresh produce that has been air freighted from abroad (Hogan and Thorpe, 2009).

Forestry sustainability is another environmental concern among consumers. Forests are the lung of the planet. They absorb and recycle CO₂, helping to reduce global greenhouse gas emissions and stabilise the climate. The loss of forests has major climate, biodiversity and socio-economic impacts. Deforestation accounts for an estimated 10% of global greenhouse gas emissions and 60% of Brazil’s emissions, its largest source²³. In addition, the Amazon is the most biodiversity-rich rainforest in the world and is home to one in 10 known plant and animal species. According to the BBC, “last December, a government report said deforestation in the Brazilian Amazon had fallen to its lowest rate for 22 years. However, the latest data shows a 27% jump in deforestation from August 2010 to April 2011.”²⁴

As Brazil is the biggest importer of soya beans in the world, some environmentalists argue that rising demand from both developed and developing countries motivates farmers to clear more and more of their rainforest land.

Many aspects of sustainable production rely on government and policy makers. Therefore, the onus of a major transformation of the market to ensure sustainable production and consumption rests in the hands of different agents. Consumers, especially wealthy, developed-country consumers, can influence production conditions. However, the ability to effectively affect or influence the way food is produced, especially in developing countries, will be limited by the size of the segments, their purchasing power, and their dependency on imports for supplying these concerned and involved consumers. Actions focused on consumer education may be effective, but this is a complex process. The role of relevant government agencies, certifiers and NGOs in this process consists of providing information, clarifying concepts and options and promoting environmentally responsible behaviour among consumers, which may support the producers’ increasing costs of becoming sustainable by increasing market returns (Roheim, 2008).

6. COUNTRY AND REGION OF ORIGIN

As briefly mentioned above, a country or region of origin is an important determinant of consumers’ food preferences that possibly have the longest history in its use for product differentiation. Some regions have special environmental conditions or processing traditions which make their products’ quality especially appreciated and celebrated in national and overseas markets. The protection of geographical indications was extended to foodstuffs and other agricultural products in 1992 (Council Regulation (EEC) No 2081/92 of 14 July 1992)²⁵.

One example of this differentiated strategy is the European Union's programme of Protected Denomination of Origin (PDO), which currently governs by Council Regulation (EC) No 510/2006 of 20 March 2006 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs.²⁶ According to the programme, products from certain geographical areas are identified with a collective brand related to certain land, climate or process advantages particular to that region. Feta cheese has been a protected designation of origin product in the European Union since 2002.²⁷ According to the PDO, only those cheeses produced in a traditional way in some areas of Greece (Macedonia, Thrace, Thessaly, Central Mainland Greece, the Péloponnèse and Lesbos), and made from sheep milk, or from a mixture of sheep and goat's milk (up to 30%) of the same area, may bear the name "feta". Among more recent PDO protected products is Aceite de Navarra, an olive oil, which was registered by Spain in September 2009. Despite the globalisation of some ethnic or regional cuisines, there are some foods and preparation methods which tend to be associated with certain geographic areas. Other important variables that may affect consumers' preferences, such as attitudes and traditions, may be related to geography (Larson, 1998). Country or region of origin is used by consumers as an external sign in making quality assessments of food products (Hoffman, 2000; Scarpa, Philippidis and Spalatro, 2005; Kim, 2008).

A second aspect of origin is reflected in consumers' predisposition to prefer local or domestic food over food imported from other regions or countries. This consumer attitude, also called 'ethnocentrism' (Shimp & Sharma, 1987; Sharma, Shimp and Shin, 1995), represents the consumer's beliefs about the appropriateness of purchasing products made in foreign countries. Highly ethnocentric consumers may be systematically refusing to purchase imported products. Consumer ethnocentrism may be a significant predictor of consumers' assessments of domestically made foods, and its effects seem to be stronger in food choices than those of demographic variables (Orth and Firbasová, 2003) or even health and sustainability claims (Fernandez-Polanco, Mueller and Luna, 2013).

The effects of claims based on the region or country of origin may vary across products and regions (Scarpa, Philippidis and Spalatro, 2005). When testing the interest in local farm-raised species, familiarity with aquaculture and frequent seafood consumption were found to be determinant factors of preference and the willingness to pay (Quagraine, Hart and Brown, 2008). Experience with the product, both from the point of consumption and production, may be affecting the strength of the influence of country or region of origin claims.

7. SUMMARY AND DISCUSSION

Following the analysis above, Table 1 summarises some of the main trends that will influence future food demand.

Table 1. Future consumer trends

Trends	Actions	Impact on food demand
Food safety and health benefits	<ul style="list-style-type: none"> Government intervention in the diets and lifestyles of citizens in order to control obesity Campaigns to change individual behaviour involving public education, advertising, targeted programmes in school and workplaces Established systems for food traceability 	<ul style="list-style-type: none"> Increased demand for food that is eco-labelled and certified by authorised bodies Increasing popularity of organic food Decreased consumption of fast food
Production systems and innovations	<ul style="list-style-type: none"> Change of food production processes Revert towards traditional production processes in cases such as organic foods Application of genetic modification and nanotechnology to production of new foods 	<ul style="list-style-type: none"> Further adaptation to new foods, though slow in cases where genetic modification, nanotechnology, aquaculture and convenience applies Growth in relevant certification and ecolabelling
Corporate social responsibility	<ul style="list-style-type: none"> Increased awareness about social issues in food production by media, NGOs, consumer brands and other stakeholders Full information about the product and its movement through the supply chain provided by producers Increased availability of information about product flaws, production mistakes, failures and unreachd social responsibility goals provided by producers A tendency to shift business practices toward social responsibility by producers and other stakeholders involved 	<ul style="list-style-type: none"> Increased preference for “socially responsible” products More informed consumer choice about food products Increased demand for products from reliable brands/producers Affinity with “honest” brands/producers
Sustainability	<ul style="list-style-type: none"> Established legislation towards sustainable and safe food production Ecolabels 	<ul style="list-style-type: none"> Increased demand for products that are produced sustainably and certified
Country and region of origin	<ul style="list-style-type: none"> Promotional actions towards local food by social agents (governments and NGOs) 	<ul style="list-style-type: none"> Preference for local foods over exported by consumers if products prices are competitive

Food safety and health benefits.

Healthy eating will be one of the dominant trends in food consumption in the coming decades. Driven by concerns about a global rise in the proportion of overweight and obese consumers and obesity-related diseases, governments will play an important role in promoting healthy eating habits to the public through campaigns, advertisements, targeted programmes in schools and workplaces. As a consequence, demand for food that is certified by an authorised body, labelled

with safety assurances, whether public or private, or organic-labelled, will increase, and the consumption of fast and fat food will decline. The adoption and consumption of healthy foods will vary among countries and individuals due to different ability to process information, understand health benefits and consumer involvement in personal health care.

Consumers' concerns about health are closely related to food safety concerns. Consumers will demand more information about food products and the possibility to trace their movement through the supply chain.

Corporate social responsibility

Corporate social responsibility is a rising trend among consumers and retailers. Consumers will demand more transparency from producers about food products, and will pay more attention to production sustainability, ethical food sourcing, and food miles, among other factors. An abundance of publicly available information related to the food industry, product flaws, production mistakes, failures and unmet social responsibility goals will motivate producers to fully disclose information about their products. The reliability and honesty of the producer will increasingly influence consumers' choice towards food. Corporations will progressively change their practices by making them more socially responsible as a response to media, NGOs and consumer demands.

Production systems and innovations

Food production and processing procedures will be affected by consumers. In some cases, such as the cultivation of organic foods, production systems will revert towards more traditional ones. In other cases, developments in nanotechnology and genetic modification will stimulate the production of new foods. The acceptance of genetically modified products and nanotechnology will continue to be low due to the negative perception of consumers towards modified foods. These developments in the food industry will further facilitate the growth in relevant ecolabelling and certification schemes among producers.

Sustainability

Consumers' interest in the sustainable production of foods will continue to be an increasing trend, especially in wealthy developed countries. Fish stock and forest depletion as well as the effect of production on climate are among some areas of consumers' concerns to be mentioned. Legislation will reinforce the trend towards sustainable production. The popularity of sustainable and "socially responsible" products will increase as a result.

Country and region of origin

The concept of buying local products is favoured among consumers, in Europe in particular. Attitudes, traditions, special production methods distinguishing the food in national and international markets are the elements that will influence the choice for local foods over imported products among consumers.

Discussion

The extent to which these new trends will in fact affect food demand in the future is conditioned by the level of involvement in promotion of retailers as well as the size and the economic value of the segments of concerned consumers. Unless the segments of concerned consumers reach a minimum profitable size for producers and retailers, the main drivers in global food consumption

will remain price, health and safety and technical quality as it is the dominant present trend. Given that the majority of the issues mainly concern consumers in developed countries, expected future changes in international food flows will have some impact in this respect. One interesting question is whether all these consumers' concerns which seem to have some impact on the demand for food in South-North trade will have any impact in South-South flows and the production of food to address local demand.

The rise in consumer concerns strongly depends on the promotional efforts undertaken by stakeholders, mainly governments and NGOs, but also media and other relevant groups. These stakeholders do not always act in the same way, or share the same interests and goals, often resulting in increased confusion rather than increased concerns. Price sensitivity will have a major impact on the development of these markets. Even concerned consumers are limited in their budget when they make food choices and this will affect the acceptability of premium prices. The fall in household purchasing power in many Western countries due to the policies adopted to overcome the financial crisis will also have an impact on the demand for premium foods and may become an obstacle for market development. Finally, even in countries with similar levels of income, cultural issues may result in differences in terms of concerns and consumption.

References

Abdul-Muhmin, A.G. 2007. Explaining consumers' willingness to be environmentally friendly. *International Journal of Consumer Studies*, 31: 237-247.

Anderson, J.C. & Anderson, J.L. 1991. Seafood quality: issues for consumer researchers. *Journal of Consumer Affairs* 25(1): 144-63.

Andreyeva, T., Long, M.W. & Brownell, K.D. 2010. The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price Elasticity of Demand for Food. *American Journal of Public Health*, 100(2): 216-222.

Batrinou, A.M., Spiliotis, V. & Sakellaris, G. 2008. Acceptability of genetically modified maize by young people. *British Food Journal*, 110(3): 250-259.

Bertozzi, L. 1995, Designation of origin: quality and specification, *Food Quality and Preference*, 6: 143-7.

Bjørndal, T. and Munro, G.R. 2012. *The Economics and Management of World Fisheries*. Oxford University Press.

Bredahl, L. 2001. Determinants of consumer attitudes and purchase intentions with regard to genetically modified foods: results of a cross national survey. *Journal of Consumer Policy*, 24, 23-61.

Byrd-Bredbenner, C., Wong, A. & Cottee, P. 2000. Consumer understanding of US and EU nutrition labels. *British Food Journal*, 102(8): 615.

Chen, M-F. 2008. An integrated research framework to understand consumer attitudes and purchase intentions toward genetically modified foods. *British Food Journal*, 110(6) : 559-579.

Choo, H., Chung, J-E. & Pysarchik, D.T. 2004. Antecedents to New Food Product Purchasing Behaviour Among Innovator Groups in India. *European Journal of Marketing*, 38(5/6): 608-625.

Codron, J.M., Giraud-Héraud, E. & Soler, L.G. 2005..Minimum Quality Standards, Premium Private Labels, and European Meat and Fresh Produce Retailing..*Food Policy*, 30: 270 -283.

Conway, G & Wilson A. 2012. One billion hungry; can we feed the world? *Cornell University Press*.

Davidson, A., Schröder, M.J.A. & Bower, J.A. 2003. The Importance of Origin as a Quality Attribute for Beef: Results from a Scottish Consumer Survey. *International Journal of Consumer Studies*, 27(2): 91-98.

de Morais, C., Afonso, C. & de Almeida, M.D.V. 2010. Ageing and food consumption in Portugal: new or old paradigms? *British Food Journal*, 112(5): 511-521

Drichoutis, A.C., Lazaridis, P. & Nayga, R.M. 2006. Consumer's Use of Nutritional Labels: A Review of Research Studies and Issues. *Academy of Marketing Science Review*, 9.

European Commission DG MARE 2008. Image survey on the perception of fishery and aquaculture products, Available at: http://ec.europa.eu/fisheries/publications/studies_reports_en.htm

FAO. 2007. The World's Mangroves 1980 – 2005. A thematic study prepared in the framework of Global Forest Resources Assessment. FAO Forestry Paper 153. Rome. 2007.

FAO. 2009..Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries. Revision 1. Rome. 2009.

FAO. 2012. The State of World Fisheries and Aquaculture (SOFIA). Rome. 2012.

FAO & ILO. 2013. Guidance on addressing child labour in fisheries and aquaculture. ISBN 978-92-5-107709-2.

Fernandez-Polanco, J. & Luna, L. 2010. Analysis of Perceptions of Quality of Wild and Cultured Seabream in Spain. *Aquaculture Economics and Management*, 14(1): 43–62.

Fernández-Polanco, J. & Luna, L. 2012. Factors Affecting Consumers' Beliefs about Aquaculture. *Aquaculture Economics and Management*, 16(1): 1–18.

Fernández-Polanco, J., Mueller L. S. & Luna, L. 2013. Are retailers' preferences for seafood attributes predictive for consumer wants? Results from a choice experiment for *Sparus aurata*, *Aquaculture Economics & Management*, 17(2): 103-122

Fotopoulos, Ch., & Krystallis, A. 2003. Quality Labels as a Marketing Advantage. The case of 'PDO Zagora' Apples in the Greek Market. *European Journal of Marketing*, 37(10): 1350–1374.

Gagnon, M., Freudenberg, N. & Corporate Accountability International. 2012. Slowing Down Fast Food: A policy guide for healthier kids and families. Corporate Accountability International. Boston, MA. Available at: www.StopCorporateAbuse.org

Gaskell, G., Brauer, M., Durant, J. & Allum, N. 1999. Worlds apart? The reception of genetically modified foods in Europe and the US. *Science*, 295(5426): 384-387.

Government Office for Science. 2011. Foresight. The Future of Food and Farming. Final Project Report. London.

Grimsrud, K.M., McCluskey, J.J., Loureiro, M.L. & Wahl, T.I. 2004, Consumer Attitudes to Genetically Modified Food in Norway. *Journal of Agricultural Economics*, 55: 75–90.

Grunert, K.G., Lahteenmaki, L., Nielsen, N.A., Poulsen, J.B., Ueland, O., & Astrom, A. 2001. Consumer perceptions of food products involving genetic modification: results from a qualitative study in four Nordic countries. *Food Quality and Preference*, 12, 527-542.

- Grunert, K.G. 2005. Food quality and safety: consumer perception and demand. *European Review of Agricultural Economics*, 32(3): 369–391.
- Hamilton, J., Knox, B., Hill, D. & Parr, H. 2000. Reduced fat products – Consumer perceptions and preferences. *British Food Journal*, 102(7): 494.
- Hatanaka, M., Bain, C. & Busch, L. 2005. Third-party certification in the global agrifood system. *Food Policy*, 30(3): 354-369
- Hoffman, R. 2000. Country of Origin – A Consumer Perception Perspective of Fresh Meat. *British Food Journal*, 102: 211–229.
- Hogan L. & Thorpe, S. 2009. Issues on food miles and labeling, ABARE Research Report 09.18, Canberra, December 2009.
- Hosken, D. & Reiffen, D. 2004. How Retailers Determine Which Products Should Go on Sale: Evidence from Store-Level Data, *Journal of Consumer Policy*, 27(2): 141-177.
- Jaffry, S., Pickering, H., Ghulam, Y., Whitmarsh, D. & Wattage, P. 2004. Consumer Choices for Quality and Sustainability Labeled Seafood Products in the UK. *Food Policy*, 29: 215–28.
- Janssen, M., & Hamm, U. 2012. The mandatory EU logo for organic food: consumer perceptions (2012). *British Food Journal*, 114(3): 335-352.
- Johnston, R.J., Wessells, C.R., Donath, H. & Asche, F. 2001. Measuring consumer preferences for ecolabeled seafood: an international comparison. *Journal of Agricultural and Resource Economics*, 26: 20–39.
- Johnston, R.J. & Roheim, C.R. 2006. A battle of taste and environmental convictions for ecolabeled seafood: a contingent ranking experiment. *Journal of Agricultural and Resource Economics*, 31: 283–300.
- Kim, R. 2008. Japanese consumers' use of extrinsic and intrinsic cues to mitigate risky food choices. *International Journal of Consumer Studies*, 32: 49–58.
- Kupiec, B. & Revell, B. 2001. Measuring Consumer Quality Judgements. *British Food Journal*, 103(1): 7.
- Kurien, J. 2005. Responsible fish trade and food security. FAO Fisheries Technical Paper No. 456. FAO, Rome.
- Larson, R.B. 1998. Regionality of Food Consumption. *Agribusiness*, 14(3): 213–226.
- Loureiro, M.L. & McCluskey, J.J. 2000. Assessing consumer response to protected geographical identification labeling. *Agribusiness*, 16 (3): 309-320.

- Leipämaa-Leskinen, H. 2007. Contradictions in food consumption. *International Journal of Consumer Studies*, 31: 597–602.
- Lem, A., Bjørndal, T. and Lappo, A. 2014. *Economic analysis of supply and demand for food up to 2030 – Special focus on fish and fishery products*. FAO Fisheries and Aquaculture Circular No. 1089. Rome, FAO. 106 pp. <http://www.fao.org/3/a-i3822e.pdf>
- Lin, C.T.J. & Milon, J.W. 1993. Attribute and Safety Perceptions in a Double-Hurdle Model of Shellfish Consumption. *American Journal of Agricultural Economics*, 75(3): 724 –729.
- Lippincot Mercer. 2006. Serving the climate-change-conscious consumer. Summary report based on consumer research in the UK and US. The Climate Group, UK.
- Loureiro, M.L. & McCluskey, J.J. 2000. Assessing Consumer Response to Protected Geographical Identification Labeling. *Agribusiness*, 16(3): 309–320.
- Loureiro, M.L. & Hine, S. 2004. Preference and willingness to pay for GM labeling policies. *Food Policy*, 29: 467–483.
- Magnusson, M.K., Arvola, A., Hursti, U.K., Aberg, L. & Sjoden, P. 2001. Attitudes towards organic foods among Swedish consumers.. *British Food Journal*, 103(3): 209-227.
- Marette, S., Roosen, J. & Blanchemanche, S. 2008. Health information and substitution between fish: Lessons from a laboratory and field experiments. *Food Policy*, 33: 197–208.
- McKean, J.D. 2001. The importance of traceability for public health and consumer protection. *Revue Scientifique et technique de l'Office International des Epizooties* 20, 363-371
- Mercerm L. 2006. *Serving the climate-change-conscious consumer*. Summary report based on consumer research in the UK and U.S.
- Nayga, R. M. 1999. Toward an Understanding of Consumers' Perceptions of Food Labels. *International Food and Agribusiness Management Review*. 2(1): 29–45.
- Nayga, R.M. 2000. Nutrition Knowledge, Gender and Food Label Use. *Journal of Consumer Affairs*, 34(1): 97–112.
- Orth, U.R. & Firbasová, Z. 2003. The Role of Consumer Ethnocentrism in Food Product Evaluation. *Agribusiness*, 19(2): 137–153.
- Pascal G., & Mahé S. 2001. Identity, traceability, acceptability and substantial equivalence of food. *Cellular & Molecular Biology*. 47:1329–1342.
- Quagraine, K., Hart, S. & Brown, P. 2008. Consumer acceptance of locally grown food: the case of Indiana aquaculture products. *Aquaculture Economics & Management*, 12(1): 54–70.

- Roheim C.A. 2008. The Economics of Ecolabeling. In T. Ward, & B. Phillips, eds. *Seafood Ecolabelling Principles and Practice*. Wiley-Blackwell. Oxford. UK.
- Roheim C A. 2010. Drivers and Market Trends for Third-Party Certified Aquaculture Products. WAS-AQUA 2010, San Diego.
- Roheim, C.A., Asche, F. & Santos, J.I. 2011. The Elusive Price Premium for Ecolabelled Products: Evidence from Seafood in the UK Market. *Journal of Agricultural Economics*, 62(3): 655-668.
- Sanjuan, A.I., Sánchez, M., Gil, J.M., Gracia, A. & Soler, F. 2003. Brakes to organic market enlargement in Spain: consumers' and retailers' attitudes and willingness to pay. *International Journal of Consumer Studies*, 27(2): 134-144.
- Sapp, S.G. 2003. A Comparison of Alternative Theoretical Explanations of Consumer Food Safety Assessments. *International Journal of Consumer Studies*, 27(1): 34–39.
- Scarpa, R, Philippidis, G. & Spalatro, F. 2005. Product-Country Images and Preference Heterogeneity for Mediterranean Food Products: A Discrete Choice Framework. *Agribusiness*, 21(3): 329–349.
- Sharma, S., Shimp, T.A. & Shin, J. 1995. Consumer ethnocentrism: A test of antecedents and moderators. *Journal of the Academy of Marketing Science*, 23(1): 26–37.
- Shimp, T.A. & Sharma, S. 1987. Consumer ethnocentrism: Construction and validation of the CETSCALE. *Journal of Marketing Research*, 24: 280–289.
- Siegrist, M., Stampfli, N. & Kastenholz, H. 2009. Acceptance of nanotechnology foods: a conjoint study examining consumers' willingness to buy. *British Food Journal*, 111(7) : 660-668.
- Skytte, H. & Bove, K. 2004. The Concept of Retailer Value: A Means-End Chain Analysis. *Agribusiness*, 20(3): 323–345.
- Thøgersen, J. 2000. Psychological Determinants of Paying Attention to Eco-Labels in Purchase Decisions: Model Development and Multinational Validation. *Journal of Consumer Policy*. 23(3): 285–313.
- United Nations Department of Economic and Social Affairs/Population Division. 2004. World Population to 2300. New York.
- Wansik, B., Sonka, S.T. & Hasler, C.M. 2004. Front-label health claims: when less is more *Food Policy*, 29: 659–667.
- Washington, S. 2008. *Ecolabels and Marine Capture Fisheries: Current Practices and Emerging Issues*. FAO/Globefish. Rome.

Wessells C.R., Johnston, R.J. & Donath, H. 1999. Assessing consumer preferences for ecolabeled seafood: The influence of species, certifier, and household attributes.. *American Journal of Agricultural Economics*, 81(5): 1084–1089.

Yeung, R.M.W. & Morris, J. 2001. Consumer perception of food risk in chicken meat, *Nutrition & Food Science*, 31(6):,270-279.

Yeung, R.M.W. & Morris, J. 2006. An empirical study of the impact of consumer perceived risk on purchase likelihood: a modelling approach. *International Journal of Consumer Studies*, 30: 294–305.

Yeung, R.M.W. & Yee, W.M.S. 2003. Risk reduction: an insight of the UK poultry industry. *Nutrition and Food Science*, 32: 219–226.

-
- ¹ The information is taken from http://www.deloitte.com/assets/Dcom-Russia/Local%20Assets/Documents/Foodandbeverage202012_web.pdf Downloaded on 05.06.2013.
- ² The Information is taken from <http://www.blog.euromonitor.com/2012/05/top-10-consumer-trends-for-2012-weight-as-a-hot-topic.html> Downloaded on 03.06.2013.
- ³ China, India, Indonesia, Malaysia, Philippines, Russia, South Africa, Turkey, Brazil, Colombia, Mexico, Germany, Japan, UK, USA.
- ⁴ The information is taken from <http://www.fao.org/hunger/en/>. Downloaded on 27.05.2013.
- ⁵ The information is taken from: OECD Obesity Update 2012. <http://www.oecd.org/health/49716427.pdf>. Downloaded on 27.06.2013.
- ⁶ The information is taken from <http://www.forbes.com/sites/bethhoffman/2012/11/29/three-consumer-trends-will-change-what-we-eat/>. Downloaded on 27.05.2013.
- ⁷ The information is taken from <http://www.haccp-international.com/>. Downloaded on 05.06.2013.
- ⁸ The information is taken from <http://www.fao.org/docrep/006/y4743e/y4743e0p.htm>. Downloaded on 06.06.2013.
- ⁹ The information is taken from <http://www.fao.org/docrep/008/y5831e/y5831e07.htm>. Downloaded on 06.06.2013.
- ¹⁰ These and the following example are taken from <http://www.trendwatching.com/trends/10trends2013/?fullfrontal>. Downloaded on 05.06.2013
- ¹¹ <http://www.codexalimentarius.org/>
- ¹² Edelman, January 2012. <http://www.trust.edelman.com/>
- ¹³ Cone Communications. 2012 <http://www.conecomm.com/new-csr-approach>. Downloaded on 28.05.2013
- ¹⁴ This, and the following two examples, are taken from <http://www.trendwatching.com/trends/flawsome/http://www.trendwatching.com/trends/10trends2013/>. Downloaded on 28.05.2013
- ¹⁵ Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91. <http://www.eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:189:0001:0023:EN:PDF>
- ¹⁶ The information is taken from: <http://www.fao.org/organicag/oa-faq/oa-faq3/en/>. Downloaded on 06.06.2013
- ¹⁷ The information is taken from: <http://www.fao.org/organicag/oa-faq/oa-faq3/en/>. Downloaded on 06.06.2013
- ¹⁸ The information is taken from: http://www.ec.europa.eu/agriculture/organic/consumer-confidence/logo-labelling_en European Commission. Agriculture and Rural Development. Downloaded on 27.06.2013.
- ¹⁹ The information is taken from <http://www.reportlinker.com/p0188829/Organic-Food-Global-Industry-Guide.html>. Organic Food: World Market Overview (Market size, Segmentation and Trends Analysis). Downloaded on 27.06.2013
- ²⁰ <http://www.isealalliance.org/about-us>
- ²¹ Oluyemisi Oloruntuyi. Marine Stewardship Organisation, private communication.
- ²² The information is taken from: <http://www.worldwatch.org/local-food-holiday-recipe-thats-better-you-farmers-and-homeland-security> Downloaded on 28.06.2013
- ²³ The information taken from: <http://www.matanopeito.org/>. Downloaded on 14.06.2013
- ²⁴ The information taken from: <http://www.bbc.co.uk/news/world-latin-america-13449792>. Downloaded on 14.06.2013.
- ²⁵ Council Regulation (EEC) No 2081/92 of 14 July 1992 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs. Also available at: <http://www.eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31992R2081:EN:HTML>
- ²⁶ Council Regulation (EC) No 510/2006 of 20 March 2006 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs. Also available at: http://www.europa.eu/legislation_summaries/internal_market/businesses/intellectual_property/166044_en.htm
- ²⁷ Database of Origin and Registration of PDO. <http://www.ec.europa.eu/agriculture/quality/door/registeredName.html?denominationId=876&locale=en>

The objective of this report is to analyse the major tastes and preferences of consumers in food consumption, as well as expected changes in these over time. We identify five important consumer trends and purchase drivers: food safety and health benefits; corporate social responsibility; production systems and innovations; sustainability; and food origin. For each of these trends we will consider relevant actions that are being implemented by governments, non-governmental organisations (NGOs) and the private sector.

SNF



Samfunns- og næringslivsforskning AS

Centre for Applied Research at NHH

Helleveien 30
NO-5045 Bergen
Norway

P +47 55 95 95 00

E snf@snf.no

W snf.no

Trykk: Allkopi Bergen