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Food consumer science

Lessons learnt from FP projects
in the field of food and consumer science

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Foreword



Understanding the attitudes, knowledge and behaviour of European consumers is of vital importance to policy making on food, guiding regulation, informing new product development and directing other research activities. This publication outlines the spectrum of activities undertaken by the European Commission in the general area of consumer science. This multidisciplinary area underpins many other areas of research activity. We need to better understand the drivers of consumer behaviour towards food purchase and consumption, in addition to take into account how consumer attitudes are formed in the context of agriculture and food and how trust in the food supply chain can be maintained and reinforced. We need to know how these attitudes vary with age and other social parameters, and also how messages about healthy diet can be successfully conveyed to the population.

Regional, national and cultural difference between consumers must be recognised and taken into account for effective communication and education programmes. Market success depends on the degree to which the new product reflects unmet consumer needs. However this is a field that should be independent from the industry, and future programmes could implement what was started in the Fifth Framework Programme for Research and Technology Development (FP5, 1998-2002) and continued in FP6 (2002-2006), that is to include a consumer science component in food/nutrition projects. Consumer science is a growing area where best examples and practices can and should be exchanged between Countries. Some of the disciplines that make up this approach are sensory science, psychology, social sciences, behavioural sciences, statistics, human perception, cognition behaviour, economics and anthropology. Converging technologies, primarily cognitive science and bioinformatics, may also contribute to build up this discipline. Such a complex research field cannot be afforded by a single Member Country.

Research has the possibility either to contribute to policy objectives or to open new possibilities for policy. Consumer research on food is not different from other research in this respect, providing both a contribution to meeting long and short term policy goals through the provision of data on which policy may be assessed and methods of policy be implemented and monitored. This publication produced by the Directorate General Research (DG Research) of the European Commission, cannot be exhaustive in approaching the field of food consumer science. It is just a start, however it may contribute to increase awareness on the importance of consumer's role in the food area, providing examples of EU-funded projects to scientists and other interested people not yet familiar with this discipline.

A handwritten signature in dark ink, appearing to read 'C. Patermann'.

Christian Patermann
Director of Biotechnology, Agriculture & Food Research
Directorate General Research

Introduction

Consumer science

Ask EU citizens about their favourite food, its taste and characteristics, why they eat it and what food means to them and you are likely to get some 485 million unique answers.

The variety of food available in Europe is vast and its cultural significance profound. Traditional dishes and diet differ considerably across the continent from west to east and north to south. People tend also to look at traditional foods to experience “ancient” flavours and explore a significant part of European culture. In parallel, modern food processing, retail logistics and consumer choice are encouraging a trend towards a new European diet in which sometimes the **similarities outweigh the differences**.

Eat well to stay healthy

Our understanding of **nutrition and health** has advanced substantially in recent years. Our bodies need about 40 different nutrients to stay healthy. Some are required in relatively large quantities and are called macronutrients - such as carbohydrates, fats and proteins. Others are known as micronutrients and are needed in smaller quantities. Examples of micronutrients include vitamins, minerals and trace elements.



Different people have widely different energy needs. Very active people need to use more energy and therefore need to obtain it from food. Less active people, who have sedentary, non-manual jobs, need less energy and therefore less food intake. Men usually need more energy than women and adults need more than children. In addition, nutrient requirements differ with ages and stages of development.

In addition, general **food safety standards** have improved enormously, thanks to a better scientific understanding of the causes of spoilage and control of contamination. This, in turn, has translated into new **food technologies**. However, new, safer methods and tighter regulation have not prevented some major food scares in recent years. These have caused great concern to consumers throughout Europe and dented their confidence in the food industry. The end result is periodic dips in sales and changes in consumption patterns whenever a new food safety scare hits the headlines.

Despite our greater understanding of our own nutritional requirements and the nutrition provided by our food, the incidence of **chronic diet-related disease** in the population is rising. These illnesses include diabetes, heart disease and certain forms of cancer. They are becoming the main source of ill health for European citizens and account for a significant part of public health expenditure. On the other hand we are living longer. Since 2000 the average European Union citizen’s life expectancy has gained over one year, with female life expectancy at birth now being over 80 in 18 EU Member States¹.

For past generations, the main reason for diet-related ill health was insufficient quantity or quality of food. Today, mass starvation in Europe is unknown, as are, to a large extent, severe widespread illnesses due to a lack of specific nutritional components. Ironically, our diet-related health scene is now dominated by a rise in the incidence

¹ EUROSTAT “Population and social conditions”, 16/2006

of **obesity**. Europeans are confronted with growing health problems largely caused by over-consumption of food! How can the scales be tipped back again?

Finally, we should not forget the “pleasure” side of eating. The study of food intake integrates fundamental cognitive and emotional processes in the human brain, and can in particular provide evidence on the neural correlations of the **hedonistic experience** central to guiding behaviour.

A “consuming” science

Getting **accurate and understandable messages** across to European citizens on diet (and exercise) appropriate to modern lifestyles is a key element of public health initiatives to halt Europe’s burgeoning waistline. However, it is up to individuals, groups and communities – society in general – to act upon these messages.

How consumers react to messages on food, food safety and diet is a very complex matter that depends on a wide array of individual and societal inputs, underlying beliefs and values. All of which may vary over time and from region to region.

Understanding how people think about food and its production, how they obtain their food, their own attitudes to diet and their understanding of the links between diet and health are all part of a multi-disciplinary area of research of increasing importance that crosses both social and natural sciences: **consumer science**.

Consumer science is an integrating component of broadly-based food research using a variety of techniques to **measure and test consumer behaviour and preferences**. It often combines physiological research with consumer testing for acceptability of new food development.

Consumer science in the area of food has four principal goals that add value to other aspects of food research. It seeks to accurately **measure consumer behaviour in relation to food** – ensuring that what people say they eat is in fact what they eat. From these observations it seeks to **develop comprehensive models of consumer food choice processes**. It seeks to **promote effective interaction with consumers** and their representative groups to provide open and trusted communication channels. This scientific approach can help **develop effective strategies to deliver healthy messages on diet** that are more likely to bring about change in people’s habits. In this respect, an old science such as cognitive science, whose origin is in the mid-1950s, is today used to disclose the secrets of our brain in relation to food behaviours.

This publication outlines key health and diet issues in Europe and gives a brief introduction to consumer science and its contributions. It is not exhaustive, since this field of research field is a very complex and, for the time being, fragmented area. The brochure outlines current and future European research in this area and presents a number of European Commission-funded projects that are throwing new light on consumer attitudes and behaviour across the continent.



European food overview – what we eat

Consumer science

The geographical, historical and cultural diversity of Europe is reflected in its **wide variety of food and drink products**. The many different European cultures each have their own distinct dietary habits. These are largely based on the historical availability of local or regional ingredients and the local climatic and geographical situation.

In southern Europe, the so-called Mediterranean diet uses a larger proportion of fresh fruit and vegetables. Olive oil is also a preferred cooking medium. In northern Europe, vegetables are traditionally boiled and animal-derived fats have been more extensively used for cooking. In the north and east of Europe, pickling and smoking has been a traditional form of preserving foods, whilst in the south, sun-dried produce has been more available.

Variety is the spice of life

Thanks to the rapid expansion in **global agri-food trade**, consumers across Europe can benefit from an unprecedented variety of food products today. **Social and technological developments** over the past two decades have significantly changed the variety of food available in Europe, in terms of total range and supply throughout the year. How food is purchased and prepared has also changed. All these issues are reducing regional differences in diet and Europe's citizens are increasingly **consuming the same kind of food in similar ways**. In parallel, an increasing number of consumers tend to purchase foods when on holiday, creating a type of "food tourism" particularly for typical products that are not widely commercialised out of their region of origin.

European research has sought to correlate the sensory properties of such 'typical' foods and consumer behaviour in order to provide food for thought for strategies to promote these valuable regional products. The research showed that consumers are often most interested in the image of the region of origin or the particular brand, and price effects always has an influence.

Thanks to improvements in food processing and storage techniques, modern transport systems and wider distribution channels, Europeans no longer have to depend on locally-grown produce. Modern canning, freezing, chilling and vacuum packaging techniques have all helped bring about a revolution in food processing. Fast transport systems have ensured the freshness and safety of produce carried over very long distances and onto the supermarket shelf.

One UK supermarket chain estimated that the number of food items in a typical retail store increased from 550 in 1954 to more than 10 000 forty years later (1995). Today, the figure even in a medium-sized European retail outlet may be 25 000 different food products. And each year, more than 20 000 new food and drink products are put on the market. The European food and drink industry has an annual turnover of around €800 billion and employs 4.1 million people.

Food prices are also historically low as a proportion of total family budget, with a much smaller percentage spent on food than just 25 years ago. On average, about 13% of European households' total expenditure goes on food.

Changing habits

With changing lifestyles and the traditional role of housewife fast disappearing, the image of whole families sitting down together tucking into hearty meals with home-made food and fresh-baked bread has become a thing of the past in many parts of Europe. The **amount of time spent eating** at home has been cut back drastically and meals have become more informal, more individual and less predictable. In France, surveys by the *Institut National de la Statistique et des Études Économiques* have pointed up a reduction in the average time spent each day eating at the table from two hours 30 minutes in 1965 to one hour 20 minutes in 1998-99. A similar picture can be found in other European countries. Across Europe the average family spends as little as six-and-a-half minutes preparing the evening meal compared to the typical two-and-a-half hours required 50 years ago.

The revolution in food processing has made food so easy to prepare that children are now much more able to make their own meals and snacks, without having to rely on their parents. The rise in disposable income of households, the tendency for more women to work, increasing numbers of single-person households, and the demands on our time for work and other activities have generated demand for whole **new ranges of convenience foods and the appliances to store and cook them.**



New habits have also grown in a number of population groups including cooking as “entertainment” when organising social events at home: for example, the rise of the summer barbeque and cooking “at the table” such as raclette or fondue.

The rapid expansion of the food retailing industry, better product labelling and nutritional information have had a strong influence on consumer choice, as well as their knowledge about nutritional content and their buying habits. Today’s consumer is in a better position to make **informed decisions** about which foods, and in what quantities, are best for a healthy diet.

More and more people across Europe are eating out or bringing takeaway or ready-made meals home. Almost a quarter of Belgians **never cook a meal at home.** In France, annual per capita consumption of frozen foods, especially ready-prepared meals, rose from 2 kilogrammes to 37 kg between 1965 and 1995.

The growing popularity of convenience foods, at a time when people are becoming more aware of the connection between eating and health, has boosted demand for certain types of processed food deemed low-fat, reduced-sugar, low-calorie or fibre-rich, or which have added vitamins and minerals.

Rich diet, poor diet

Despite, or perhaps because of, the relative cheapness and rich variety of our food, the number of premature deaths arising from diet-related diseases is growing rapidly. One of the most common health problems is **overweight**. Severe overweight or obesity is a key factor in the development of many chronic diseases, including heart and respiratory disease, Type 2 diabetes, hypertension, osteoarthritis and some types of cancer - all of which can lead to **premature death**. Research also indicates that the health risks of excessive body fat can be correlated with relatively small increases in body weight. The World Health Organisation’s MONICA² project examined global obesity and shows an increase in obesity ranging from 10 to 40% in the past ten years in European countries. Among these serious diseases, **Type 2 diabetes** is the one most clearly correlated with obesity. The risk of developing the disease rises sharply with body mass index³.

In response to concern on obesity the Directorate General Health and Consumer Protection of the European Commission (DG SANCO) has launched a Platform on

² WHO MONICA Project, Risk factors. International Journal of Epidemiology, 1989. 18 (Suppl 1): p. S46-S55. <http://www.ktl.fi/monica/>

³ Body mass index (BMI) is a mathematical formula to assess relative body weight. It is calculated as weight in kilograms divided by the square of the height in metres (kg/m²). A person with a BMI above 30 is considered obese, while over 25 is overweight.

Diet, Physical Activity and Health⁴ to deepen common understanding of the challenge and provide concrete action that can reverse current trends.

In parallel, and in contrast, to the issue of obesity interest in vegetarian food has been growing for many years and more recently 'organic' food has made a major impact on the food market. Together with foods for people with specific nutritional requirements (i.e. diabetics, celiac disease or specific food allergy) this has prompted much innovation by the food industry in adapting or "inventing" novel food products for new market requirements and consumer demand.

Economic and social issues should also be considered. The cost of fruit and vegetables, for instance, has increased dramatically in the last 20-30 years and this is an additional factor limiting the use of these foods. In the past, poorer people benefited from a healthy diet, mainly based on vegetables. Today poorer people purchase relatively fewer vegetables.

The involvement of consumers in the development of new food products is increasingly important to ensure market acceptability. With research and production costs for new foods growing it is clear that any new product must be tested with consumers – and if necessary adjusted – before launching into the market and preferably as early as possible in the development process.

For example, a European project to develop new enzyme-based products that can improve sensory characteristics of food showed that consumer acceptance was positively enhanced by tasting the final product! Such direct experience also promoted positive attitudes towards the use of modern technology in food production in general.

Striking the right balance

Because of the immense diversity in the composition of foods and the broad range of needs for balanced nutrition, no single food can supply all the essential nutrients. Moreover, it is difficult to classify foods as "bad" or "good". Therefore, one of the fundamental principles of healthy eating is **variety: the need to consume a broad range of foods on a regular basis**. The key is to stick to a balanced diet that adequately supplies our nutritional requirements and to ensure that our lifestyles provide us with the opportunity to take appropriate exercise.

In Europe over the past 30 years, average daily energy intake has risen by about 300 kilocalories to 3 400 kcal. At the same time, our lifestyles have become more sedentary and the collective increase in energy intake has moved inexorably onto our collective waists.

⁴ http://ec.europa.eu/health/ph_determinants/life_style/nutrition/platform/platform_en.htm

Consumer Factors – How Do We Choose?

Food consumption is a repetitive behaviour, which is influenced by a number of product- and consumer-related factors. These themselves are context-dependent and in dynamic interaction with each other. Some of these factors are **habitual or subconscious** and we are not routinely aware of them. Yet they have a strong influence on our eating habits.

Above all, food is a fuel for life. But it is also a medium through which individuals and groups express their **cultural values and social status**. The way in which European citizens relate to their food, local customs and cultural significance can be as varied as the food itself.

This means that research elements from both the social and natural sciences need to be fully integrated into the consumer science base to address issues in the food sector that are likely to impact on the quality of life of European citizens.

Why choice matters

Nowadays, people are genuinely concerned about the impact of food and diet on their health. Nutritional and medical research provides continual new evidence on the role of food in health.

This research also produces information that can lead to the development of new products with direct health benefits for consumers. However, the impact of these scientific advances will be minor unless this new knowledge is translated into healthy dietary habits and food choices by consumers.

What needs to be developed is a **scientific basis for guiding consumers' food choices towards more health-promoting eating habits** and the **integration of consumer needs and concerns into new food product development**. But above all, the public must have confidence in those institutions that deliver the messages to them as well as the content

itself. Citizens must feel able to accept and act on these messages. They do not want to be told what to eat or what not to eat; they need to be **empowered to choose**. Direct experience by consumers of new or novel food or food ingredients can have a clear positive effect on their attitudes to the acceptability of specific products. In other cases, the identification of the best vehicle to convey healthy food habits is a crucial issue. Older people, for instance, do not trust the same people for advice on food as the average consumer, however many of them would first take advice from their doctor and then from their family. This same European research also highlighted the issues of loss of sensory perception, such as taste, and social factors, such as tiredness and loneliness, associated with aging that impact on nutrition for older people. These and other social factors can cause older people to lose motivation in preparing and consuming meals.

Another European-funded study examined how the social life of many older people revolves around food but that they often do not get the food they want or need. Food and meal providers assume they know what older people want and fail to ask them directly. The research highlighted the complex social food network that contributes hugely to the health, independence and quality of life of the older generation.



Consumers also want to be reassured that the food they are choosing is **safe** to eat. Recent food scares in Europe triggered by Bovine Spongiform Encephalopathy (BSE) in meat, dioxin-contaminated chicken and feed, salmonella in eggs, or E-coli poisoning have made consumers far more concerned about health and hygiene in the food industry. Even a few incidents like these have dented the public's confidence not only in regulatory institutions, but also in the European food industry, and its associated science base. And they tend to have a 'knock-on' effect of hindering the delivery of effective, science-based messages on food and health to the public.

Developing effective risk communication about all matters associated with food safety is a priority. The scope must include chronic risks (such as poor domestic food-hygiene practices) as well as effective crisis management. In order to win back public confidence, it is essential that people are able to participate in the decision-making framework associated with food production and safety regulation. The implementation of important pieces of legislation, such as food labelling or the nutrition and health claims, may be easier at the industrial and policy level if consumers are consulted as early as possible in the legislative process. For instance, the size and type of information contained on food labels are issues that need further investigation.

Diverse drivers for consumer choice

So what drives consumer choice? **Hunger** is the clear primary driver. However, what we choose to eat, particularly in a day and age when food is abundantly available 365 days a year, is not determined solely by physiological or nutritional needs.

According to the European Food Information Council (EUFIC)⁵, factors that influence food choice include:

- Biological determinants such as hunger and satiety, palatability of food, taste and other sensory aspects
- Economic determinants including cost, income and availability of foods

- Physical determinants such as ease of access to food, education, specific skills (particularly cooking) and time constraints
- Social determinants such as culture, family, peer-group pressures and meal patterns
- Psychological determinants such as mood, stress and guilt, and
- Attitudes, beliefs and knowledge about food.

This non-exhaustive list shows the complexity of food choice in modern life. What is more, food choice factors are likely to change with age and will **vary considerably from one individual or group to another**. This means that any understanding or intervention derived from the study of one population group can only be applied with caution to other groups.

However in contrast European research has shown that common beliefs exist across the continent. For example, what sets organic consumers apart from non-organic is not related to age, gender, education or income, but correlated with what they thought and felt about organic food and their belief in its potential benefits such as improved taste, being more 'natural', contributing to a longer, healthier life and benefits for society and the environment. The study showed that if a consumer believes in the benefits of organic food, then price is not necessarily a barrier to purchase although availability is often an issue.

In areas of both nutrition and food safety, understanding of consumers' attitudes is far from complete. A better idea about how people perceive their diets and how they regard various communication channels for information on food is an essential ingredient of any healthy eating initiative.

Methods used in Consumer Science

Consumer science can be defined as the study of providing for the well-being of individuals and households in the context of how they are **influenced** by institutions and communities. It is by its very nature, **multi-discipli-**

⁵ EUFIC Review No. 17, April 2005

nary, drawing from fields such as economics, sociology, psychology, law and business. **Consumer behaviour, household finance** and **consumer protection** are major areas of consumer science. Consumer behaviour is the study of how people buy, what they buy, when they buy and why they buy.

A wide variety of **methods** are used in consumer science. Many of the techniques are shared or originate from the methodologies developed for commercial market research. Four general categories of research design can be described:

Qualitative research used for initial exploration of an issue. This will use a small sample of consumers that may not or cannot be statistically representative of the general population. Examples of techniques in this category include focus-group interviews involving a small group of consumers in a single discussion or in-depth interviews with a series of individual consumers.

Quantitative research from which more general conclusions can be drawn and which can be used to test specific hypotheses. This uses random sampling techniques and a large number of subjects to validate inference of results from the research sample on to the general population. Examples of this type of technique include the use of questionnaires and surveys.

Observational techniques in which researchers observe consumers, or other social phenomena, on the ground in natural situations. The observations may be cross-sectional (a number of observations made with different subjects at any one time) or longitudinal (a number of observations over a certain period).

Experimental techniques in which a semi-artificial environment is used to attempt to control confounding factors. In the context of consumer science and food, this type of experimental set-up is often used to evaluate sensory attributes of food, including taste and texture, or in the commercial context to assess products in development.

The methods are often used in combination during an experimental project. For example, background research may be conducted initially on an issue followed by focus-group sessions to explore possible consumer responses. The information gained from the focus group (or groups) could then be used to design the questionnaire to be used in a wider survey. In most cases, the use of two or more techniques allows better identification of the most appropriate approach for a specific research challenge.

Community Consumer Research

Research on consumer behaviour and attitudes, assessments of consumer confidence and strategies to build trust have played a prominent part in past, current and future EU Research Framework Programmes (FPs).

FP5 saw the European Commission contribute around €264 million between 1998 and 2002 under the Quality of Life Programme to research projects focusing specifically on nutrition, food technology and food safety.

In FP6, the Food Quality and Safety priority had a budget of around €750 million for the period 2002-2006 and one of its primary aims was to clarify the links between food and health. The programme provided support to a wide range of consumer science initiatives, which were primarily incorporated in large projects such as Integrated Projects.

Under the Seventh Framework Programme (2007-2013), the "Fork to Farm: food (including seafood), health and well-being" activity within the Food, Agriculture and Fisheries, and Biotechnology theme includes further research calls on understanding consumer behaviour. The consumer and thus societal needs will constitute the driving force of this FP7 activity. This is seen as a major factor in the competitiveness of the food industry and the impact of food on the health and well-being of the European citizen. The focus will be on consumer perception and attitudes towards food, understanding societal trends, and identifying determinants of food choice and consumer access to food.

Consumer choice and policy-making

Consumer science

Understanding consumer choice through consumer science is an essential basis for any **policy-making** on diet and nutrition. It can also make a major contribution to the well-being and healthy ageing of European citizens. And it is of paramount importance in any dialogue with the public to boost **consumer confidence** in the European food system.

The choice that the individual consumer makes on a daily basis will be the final arbiter of policy success or failure in this vital area, with implications that are both economic and social.

In a bid to make the food industry more consumer-oriented and strengthen consumer involvement in the production of healthy food, the European Technology Platform 'Food for Life' was set up in 2005 under the umbrella of the Confederation of Food and Drink Industries of the EU (CIAA). This initiative, bringing together representatives from universities, large companies, small businesses, food research centres and key actors in the food chain, responds to a clear policy message that food produced today must **meet consumers' expectations** as well as environmental, health and competitiveness objectives.

Communication channels for public health messages

There are many potential communication channels for public health messages. The plethora of potential routes and the various, often conflicting, messages that they convey to the public can even confuse people. So it is important to get the right message across.

Interestingly, recent research has found that the general public has more faith in consumer organisations and authorities than food-processing companies. When asked about their level of trust in various institutional players in the case of a food scare, consumers rarely believed they were told the whole truth. Few respondents to a pan-European survey conducted under FP5 said they would trust the food-processing industry to tell the truth about a food scare with a similar level of trust attributed to information

from supermarket chains and only slightly more for farmers. The highest levels of **trust** were placed in consumer organisations, food experts and governmental bodies and there were similar scores across all six nations involved in the research.

In a parallel study of consumer-confidence factors during a food crisis scenario, the relatively unsophisticated 'rules of thumb' applied to personal concepts on food safety were revealed. This survey confirmed that food safety is generally considered to be 'extremely important' by European citizens and that the most trusted information sources across all the countries surveyed were doctors and other health authorities, national food safety authorities, university scientists and consumer organisations. The critical need for risk managers to cultivate a trust relationship with citizens in advance of any crisis was highlighted.

Many of the scientific issues at stake in the food sector are so complex that the questions raised can only be answered via cooperative research and shared expertise of the kind encouraged by the Research Framework Programmes - like multinational projects and networking. But at the end of the day, 'good scientific research' is not enough on its own. To actually raise food safety standards and lift consumer confidence, the research findings must be effectively **translated into coherent policy measures**. They must also be backed up by sufficiently **open communication** to get through to the final customer - the consumers themselves. This means that research programmes and projects should not just be designed for a small scientific community, but should be user-friendly, from the preparatory stage right through to open access to their results.

The role of consumer protection groups

The EU's "fork to farm" R&D approach takes into account the demands and feedback from consumers right along the food chain. It gives consumers a chance to have their views taken into account before the food reaches their plates, rather than after the event. Policy-making requires the **participation of all stakeholders**.

This is why the Commission wants consumer groups and individual citizens to help to further develop EU consumer protection policy and improve all European policies that concern them.

Two European organisations receive Community funding to help them to carry out their work - the European Consumers' Organisation (BEUC) and the European Association for the Coordination of Consumer Representation in Standardisation (ANEC). BEUC involves some 40 independent national consumer organisations across Europe and its member organisations make the voice of the European citizen heard in the European Institutions, whilst ANEC is the European consumer's voice in standardisation and certification.

Other organisations that work to promote consumer interests at EU level are the Confederation of Family Organisations in the European Union (COFACE) and the European Community of Consumer Cooperatives (EUROCOOP). Specific groups may also have their own representatives and one example is the AGE Platform, which aims to promote issues that affect older people in the European Union.

The close involvement of consumer organisations and representatives in EU policies is a key element of producing better and more effective consumer protection regulation. It is one of the three key objectives of the EU Consumer Policy Strategy 2002-2006⁶.

Research inputs to policy-making

Consumer scientists' findings can provide valuable **input** for both public health and commercial policies on food and nutrition. Research results can act as a basis for strategies that induce behavioural change in society through improved and informed consumer choice. This **behavioural change**, in turn, would better serve long-term private, public and societal interests. Inputs to policy-making will, however, emerge from the entire consumer research cycle so taking on

board what the consumer wants is also a long-term and interactive process.



The research cycle generally includes innovative or improved methodologies for measuring and quantifying consumer behaviour. When combined with social and biological science findings, consumer science research can produce a much better **understanding of what people want**.

Involving consumers' organisations/representatives and consumers themselves in research work can really help find out what drives their reactions to food products and policy issues. It can also make a major contribution to drawing up strategies to induce behavioural change.

An example here would be research on developing intervention strategies to boost fruit and vegetable consumption amongst school children. The work has found a positive attitude towards fruit and vegetable intake with the children and is helping to ensure that they can access fruit and vegetables more easily. Early results show a boost in consumption.

In conclusion, not only in times of crisis, but also in the general management of food science, the involvement of consumers and the inclusion of consumer science should become a "natural" approach that can also be regarded as an example for other scientific disciplines.

⁶ http://europa.eu/eur-lex/en/com/cnc/2002/com2002_0208en01.pdf

More information

Consumer science

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FP5 Food, Nutrition & Health

http://ec.europa.eu/research/quality-of-life/ka1/home_en.htm

FP6 Food Quality and Safety

http://ec.europa.eu/research/fp6/index_en.cfm?p=5

Information on FP6 Food projects

<http://www.cordis.lu/food/>

FP7

http://cordis.europa.eu/fp7/cooperation/food_en.html

FP6 general information

http://ec.europa.eu/research/fp6/index_en.cfm?p=0

Overview of EU Food Policy

http://europa.eu/pol/food/overview_en.htm

The European Consumer Centres Network (ECC-Net)

http://ec.europa.eu/consumers/redress/ecc_network/index_en.htm

Consumer and Industry Organisations
European Technology Platform –
Food for Life
<http://etp.ciaa.be>

BEUC - European Consumers' Organisation
<http://www.beuc.org>

ANEC - European Association for the Co-ordination of
Consumer Representation in Standardisation
<http://www.anec.org>

CIAA - Confederation of the Food and Drink Industries
of the EU
<http://www.ciaa.be>

COFACE - Confederation of Family Organisations in
the European Union
<http://www.coface-eu.org>

EUROCOOP - European Community of Consumer
Cooperatives
<http://www.eurocoop.org>

AGE Platform – The European Older People's Platform
<http://www.age-platform.org/>

EUFIC – The European Food Information Council
<http://www.eufic.org>

ILSI Europe – International Life Sciences Institute
(Europe)
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This publication produced by the Directorate General Research (DG Research) of the European Commission brings together some project results in the field of food consumer science. Understanding consumer choice through consumer science is an essential basis for any policy-making on diet and nutrition. It can also make a major contribution to the well-being and healthy ageing of European citizens. This publication might contribute to increase awareness on the importance of consumer's role in the food area, providing examples of EU-funded projects to scientists and other interested people not yet familiar with this discipline.



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