

## FEATURING SUSTAINABILITY: A REVIEW OF DIFFERENT TYPES OF DIETARY GUIDANCE FOR CONSUMERS

Suzanne Piscopo PhD  
University of Malta, Malta  
[suzanne.piscopo@um.edu.mt](mailto:suzanne.piscopo@um.edu.mt)

**Abstract:** In recent years there has been growing attention to sustainable production and consumption also when it comes to food. The idea that one's dietary choices have an impact not only on personal health and wellbeing, but also on the natural environment and the producers of the food is being emphasised. Yet, adherence to any guidance provided to consumers is influenced by the criteria they use to make their consumption choices, as well as the value they award to different qualities of the food. Given the emerging sustainability concerns, consumers are being challenged to reframe this quality valuation to consider both internalities of the food, such as flavour and appearance, as well as externalities of production and consumption, such as harm to human health, socioeconomic impact, as well as environmental damage, promotion of animal welfare, biodiversity and cultural food traditions. This paper will review three different examples of guidance issued in the past few years; namely, the Swedish National Food Administration's *Environmentally Effective Food Choices* guidelines, the German Council for Sustainable Development's *Sustainable Shopping Basket* guide, and the Barilla Centre for Food and Nutrition's *Double Pyramid* Common and specific features will be identified with a view to discussing their implications for concepts, and skills taught by Home Economists.

**Keywords:** sustainability, consumption, food, dietary guidance, food pyramid, Home Economics.

### Introduction

One can safely say that in recent years sustainable production and consumption have been a main focus of discussions regarding resource usage at local, national, regional and global level. (Global Research Forum..., 2012; Starke, 2012; The Future we Want, 2012; Communication from the Commission..., 2008)

Food has been one resource which has received much attention due to its fundamental role in maintaining life, but also because of the various inter-relationships with other resources and their impact on human and environmental wellbeing. (Moomaw, Griffin, 2012; Living Planet Report..., 2012; Macdiarmid, Kyle, 2011; Starke, 2011; Looking Back, Looking Forward..., 2011; European Food..., 2010; McMichael, Powles, 2007; Ministry of Agriculture, Food and Consumer Affairs Sweden, 2006) According to a recent European Commission (EC) report:

Between now and 2050, growth in global population and changing diets in emerging countries are projected to bring about a 70% increase in food demand as an average of the different possible scenarios analyzed. Simultaneously, depletion of fossil hydrocarbons will increase the demand for biofuels and industrial materials, which may compete with food for biomass. At the same time, natural resources are being depleted and climate change is pressing the agenda. (Sustainable Food Consumption..., 2011, 5)

Governments, civil society, industry and consumers themselves are not oblivious to this scenario. International bodies and governments are working on different food, agricultural and energy policies to address issues related to food production, consumption, wastage and scarcities. (Environmental Audit Committee..., 2012; Energy-Smart Food..., 2011; Guidelines for a Healthy Diet..., 2011; Reisch, Lorek, 2011; Recipe for Success..., 2009) Institutes and NGOs are developing campaigns to lobby for sustainable food policies. (Submission to the Public Consultation..., 2012; Resetting the Table..., 2011; Slow Food, 2013; Projects & Campaigns, 2013; Think Twice..., 2006) Food industry is looking at its supply and distribution chains, exploring sourcing ingredients and processing, packaging and delivering its end products in a more sustainable manner, whilst also reformulating products with sustainability principles in mind. (Environmental Sustainability..., 2012) Depending on their personality, socio-economic circumstances and access to food and on the impact of the mass and social media on their food choices, consumers may be more or less aware and more or less responsible

with respect to the sustainability of their food consumption choices. (Barilla Centre, 2012; Verain, Bartels, 2012)

A comprehensive definition of the term 'sustainable diet' was proposed in 2010 during a symposium sponsored by FAO and Biodiversity International where it was stated that:

Sustainable diets are diets which have a low impact on the environment, contributing to food and nutritional security as well as to a healthy life for current and future generations. Sustainable diets contribute to the protection and respect for biodiversity and ecosystems, are culturally acceptable, economically fair and accessible, adequate, secure and healthy from a nutritional viewpoint and, at the same time, optimize natural and human resources. (Burlingame, Dernini, 2010, 7)

This definition highlighted that food production and consumption, dietary requirements and nutritional recommendations are interdependent, and that the health of human beings cannot and should not be divorced from the health of ecosystems.

Such assertion was not new, however. A paper by Gussow and Clancy, published in 1986 and titled 'Dietary Guidelines for Sustainability', argued for the importance of choosing diets with a regard not only to health, but also to the much broader sustainability. Already at this point, the authors were promoting the concepts of buying locally and seasonally and seeking products which were less energy intensive in their cultivation, production and transportation. They felt that nutritionists and nutrition educators had a crucial role to play in teaching individuals to perceive foods more than just sources of nutrients, to appreciate the various impacts of their food choices on themselves, others and the natural environment, and to take action to adopt a more sustainable diet.

However, how people make food choices and what they eventually eat are very complex processes. The multitude of factors involved in these processes has often been presented using different socio-ecological models, describing the interplay of these factors at different levels of the environment. (Fitzgerald, Spaccarotella, 2009; Robinson, 2008; Story, Kaphingst, 2008; Piscopo, 2004) The criteria consumers use to make their consumption choices, as well as the value consumers award to different qualities of the food are based, amongst others, on personal preferences, experiences and goals; perceived or actual needs and resources available to meet these needs; as well as a suite of social, cultural and policy-related factors.

When it comes to consideration of sustainability, one can take the example of ecological and organic food consumption behaviours. Physical availability, price, health value, environmental impact, social norms and self-image and perceived locus of control with respect to being a responsible citizen often come into play to differing degrees when individuals are deciding whether to purchase ecological or organic foods. (Vanhonacker, Van Loo, 2012; Tobler, Visschers, 2011; Makatouni, 2002)

The challenge to anybody who is trying to guide consumers to make informed sustainable dietary choices is not only to provide them with clear, understandable, applicable and credible information and tips, but to somehow influence their motivation and willingness to make such choices. The quality criteria consumers use will need to be reframed in such a way that they considers both internalities of the food, such as flavour and appearance, as well as externalities of production and consumption, such as harm to human health, socioeconomic impact and environmental damage, as well as protection or promotion of animal welfare, biodiversity, cultural food traditions and conviviality.

Conscious of this ever-changing scenario, with constantly emerging research about sustainability, food production issues and consumer behaviour, several projects and websites are being developed by research institutions and NGOs to assist consumers in making sustainable food choices and adopting sustainable diets. (Making Sustainable..., 2010; Eat well and save..., 2007; Decoding food labels, 2008; Grace Communications, 2013; Love Food, 2013; Slow Food, 2013; Welcome to Livewell..., 2011) However, dietary guidance for consumers by state authorities or by the food industry, reflecting a holistic perspective of sustainability, is still somewhat lacking. This despite the fact that the Giessen Declaration suggested an expanded focus to the application of nutrition science, harnessing an integrated systems approach and incorporating environmental and social dimensions:

The human species has now moved from a time in history when the science of nutrition, and food and nutrition policy, has been principally concerned with personal and population health and with the exploitation, production and consumption of food and associated resources, to a new period. Now all relevant sciences, including that of nutrition, should and will be principally concerned with the cultivation, conservation and sustenance of human, living and physical resources all together; and so with the health of the biosphere. (Giessen Declaration, 2005, 784)

Given the above background, this paper will now describe examples of guidance for consumers which have tried to marry different principles of sustainable consumption and present them in a way to sensitise and inform consumers on the various consequences of their food choices, and/or offer simple, practical and pictorial messages for adopting more sustainable diets.

### Methodology

Three examples of consumer guidance will be described. Two are from state entities and one is from the food manufacturing industry. The examples were chosen arbitrarily, mainly based on their being innovators in the area, their clear use of scientific evidence to substantiate their messages, or their having recently publicised the sustainability aspect of their graphical guidance tool. It is to be noted that there are surely other similar initiatives in place (Mithril, Dragsted, 2012; Marks and Spencer, 2013). This paper merely aims to present a selection which will introduce the diversity of guidance available.

#### Example 1

The first document to be discussed is the Swedish National Food Administration and Environmental Protection Agency's (The National Food Administration's..., 2009) *Environmentally Effective Food Choices* draft guidelines. These guidelines were written up and presented to the European Commission in 2009 for consideration and inspiration within other EU countries. Despite being withdrawn at the EU level, the guidelines are still promoted nationally by the Swedish National Food Agency (Eco-smart food..., 2012) as *Eco-smart food choices*.

The overall aim of these guidelines is to outline the health value, recommended daily intake and consequences of over-consumption of different food groups, as well as the environmental impact of consuming foods within these food groups, looking at effect on climate change footprint, toxicity of the environment, variety in agricultural landscape, balance in marine environment and biodiversity. Foods covered include vegetables and leguminous plants; fruits and berries; potatoes, cereals and rice; meat (beef, lamb, pork and chicken); fish and shellfish; cooking fat; water. The main messages in relation to each food group are presented in Figure 1.

<ul style="list-style-type: none"> <li>• Eat seasonal, locally-produced vegetables, fruits and berries, preferably cultivated organically. Eat more beans, lentils and peas, replacing some meat intake. Choose vegetables which can be stored for long periods and are locally produced all year round. Store fruits and vegetables properly and only buy what is required.</li> </ul>
<ul style="list-style-type: none"> <li>• Try to choose locally produced bread, grains, grain flakes and pasta, preferably organic. Limit rice consumption (due to methane released from water-soaked rice fields). Substitute by oats or wheatgerm.</li> </ul>
<ul style="list-style-type: none"> <li>• Eat meat less often and in smaller quantities, including substituting one or two meat dishes a week by plant-based meals and decreasing the quantity of meat on the plate. Eat locally-produced meat, preferably from animals which have grazed on natural grassland and reared organically.</li> </ul>
<ul style="list-style-type: none"> <li>• Eat fish from stable/strong stocks and which have been caught wild or farmed sustainably. Look for eco-labels to help you choose. Vary the fish and shellfish you consume and try new recipes.</li> </ul>
Opt for rapeseed or olive oil. Avoid palm oil.
Avoid bottled water and softdrinks.

Figure 1. The Swedish *Environmentally Effective Food Choices* guidelines: Key messages.

The report highlights that making food choices which are healthy and making food choices which are good for the environment are often compatible. For each food group, apart from the nutritional value and health benefits or otherwise, the different types of environmental impact are explained in detailed yet simple terms. Thus, it is very clear to consumers why certain foods are recommended and others are not from the environmental perspective, and they are encouraged also to read food labels when available and to ask about the source of food when it is not amply evident. One lacuna of the guidelines is that they do not direct the Swedish consumers' attention to the national or global social and economic dimension of their food choices.

### Example 2

The Sustainable Shopping Basket guide of the German Council for Sustainable Development (The Sustainable Shopping..., 2011) aims to help consumers appreciate that one does have a choice when it comes to making sustainable purchases. It underlines how this is feasible by reframing personal values, becoming knowledgeable about products, looking for guiding labels and seals and planning purchases. The Guide's goals can be seen as a) assisting consumers in their daily purchase decisions; b) encouraging consumers to bring their influence to bear on producers and retailers by demanding sustainable products; and c) encouraging consumers to normalise the growing trend of adopting a sustainable lifestyle.

The section on food in the Guide addresses sustainability quite comprehensively, looking at the nutritional value of food, environment-friendly credentials, as well as support for fair trade and the local economy. Specifically it promotes consumption of a plant-based diet (in favour of a diet based heavily on animal products), coupled with a low consumption of fatty foods, sweets and alcohol. It also promotes eating local and seasonal food and being selective when buying fish. Choosing certified organic foods and fair trade foods is also encouraged, as is preference for recyclable glass and PET bottles. The main messages in the Guide are summarised in Figure 2.

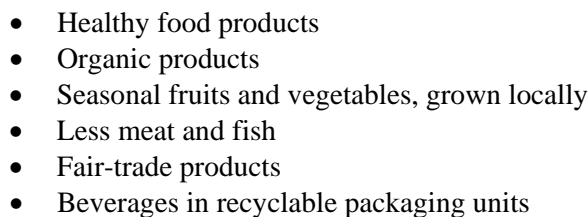
- 
- Healthy food products
  - Organic products
  - Seasonal fruits and vegetables, grown locally
  - Less meat and fish
  - Fair-trade products
  - Beverages in recyclable packaging units

Figure 2. Recommended main food contents of the *Sustainable Shopping Basket*.

The Guide acknowledges that sustainable products may sometimes be slightly more expensive. It describes the added value of such products as follows:

A product that is safe for the environment and has been produced under fair conditions costs more than one that has been produced as cheaply as possible. But the fair product offers added value for everyone concerned. Producers and suppliers who pay more attention to their products and employees deserve to expect a reasonable price in return. Otherwise, a sustainable economy has no chance of survival. (The Sustainable Shopping..., 2011, 8)

The thread of this argument seems to be that consumers may need to come to terms with the fact that in current economic and ecological conditions, one might have to pay a monetary price for ensuring justice and dignity among humans and stewardship of the natural environment. Indeed, readers of the Guide are encouraged to critically analyse their own purchasing priorities and goals in light of sustainability principles and establish a framework of values to suit these. The tone and approach used in the Guide clearly aims to empower consumers to take action, in their own way and at their own pace, towards sustainable consumption.

### Example 3

The Barilla Centre for Food and Nutrition (BCFN) is an institution which was established to study food using a multidisciplinary approach. Its vision is stated as joining science, politics, business and society to ensure the sustainability of humankind and the planet, as well as to "popularize sustainable eating habits." (Barilla Centre, 2013; Double Pyramid..., 2012)

One of the outcomes of the BCFN vision is the *Double Pyramid*, first publicised in 2010. (Barilla Centre, 2012, 55-56) The graphic comprises a food pyramid juxtaposed alongside an inverted environmental pyramid (Figure 3). It is presented as a tool for showing that paying attention to food choices is beneficial not only to human health, but also to planetary health. In other words, foods of which a high intake is recommended due to their health value tend to be the foods which are more environment-friendly (or have low negative environmental impact) and vice-versa. Thus, plant origin foods are towards the bottom and middle of the Food Pyramid, whereas animal origin and more high-fat high-sugar foods tend to be towards the upper level and top vertex. In contrast, most of the animal origin and more high-fat high-sugar foods are at the bottom and middle of the inverted Environmental Pyramid, whereas plant origin and less processed foods are towards the upper level and top vertex.

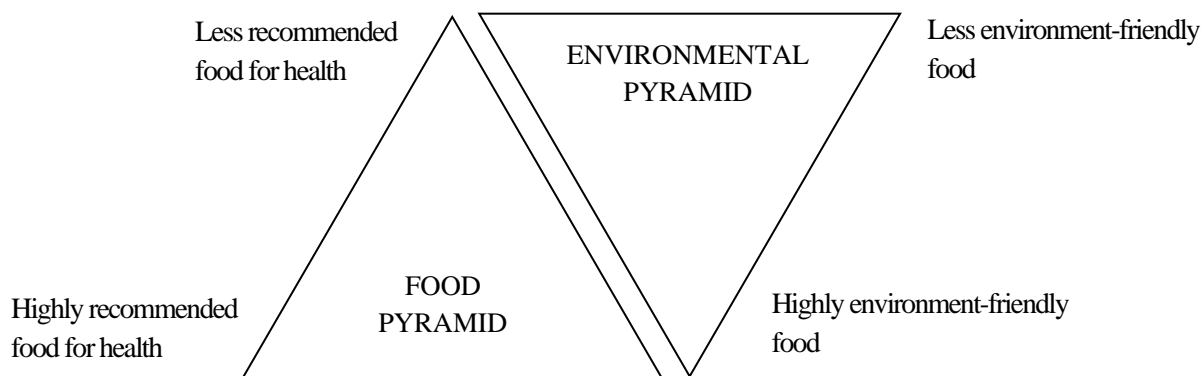


Figure 3. Basic concept of the Barilla Food and Environmental Double Pyramid (adapted from Barilla Centre, 55-56).

The latest 2012 report and related graphic (there is now also a version to meet the nutritional needs of children (Barilla Centre, 2012, 57-58) are based on a wealth of data and research studies collected from around the world. These data and studies “underline the existing link between the production and consumption of food, dietary requirements, and nutritional recommendations, while at the same time confirming the concept that the health of human beings cannot be disconnected from the health of ecosystems”. (Barilla Centre, 2012, 13)

The BCFN report refers to a multitude of food guides or models, as well as nutrition and health-related studies which have consistently suggested that the bulk of our diet should be based on foods of plant origin, with foods of animal origin only being consumed in moderation. The report also describes the environmental impacts of the lifecycle of a selection of foods, looking at cultivation, processing, packaging, transportation and cooking. It assesses the Ecological Footprint (measuring the planet’s ability and hectares required to regenerate resources used), the Carbon Footprint (measuring greenhouse gas emissions) and the Water Footprint (measuring use of water resources). So, for example, when comparing the environmental impact assessment for 1 kilogram meat versus 1 kilogram tomatoes, it is very clear that meat has a greater negative impact than tomatoes (109 vs. 1.5 global m<sup>2</sup>; 26kg vs. 1.1kg CO<sub>2</sub> eq; 15,500 vs. 214 litres of water). The authors conclude that:

The comparison between the classic Food Pyramid, built on the basis of the nutritional properties of foods, and the new Environmental Pyramid, in which each food is positioned on the basis of its environmental impact, shows how the foods whose more frequent consumption is suggested are also the foods which better preserve the health of the planet. (Barilla Centre, 2012, 13)

Given the concern often raised regarding the increased expense to the consumer and families of eating a sustainable diet, the BCFN report compares the weekly cost (based on 2 regions in Italy) of four different menus: a meat-based menu (meat at least once daily), meat and fish-based menu (meat or fish at least once daily), vegetarian menu (plant-based, meat and fish excluded but milk, cheese, eggs etc. included) and a sustainable menu (plant-based, meat and fish on two days a week). The latter diet is the second cheapest and the second lowest in Ecological footprint (Table 1).

Table 1

**Weekly Cost and Ecological Footprint in Italy of Four Nutritionally-Balanced Diets**

Menu	Cost (EURO/week)		Ecological Footprint (global m <sup>2</sup> /week)
	Milan	Palermo	
Vegetarian	48	44	144
Sustainable	50	44	158
Meat-Based	53	46	187
Meat And Fish-Based	54	47	184

(Adapted from Barilla Centre, 2012, 73)

Of interest is that the 2012 BCFN report demonstrates that the traditional Mediterranean Diet, as also described originally by Ancel Keys and collaborators (Keys, Aravanis, 1980) and more recently in various scientific studies (Burlingame, Dernini, 2011; Medina, 2011), can be considered the blueprint for a sustainable diet which is rich in biodiversity and also low in cost. The authors assert that the traditional Mediterranean diet “is the cheapest, as long as the foods are selected judiciously, preferring those which have a low cost and high nutritional value, such as pasta, legumes, certain types of vegetables, oil, and dried fruit. In particular, low-fat dairy products and eggs are the least expensive source of protein.” (Barilla Centre, 2012, 14) Thus, the authors strongly recommend that the Mediterranean diet is promoted widely as a valuable route towards a sustainable diet. (Hassan-Wassef, 2012)

### Results and discussion

The United Nations 10-Year Framework of Programmes on Sustainable Consumption and Production recommends “integrating education for sustainable consumption and production in formal and non-formal education programmes, as appropriate.” (Letter dated..., 2012, 44) Similarly, the European Food Sustainable Consumption and Production Round Table (Non-environmental aspects..., 2010, 13) recently stated that public authorities, food chain operators, civil society and the scientific community should join forces to enhance environmental literacy by using a variety of appropriate communication tools to transfer relevant information to different population groups.

However, transfer of information has its limitations, especially when it is not translated into action. True education for sustainable consumption involves transmitting knowledge, fostering attitudes and nurturing skills which help enable individuals to manage their own life, while also contributing to the stewardship of the global society’s collective life (Here and Now..., 2010). Education which melds scientific knowledge with a values-based emotional commitment is necessary to move from merely understanding sustainable consumption and production to taking action to achieve sustainability. (Dahl, 2012; Schröder, McKinnon, 2007) A recent call for a revamped dietary education is very much in line with this sentiment:

Dietary Education is thus expected to convey a number of messages that promote sustainable diets and the ethics of food consumption as applicable and relevant to each country and location and, more importantly, to raise awareness about current environmental issues such as carbon and water footprints. (Hassan-Wassef, 2012, 410)

As evident from the three initiatives presented above, different entities are trying to ‘educate’ individuals to eat more sustainably. There are many messages which are common; yet there are also instances where messages are more specific or where some aspects of food and sustainability are given greater emphasis.

From the perspective of the impact of food on human health, there is a clear message to favour a plant-based diet which incorporates a variety of foods of plant origin, ranging from grains, to vegetables, pulses, fruit, nuts and herbs and spices. Trying to frequently consume raw vegetables and fruit is also advised, as is opting for ‘whole’ varieties of grains.

If individuals choose to consume them, it is recommended that meat (including processed) and fish and seafood are each consumed only a few times a week and that portion sizes of meat are not large.

Another recommendation is to keep foods high in less healthy fats and/or sugars to a minimum. With respect to fluid intake, local tap water and local fresh fruit juices are promoted over bottled water and sweetened softdrinks.

Trying to opt for foods which have been cultivated or reared organically, are in season and are produced locally are messages which are linked to human, environmental, social and economic wellbeing impacts: such as, less use of artificial agro-chemicals, less use of fossil fuels, greater retention of nutrients, support for local food producers, support for traditional foods and promotion of variety in the local agricultural landscape.

The different guidance tools place heavy emphasis on the multiple environmental impacts of dietary choices. The consequences for land and water use (e.g. arising from plant cultivation, animal rearing or production of feed for animals), for raw material use (e.g. in the production of food packaging), for greenhouse gas emissions (e.g. arising from plant cultivation and animal rearing practices, transportation of food and feed, food processing and storage), for survival of species (e.g. linked to management of fish stocks, felling of rainforests), and for maintenance of a rich biodiversity (e.g. linked to fishing methods, cultivation of seasonal and year-round produce) are all mentioned and explained to different degrees. In this regard, consumers are encouraged to become familiar with and seek eco-friendly labelling, such as organically-farmed, non-GMO and sustainably-fished food certification, as well as recyclable packaging symbols, which can help facilitate sustainable food purchasing.

The economic aspects of consuming a sustainable diet are also referred to, primarily from the perspective of effect on the consumer's pocket, but also from the perspective of the producer – near or distant. Arguments and data are presented to show that often choosing foods or diets with higher sustainability credentials is not more expensive for the consumer. In some cases, where the cost is higher for particular products (e.g. organically farmed foods or fair trade products), consumers are encouraged to consider the benefits for human wellbeing, for protection of the natural environment, and for creation and maintenance of jobs or a decent living wage amongst others.

Directly related to cost to the consumer and more holistically 'cost' to use of global resources, is domestic food waste. Consumers are guided to follow the general rule that "nothing edible belongs in the trash." (The Sustainable Shopping..., 2011, 14) It is suggested that they pay attention to their own patterns of consumption and buy an appropriate amount of food in the appropriate frequency. It is also suggested that they adopt good storage practices and learn how to make safe and creative use of leftovers. Frugality, or avoidance of over-consumption, is also advised.

Many of the above messages and practices have been integral to the education provided by Home Economists as from the birth of the discipline. Due to advances in scientific research and technology and keeping in mind the socio-economic and cultural context of the populations one is working with, Home Economists may need to critically analyse the knowledge they are transmitting, the attitudes they are fostering, the skills they are nurturing and the pedagogy they are using and adapt them to suit the needs and lifestyles of their students or audiences.

Subjects such as composition of the diet, animal and plant protein foods, shopping for food, meal planning, use of leftovers, food labelling and factors influencing the diet may all benefit from greater consideration of other sustainability aspects additional to health. Individuals need to be prompted to question why they value foods the way they do and whether a revaluation is necessary. This will help increase awareness of the holistic impact of dietary choices and behaviours and possibly lead to more responsible consumers.

Greater hands-on practice in actual food shopping and food production will allow students and participants to apply their knowledge of sustainability principles to make reasoned choices, make the most efficient use of resources and be creative in producing a variety of dishes to suit different circumstances. It is critical that students and participants cost any dishes planned and/or produced and compare with each other. It is equally critical that they are exposed to and preferably produce a wide variety of foods and dishes, which feature as many as possible of the following characteristics: seasonal, local, organic and traditional.

On a public health, consumer or educational policymaking level, Home Economics professionals have the capacity to contribute to the development of dietary guidance which encompasses sustainability principles, yet which is meaningful, practical and can motivate towards long-term attitude and behaviour change.

## Conclusions

The three dietary guidance initiatives described above all have as a main goal enabling informed consumer choices with respect to food and sustainability. The different guidance, whether written or graphical or both, aim to primarily demonstrate the impact of personal food choices on individual, community and environmental wellbeing. Messages crafted strive to give direction to facilitate adopting sustainable diets.

Home Economists can be seen as major players in disseminating these messages to different population groups, such as in schools, places of work, homes for the elderly, retail outlets, via the mass and social media and even with policymakers. In their professional and vocational obligation as promoters of individual and family wellbeing, Home Economists should assist consumers to:

- understand what is meant by sustainable food choices and behaviours;
- value choosing and acting sustainably;
- critically assess their choices and behaviours and set goals to improve their sustainability profile within their means;
- advocate for a context which facilitates adopting sustainable food choices and behaviours by all citizens.

The end goal is for sustainable dietary consumption to become a social or behavioural norm, rather than a privilege for the knowledgeable or economically-able few. Home Economists can offer the practical knowledge to help this happen.

## Bibliography

1. Barilla Centre for Food and Nutrition. (2013). *Vision and Objectives*. [online] [08.1.13]. Available at <http://www.barillacfn.com/en/chi-siamo/visione-ed-obiettivi/>
2. Burlingame B., Dernini S. (Eds) (2010). Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research And Action. Proceedings of the International Scientific Symposium, *Biodiversity and Sustainable Diets United Against Hunger*, 3–5 November 2010, FAO Headquarters, Rome, Italy. [online] [08.12.12]. Available at <http://www.fao.org/docrep/016/i3004e/i3004e.pdf>
3. Burlingame B., Dernini S. (2011) Sustainable Diets: The Mediterranean Diet as an Example, *Public Health Nutrition*, Vol. 14(1A), pp. 2285–2287. DOI:10.1017/S1368980011002527
4. *Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions on the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan*. (2008). Commission of the European Communities. [online] [08.12.12]. Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0397:FIN:EN:PDF>
5. Dahl A.L. (2012). Values Education for Sustainable Consumption and Production: From Knowledge to Action. Paper presented at the *Global Research Forum on Sustainable Consumption and Production*, 13-15 June 2012, Rio de Janeiro, Brazil, p.1. [online] [08.12.12]. Available at [http://grfscp.files.wordpress.com/2012/05/dahlgrf\\_values\\_education\\_for\\_scp\\_rev.pdf](http://grfscp.files.wordpress.com/2012/05/dahlgrf_values_education_for_scp_rev.pdf)
6. *Decoding food labels* (2008). Earthwatch Institute. *Sustainability*. [online] [08.12.12]. Available at <http://www.earthwatch2.org/sustainability/decoding%20labels.htm>
7. *Double Pyramid 2012: Enabling Sustainable Food Choices* (2012). Barilla Centre for Food and Nutrition (BCFN), Parma. [online] [08.12.12]. Available at [http://www.barillacfn.com/wp-content/uploads/2012/10/pp\\_dp2012\\_eng.pdf](http://www.barillacfn.com/wp-content/uploads/2012/10/pp_dp2012_eng.pdf)
8. *Eat well and save the planet! A guide for consumers on how to eat greener, healthier and more ethical food* (2007). Sustain: The alliance for better food and farming. [online] [08.12.12]. Available at [http://www.sustainweb.org/pdf/SFG\\_Consumers.pdf](http://www.sustainweb.org/pdf/SFG_Consumers.pdf)



9. *Eco-smart food choices*. (2012). Swedish National Food Agency. Livsmedel Verket, Stockholm, Sweden. [online] [08.1.13]. Available at <http://www.slv.se/en-gb/Group1/Food-and-environment/Eco-smart-food-choices/>
10. *Energy-Smart Food for People and Climate*. Issue Paper (2011). FAO, Rome, Italy. [online] [08.12.12]. Available at <http://www.fao.org/docrep/014/i2454e/i2454e00.pdf>
11. *Environmental Audit Committee - Eleventh Report. Sustainable Food*. (2012). UK Parliament. [online] [08.12.12]. Available at <http://www.publications.parliament.uk/pa/cm201012/cmselect/cmenvaud/879/87902.htm>
12. *Environmental Sustainability Vision Towards 2030: Achievements, Challenges and Opportunities* (2012). FoodDrinkEurope, Brussels, Belgium. [online] [08.12.12]. Available at [http://www.fooddrinkeurope.eu/uploads/publications\\_documents/temp\\_file\\_FINAL\\_SustainabilityReport\\_LD\\_JULY\\_20121.pdf](http://www.fooddrinkeurope.eu/uploads/publications_documents/temp_file_FINAL_SustainabilityReport_LD_JULY_20121.pdf)
13. Fitzgerald N., Spaccarotella K. (2009). Barriers to a Healthy Lifestyle: From Individuals to Public Policy - An Ecological Perspective. *Journal of Extension*, Vol. 47(1). [online] [08.12.12]. Available at <http://www.joe.org/joe/2009february/a3.php>
14. Giessen Declaration. (2005). *Public Health Nutrition*, Vol. 8(6A), pp. 783–786. DOI: 10.1079/PHN2005768
15. Global Research Forum on Sustainable Consumption and Production. Proceedings of the *Global Research Forum on Sustainable Consumption and Production Workshop*, June 13-15, 2012, Rio de Janeiro, Brazil. [online] [08.12.12]. Available at <http://grfscp.wordpress.com/papers/>
16. Grace Communications Foundation. (2013). *Sustainable Table*. [online] [08.1.13]. Available at <http://www.sustainabletable.org/home.php>
17. *Guidelines for a Healthy Diet: The Ecological Perspective* (2011). Health Council of the Netherlands. [online] [08.12.12]. Available at <http://www.gezondheidsraad.nl/sites/default/files/201108E.pdf>
18. Gussow J.D., Clancy K.L. (1986). Dietary Guidelines for Sustainability. *Journal of Nutrition Education*, Vol. 18 (1) pp. 1-5.
19. Hassan-Wassef H. (2012). Redesigning Dietary Education, in F. Mombiela (Ed), *Mediterra: The Mediterranean Diet for Sustainable Regional Development*. International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM), Presses de Sciences Po, Paris, France, pp. 399-422. [online] [08.12.12]. Available at [http://www.ciheam.org/images/CIHEAM/PDFs/Publications/Mediterra/2012/vo/en/\\_Mediterra\\_2012\\_COMPLET\\_WEB\\_EN.pdf](http://www.ciheam.org/images/CIHEAM/PDFs/Publications/Mediterra/2012/vo/en/_Mediterra_2012_COMPLET_WEB_EN.pdf)
20. *Here and Now: Education for Sustainable Consumption. Recommendations and Guidelines* (2010). United Nations Environment programme (UNEP). Ministero Dell'ambiente Edellatuteladel Territorio Edel Mare, (The Environment Ministry), Italy. [online] [08.12.12]. Available at <http://www.unep.fr/scp/marrakech/taskforces/pdf/H&NMay2010.pdf>
21. Keys A., Aravanis C., Blackburn H., Buzina R., Djordjevic B.S., Dontas A.S., Fidanza F., Karvonen M.J., Kimura N., Menotti A., Mohacek I., Nedeljkovic S., Puddu V., Punsar S., Taylor H.L., Van Buchem F.S.P. (1980). *Seven Countries. A Multivariate Analysis of Death and Coronary Heart Disease*. Harvard University Press, Cambridge, MA and London
22. *Letter dated 18 June 2012 from the Permanent Representative of Brazil to the United Nations addressed to the Secretary-General of the United Nations Conference on Sustainable Development* (2012). Outcome of the conference: Rio+20 United Nations Conference on Sustainable Development. Rio de Janeiro, Brazil. [online] [08.12.12]. Available at [http://www.unep.fr/scp/pdf/10YFP\\_english.pdf](http://www.unep.fr/scp/pdf/10YFP_english.pdf)
23. *Living Planet Report 2012*. (2012). Summary. World Wildlife Fund (WWF), International, Gland, Switzerland. [online] [08.12.12]. Available at [http://awsassets.panda.org/downloads/lpr\\_2012\\_summary\\_booklet\\_final\\_120505\\_2\\_.pdf](http://awsassets.panda.org/downloads/lpr_2012_summary_booklet_final_120505_2_.pdf)
24. *Looking Back, Looking Forward. Sustainability and UK food policy 2000-2011*. (2011). Sustainable Development Commission (UK). P. 60. [online] [08.12.12]. Available at [http://www.sd-commission.org.uk/data/files/publications/FoodPolicy10\\_Report\\_final\\_w.pdf](http://www.sd-commission.org.uk/data/files/publications/FoodPolicy10_Report_final_w.pdf)
25. *Love food. Hate waste*. (2013). [online] [08.1.13]. Available at <http://england.lovefoodhatewaste.com/>

26. Macdiarmid J., Kyle J., Horgan G., Loe J., Fyfe C., Johnstone A., McNeill G. (2011). *Livewell: A Balance of Healthy and Sustainable Food Choices*. WWF - UK. [online] [08.12.12]. Available at [http://assets.wwf.org.uk/downloads/livewell\\_report\\_jan11.pdf](http://assets.wwf.org.uk/downloads/livewell_report_jan11.pdf)
27. Makatouni A. (2002). What Motivates Consumers to Buy Organic Food in the UK?: Results From a Qualitative Study. *British Food Journal*, Vol. 104 (3), pp.345 – 352. DOI: 10.1108/00070700210425769
28. *Making Sustainable Food Choices Easier* (2010). A Consumer Focused Approach to food Labels. *Which?* [online] [08.12.12]. Available at <http://www.which.co.uk/documents/pdf/making-sustainable-food-choices-easier-which-report-231317.pdf>
29. Marks and Spencer. (2013). *Plan A: Doing the right thing. What you can do.* [online] [08.1.13]. Available at <http://plana.marksandspencer.com/you-can-do>
30. McMichael A.J., Powles, J.W., Butler, C.D., Uauy, R. (2007). Food, Livestock Production, Energy, Climate Change, and Health. *The Lancet*, Vol. 370 (9594), pp. 1253 – 1263. DOI:10.1016/S0140-6736(07)61256-2
31. Medina F.X. (2011). Food Consumption and Civil Society: Mediterranean Diet as a Sustainable Resource for the Mediterranean Area. *Public Health Nutrition*, Vol. 14(12A), pp. 2346-9. DOI: <http://dx.doi.org/10.1017/S1368980011002618>
32. Mithril C., Dragsted L.O., Meyer C., Blauert E., Holt M.K., Astrup A. (2012). Guidelines for the New Nordic Diet. *Public Health Nutrition*. Vol. 15(10), pp. 1941-7. DOI: <http://dx.doi.org/10.1017/S136898001100351X>
33. Moomaw W., Griffin T, Kurczak K, Lomax J. (2012). *The Critical Role of Global Food Consumption Patterns in Achieving Sustainable Food Systems and Food for All, A UNEP Discussion Paper*, United Nations Environment Programme, Division of Technology, Industry and Economics, Paris, France. [online] [08.12.12]. Available at <http://fletcher.tufts.edu/CIERP/~media/Fletcher/Microsites/CIERP/Publications/2012/UNEP%20Global%20Food%20Consumption.pdf>
34. *Non-environmental aspects of sustainability - Working Group 4.* (2010). European Food Sustainable Consumption and Production Round Table [online] [08.12.12]. Available at [http://www.food-scp.eu/files/Non-Environmental\\_Aspects\\_of\\_Sustainability.pdf](http://www.food-scp.eu/files/Non-Environmental_Aspects_of_Sustainability.pdf)
35. Piscopo S. (2004). *Socio-Ecological Factors Influencing Food Choices and Behaviours of Maltese Primary Schoolchildren*. Doctoral thesis. University of Birmingham, Birmingham, England. [online] [08.12.12]. Available at <http://etheses.bham.ac.uk/861/1/Piscopo04PhD.pdf>
36. Projects & Campaigns (2013). Sustainweb. [online] [08.1.13]. Available at <http://www.sustainweb.org/#>
37. Reisch L.A., Lorek S., Bietz, S. (2011). *CORPUS Discussion Paper 2 on Policy Instruments for Sustainable Food Consumption*. [online] [08.12.12]. Available at <http://www.scp-knowledge.eu/sites/default/files/Reisch%20et%20al%202011%20Sustainable%20Food%20-%20Policies.pdf>
38. Robinson T. (2008). Applying the Socio-ecological Model to Improving Fruit and Vegetable Intake Among Low-Income African Americans. *Journal of Community Health*, Vol. 33, pp. 395–406. DOI 10.1007/s10900-008-9109-5 [online] [08.12.12]. Available at <http://unix.cc.wmich.edu/~lewisj/pdf/health.pdf>
39. *Recipe for Success: Scotland's National Food and Drink Policy.* (2009). The Scottish Government, Edinburgh, Scotland. [online] [08.12.12]. Available at <http://www.scotland.gov.uk/Resource/Doc/277346/0083283.pdf>
40. *Resetting the Table: A People's Food Policy for Canada* (2011). The People's Food Policy [online] [08.12.12] Available at [http://peoplesfoodpolicy.ca/files/pfpp-resetting-2011-lowres\\_1.pdf](http://peoplesfoodpolicy.ca/files/pfpp-resetting-2011-lowres_1.pdf)
41. Schröder M.J.A., McKinnon S. (2007). Learning Good Judgement: Young Europeans' Perceptions of Key Consumer Skills. *International Journal of Consumer Studies*, Vol. 31(2), pp. 152–159. DOI: 10.1111/j.1470-6431.2006.00584.x
42. *Submission to the Public Consultation on the Draft Appendix to the Australian Dietary Guidelines: The Dietary Guidelines Through an Environmental Lens* (2012). Institute for Sustainable Futures, University of Technology Sydney. [online] [08.12.12]. Available at <http://www.isf.uts.edu.au/pdfs/ISFsubmissionDietaryGuidelines.pdf>

43. *Sustainable Food Consumption and Production in a Resource-Constrained World* (2011). European Commission – Standing Committee on Agricultural Research (SCAR). The 3rd SCAR Foresight Exercise. [online] [08.12.12]. Available at [http://ec.europa.eu/research/agriculture/scar/pdf/scar\\_feg\\_ultimate\\_version.pdf](http://ec.europa.eu/research/agriculture/scar/pdf/scar_feg_ultimate_version.pdf)
44. Slow Food. (2013). *Slow Food Education* [online] [08.1.13]. Available at <http://www.slowfood.com/education/>
45. Starke L. (Ed). (2011). *State of the World 2011: Innovations that Nourish the Planet*. Worldwatch Institute, Washington, USA.
46. Starke, L. (Ed). (2012). *State of the World 2012: Moving Toward Sustainable Prosperity*. Worldwatch Institute, Washington, USA.
47. Story M., Kaphingst K.M., Robinson-O'Brien R., Glanz K. (2008). Creating Healthy Food and Eating Environments: Policy and Environmental Approaches. *Annual Review of Public Health*, Vol. 29, pp. 253-272. DOI: 10.1146/annurev.publhealth.29.020907.090926
48. *The Future we Want* (2012). Outcome of the conference: Rio+20 United Nations Conference on Sustainable Development. Rio de Janeiro, Brazil. [online] [08.12.12]. Available at [http://www.unep.fr/scp/pdf/Rio\\_The\\_Future\\_We\\_Want.pdf](http://www.unep.fr/scp/pdf/Rio_The_Future_We_Want.pdf)
49. *The National Food Administration's environmentally effective food choices*. Proposal Notified to the EU 15 May 2009. (2009). Livsmedel Verket, Swedish National Food Administration and Environmental Protection Agency, Stockholm, Sweden, p.16. [online] [08.12.12]. Available at [http://www.slv.se/upload/dokument/miljo/environmentally\\_effective\\_food\\_choices\\_proposal\\_eu\\_20\\_09.pdf](http://www.slv.se/upload/dokument/miljo/environmentally_effective_food_choices_proposal_eu_20_09.pdf)
50. *The Sustainable Shopping Basket: A Guide to Better Shopping* (2011). German Council for Sustainable Development [online] [08.12.12]. Available at [http://www.nachhaltigkeitsrat.de/fileadmin/user\\_upload/English/pdf/publications/brochures/Brochure\\_Sustainable\\_Shopping\\_Basket\\_September\\_2010.pdf](http://www.nachhaltigkeitsrat.de/fileadmin/user_upload/English/pdf/publications/brochures/Brochure_Sustainable_Shopping_Basket_September_2010.pdf)
51. *Think Twice! An Action Plan for Sustainable Household Consumption*. (2006). Ministry of Agriculture, Food and Consumer Affairs Sweden. [online] [08.12.12]. Available at <http://www.government.se/content/1/c6/06/57/11/3f3e2011.pdf>
52. Tobler C., Visschers V.H., Siegrist M. (2011). Eating green. Consumers' Willingness to Adopt Ecological Food Consumption Behaviors. *Appetite*, Vol. 57(3), pp. 674-82. DOI: <http://dx.doi.org/10.1016/j.appet.2011.08.010>
53. Vanhonacker F., Van Loo E.J., Gellynck X., Verbeke W. (2012). Flemish Consumer Attitudes Towards More Sustainable Food Choices. *Appetite*. DOI: 10.1016/j.appet.2012.11.003.
54. Verain M.C.D., Bartels J., Dagevos H., Sijtsema S.J., Onwezen M.C. Antonides G. (2012). Segments of Sustainable Food Consumers: A Literature Review. *International Journal of Consumer Studies*, Vol. 36(2), pp. 123-132. DOI: 10.1111/j.1470-6431.2011.01082.x
55. *Welcome to Livewell 2020: 7 Day Sample Menu* (2011). World Wildlife Fund (WWF), Factsheet, UK. [online] [08.1.13]. Available at [http://assets.wwf.org.uk/downloads/7\\_day\\_menu.pdf](http://assets.wwf.org.uk/downloads/7_day_menu.pdf)