

Newsletter

Open Access

Decalogue for Sustainable Food and Nutrition in the **Community: Gran Canaria Declaration 2016**

Lluís Serra-Majem^{1,2,3,4*}, Javier Aranceta Bartrina^{4,5}, Adriana Ortiz-Andrellucchi^{1,2}, Cristina Ruano-Rodriguez^{1,2}, Esther González-Padilla^{1,2}, Florence Egal⁶, Jose Antonio González⁷, Carmen Pérez-Rodrigo^{4,5}, Gemma Salvador Castell⁸, Mercè Vidal Ibáñez⁸, Agneta Yngve⁹, Juan Moreno Rodríguez¹⁰, Luis D. Boada¹, Juan Luis Gómez Pinchetti⁷, Carmelo León González⁷, Emilio Martinez de Victoria Muñoz^{4,11}, Octavio P. Luzardo¹, Jordi Pich Solé¹², Rafael Urrialde¹³, Ana Luisa Álvarez-Falcón¹⁴, Luis Bello Luján¹, Tamara Casañas-Quintana^{1,2}, Caterina Terrassa¹², Patricia Henríquez-Sánchez^{1,2}, Antera Martel Quintana⁷, Dara Bello Oshanahan¹⁵, Lourdes Ribas Barba¹⁶, Roberto Capone^{3,17}, Almudena Sánchez-Villegas^{1,2}, JoyNgo de la Cruz¹⁶, Sandro Dernini^{3,18,19}

¹Research Institute of Biomedical and Health Sciences (IUIBS), Department of Clinical Sciences, University of Las Palmas de Gran Canaria, Las Palmas, Spain ²Ciber Obn Physiopathology of Obesity and Nutrition, Institute of Health "Carlos III", Madrid, Spain ³International Mediterranean Diet Foundation, London, UK ⁴Spanish Academy of Nutrition and Food Sciences, Barcelona, Spain ⁵Spanish Society of Community Nutrition; 5bis University of Navarra, Pamplona, Spain ⁶International Urban Food Network, Rome, Italy ⁷Banco Español de Algas, Instituto de Oceanografía y Cambio Global, University of Las Palmas de Gran Canaria, Spain ⁸Agencia de Salud Pública de Cataluña. Departamento de Salud ⁹Department of Food, Nutrition and Dietetics, Uppsala University, Sweden ¹⁰Consumers Union of Andalusia, Spain ¹¹University of Granada, Spain ¹²University of Balearic Islands, Palma de Mallorca, Spain ¹³Spanish Nutrition Foundation, Madrid, Spain ¹⁴Hospital Universitario de Gran CanariaDrNegrín, Las Palmas, Spain ¹⁵Dara feeling food, Las Palmas, Spain

¹⁶Nutrition Research Foundation, Barcelona, Spain

¹⁷CIHEAM-Centre International de Hautes Études Agronomiques Méditerranéennes, París, Francia

¹⁸CIISCAM-International Inter-University Center for Mediterranean Food Culture Studies, Rome, Italy ¹⁹FAO, Rome, Italy

*Corresponding author: Lluís Serra-Majem, MD, PhD, Research Institute of Biomedical and Health Sciences, Department of Clinical Sciences, University of Las Palmas de Gran Canaria, Las Palmas, Spain, Tel: (+34) 928453475/ Fax: (+34) 928451416; E-mail: lluis.serra@ulpgc.es

Abstract

(cc)

The "Decalogue for sustainable food and nutrition in the community: Gran Canaria Declaration 2016" aims to improve food sustainability across the globe.

Public Health, Nutrition, Consumer, Social, Marine and Environmental Sciences and Tourism are important topics that have been highlighted in this Decalogue, whose full implementation promote the development of sustainable consumption and production patterns. Keeping in mind that the Mediterranean Diet represents one of the most outstanding and emblematic examples of healthy and sustainable food and nutrition, being recognised as Intangible Cultural Heritage by UNESCO, the Mediterranean diet is a cultural heritage that looks to the future.

This document also takes into consideration scientific evidences that justify the development and implementation of these 10 keys for a healthier life and world. Investing in the future we want is everyone's responsibility, and a commitment of the present and future generations.

Received date: September 5, 2016 Accepted date: November 28, 2017 Published date: November 30, 2017

Citation: Serra-Majem, L., et al. Decalogue for Sustainable Food and Nutrition in the Community: Gran Canaria Declaration 2016. (2017) J Environ Health Sci 3(2): 1-5.

DOI: 10.15436/2378-6841.17.1701



Keywords: Sustainable food; Public health nutrition; Biodiversity; Environment; Gran Canaria

Introduction

Around thirty national and international nutrition experts elaborated the Decalogue for sustainable food and nutrition in the community: Gran Canaria Declaration 2016, with the aim of improving food sustainability across the globe. This guide is a pioneer in the field, with worldwide significance and developed from conclusions drawn from the Community Nutrition and Sustainability Expert Meeting held at the beginning of April at the Gran Canarian municipalities of Santa Brígida and Vega de San Mateo. It is promoted by the Spanish Academy of Nutrition and Food Sciences (AEN), the Nutrition Research Foundation (FIN), the University of Las Palmas de Gran Canaria via their University Research Institute of Biomedical and Health Sciences (IUIBS) and the "The Island on your Plate" Project, the Spanish Society of Community Nutrition (SENC), the International Foundation of Mediterranean Diet (IFMeD), the NGO Nutrition Without Borders, and the CIBER Physiopathology of Obesity and Nutrition.

Moreover, the document has gained the support of over 50 institutions located throughout the world, ranging from Consumer Associations, Research Institutes, Scientific Societies, United Nations Organisations, NGOs and specialised press, that have come together to highlight the importance of Sustainable Nutrition within the current food panorama. The environmental sustainability of food systems is a critical challenge for policy makers (Ridgway et al., 2015).

Public Health, Nutrition, Consumer, Social, Marine and Environmental Sciences, and Tourism pointed out: how ideal is to consume local products in season to reduce the environmental footprint and the energy consumption linked to transporting goods; the value of reviving traditional recipes, buying and cooking in the company of family and friends, reducing waste and recycling adequately, or prioritising plants/algae based foods and limiting the consumption of meat, processed meat and dairy products.

Other recommendations include: the importance of utilising terrestrial and aquatic biodiversity in a sustainable manner to ensure its continuity and to maintain diet variety; take an interest in the sustainability and equity of agricultural, livestock and fishing practices; enjoy companionship and pleasure at mealtimes, always within the context of balance and moderation; and keep in mind that the Mediterranean Diet represents one of the most outstanding and emblematic examples of healthy and sustainable food and nutrition, being recognised as Intangible Cultural Heritage by UNESCO. Table 1 shows a summary of this Decalogue. **Table 1**. Decalogue developed based on an Expert Consensus Meetingheld in Gran Canaria Spain on the 8th and 9th of April 2016.

10 keys for a healthier life and world

1. Select and consume locally sourced foods. Choose products produced in your own region and made available at local markets.

2. Preferentially consume foods that are in season. They are healthier, more economical and sustainable.

3. Revive traditional local foods and recipes. They are part of our culture and make up our identity.

4. Learn to buy and cook in the company of others. It's more fun and enriching. And we can learn from each other.

5. Plan menus and shopping lists. Try to reduce food waste and recycle adequately at home and in the community.

6. Prioritise plant based foods. Limit the consumption of meat, processed meat and dairy products. Your health and the planet's will appreciate it.

7. Aquatic and terrestrial biodiversity is critical and we should promote it to ensure its continuity. It's everyone's responsibility.

8. Take an interest in whether the agricultural, livestock and fishing practices which provide the foods you obtain and consume are sustainable.

9. Enjoy the companionship and pleasure of mealtimes, always within the context of balance and moderation. Reduce portion sizes.

10. Enjoy the Mediterranean diet. It is one of the best examples of healthy and sustainable food and nutrition. UNESCO has declared it an Intangible Cultural Heritage of Humanity- they surely must have their reasons for doing so.

The Decalogue for sustainable food and nutrition point by point

Select and consume locally sourced foods. Choose products produced in your own region and made available at local markets

Transporting foods from remote locations to their points of consumption represents an important component of the ecological footprint of food, primarily due to energy consumption and its consequent environmental pollution. Moreover, the purchase of locally sourced products in local markets has a positive effect on the local economy and its development, as well as in the reactivation of the rural environment and the protection of the ecosystems and landscapes. Programs and policies that support sourcing local and regional foods for schools, hospitals, faith-based organizations, and worksites may benefit institutional customers and their families, farmers/fishermen, the local community, and the economy (Harris et al., 2012; Johns et al., 2013; Ishdorj et al., 2016).

Preferentially consume foods that are in season

Seasonal foods respect favourable climatic conditions and facilitate foods with better organoleptic and nutritional characteristics. Moreover, foods bought in season are usually more economic and sustainable. With regard to aquatic foods, consumers should gather suitable information in order to prioritise the purchase of fish products out of the reproductive season of the donor food species/resources. As stated, in general fish



and seafood have worst organoleptic and nutritional properties during their reproductive seasons. Sustainable development means improving the quality of life within carrying capacity of ecosystems. The health sector has an important role linking environmental with economic development; surveillance systems could monitor health status and the impacts on ecological and economic sustainability (Litsios, 1994).

Revive traditional local foods and recipes

Food education is a fundamental element for the culture and identity of peoples. Such education should come with measures aimed at improving the accessibility of local products to ensure feasibility and sustainability (Ouédraogo et al., 2009). Therefore, the protection of gastronomic and cultural heritage in the community should be seen as a priority for the sustainability of food and nutrition in and of itself. Promoting use of local traditional food biodiversity is an essential driver of food system sustainability for peoples, and contributes to global consciousness for protecting food biodiversity and food system sustainability more broadly (Kuhnlein, 2015).

Learn to buy and cook in the company of others

Whether with family or with friends, learning healthy eating habits involves knowing about food and culinary techniques and having basic abilities for the purchase, and even for the production, of foods and ingredients (Ouédraogo et al., 2009; Bowen & Devine, 2011).

Plan menus and shopping lists. Try to reduce food waste and recycle adequately at home and in the community

Planning food purchases and menus should follow the criteria for sustainability: health, environment, economy and culture. Consumers' attitudes and behaviour towards sustainable research are emerging. Consumer research has focused primarily on specific areas of sustainable food, such as organic food, local or traditional food, meat substitution and/or reduction (Pieniak et al., 2016). Therefore, excess food and waste generated throughout the entire food chain (production, distribution and consumption) should be avoided (FAO, 2012; Medina, 2015). Try to adequately recycle both food waste and its packaging, putting food solidarity into practice as well. The recent review by Li et al. (2016) hassummarised the sources, occurrence, fate and effects of plastic waste in the marine environment. Due to its resistance to degradation, most plastic debris will persist in the environment for centuries and may be transported far from its source, including great distances out to sea. Land- and oceanbased sources are major sources of plastic entering the environment, with domestic, industrial and fishing activities being the most important contributors.

Prioritise plant-based foods. Limit the consumption of meat, processed meat and dairy products

The production of animal foods (in particular commonly consumed red meat, processed meats and dairy products) has an environmental footprint that is greater than that of plant foods (cereals, fruits, vegetables, legume and nuts). This is especially true for greater emission of gases having a greenhouse effect, as well as increased water and energy consumption and usage of land area (Yip et al., 2013; Lacirignola et al., 2014; Clonan et al., 2015; Machovina et al., 2015). What's more, your health will also benefit from making these recommended changes. Rising incomes and urbanization are driving a global dietary transition in which traditional diets are replaced by diets higher in refined sugars, refined fats, oils and meats. By 2050 these dietary trends, if unchecked, would be a major contributor to an estimated 80% increase in global agricultural greenhouse gas emissions from food production and to global land clearing. Diets link environmental and human health. The implementation of dietary solutions to the tightly linked diet-environment-health trilemma is a global challenge, and opportunity, of great environmental and public health importance (Belahsen, 2014; Tilman & Clark, 2014; Vanham & Bidoglio, 2014).

Aquatic and terrestrial biodiversity is critical and we should promote it to ensure its continuity. It's everyone's responsibility.

The loss of biodiversity over the last few decades in both vegetal and animal species may jeopardise the sustainability of the global food system, and could lead to compromise food security and the deterioration in food quality and variety. Understanding the consequences of loss of species/taxa in complex ecological communities is one of the great challenges in current biodiversity research (Brose et al., 2016). The consumer, although having less responsibility for these aspects of food and nutrition, should be proactively aware of their importance and long-term significance. Look for relevant information available in shops and markets and, if you can't find it, ask.

Take an interest in whether the agricultural, livestock and fishing practices which provide the foods you obtain and consume are sustainable.

Sustainability is an important aspect of the entire food chain process (production, transformation and distribution) for both plant/algae and animal products. The environment is usually more vulnerable to intensive production than to traditional systems of production, raising livestock and fishing, and therefore sustainable and harmonious food systems should be promoted (Bruschi et al., 2014). A central challenge for sustainability is how to preserve forest ecosystems and the services that they provide us while enhancing food production (Lambin & Meyfroidt, 2011). A few developing countries have managed a land use transition over the recent decades that simultaneously increased their forest cover and agricultural production. Globalization can be harnessed to increase land use efficiency rather than leading to uncontrolled land use expansion (Uhart & Milano, 2002). The same applies for the aquatic use extension, in particular with regard to deep-sea environments. The application of the ecosystem approach (https://www.cbd.int/ecosystem/) is a "strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way".

Enjoy the companionship and pleasure of mealtimes, always within the context of balance and moderation. Reduce portion sizes.

Companionship and pleasure are fundamental elements in the act of eating that provide it with a sense of identity. However, they should be combined with balance, variety and moderation to avoid that entertainment and festivity turn into excess and wastefulness. Large food portions increase consumption and



total energy intake. Crucially, portion size is a modifiable determinant of dietary energy intake. In a sense, excessive food and energy consumption can be considered as food waste, with important consequences for health (Stroebele et al., 2009; Vermeer et al., 2011; Marteau et al., 2015).

Enjoy the Mediterranean Diet. It is one of the best examples of healthy and sustainable food and nutrition. UNESCO has declared it Intangible Cultural Heritage of Humanity-they surely must have their reasons for doing so.

The Mediterranean Diet, Intangible Cultural Heritage of UNESCO, embodies one of the healthiest, most traditional and most sustainable food models in the world (UNESCO, 2010). Its preservation and promotion not only have effects on the health of individuals and communities, but also impact on the health of the planet (Burlingame & Dernini, 2011; Donini et al., 2016). Community-based actions that promote healthy eating patterns based on locally available foods linked to territory (both aquatic and terrestrial), culture, equity and economy should be developed and supported. Changes in diet, reducing animal products and increasing consumption of vegetables can not only benefit human health and the overall use of land/water/ resources, but can also play a decisive role in the politics of climate change mitigation. In this sense, the Mediterranean Diet is presented as a sustainable cultural model respectful of the environment, whose adherence in Mediterranean countries should contribute to mitigate the global climate change (Serra-Majem et al., 2011; Lake et al., 2012; Sáez-Almendros et al., 2013; Germani et al., 2014).

This document highlights scientific evidences that justify the development and implementation of above-mentioned 10 keys for a healthier life and world. Healthy people are vital for local development that is both economically and ecologically sound. Sustainable development is healthy development (Litsios, 1994). Investing in the future we want is everyone's responsibility, and a commitment of the present and future generations.

Acknowledgments: Special thanks to the following partners: Spanish Academy of Nutrition and Food Sciences (AEN); Nutrition Research Foundation (FIN); Spanish Society of Community Nutrition (SENC); International Foundation of Mediterranean Diet (IFMeD); NGO Nutrition without Borders (NsF); Centre International de Hautes Etudes AgronomiquesMéditerranéennes (CIHEAM); International Inter-University Center for Mediterranean Food Culture Studies (CIISCAM); IlustreAyuntamiento de la Vega de San Mateo; IlustreAyuntamiento de la Villa de Santa Brígida; Mancomunidad de Municipios de lasMedianías de Gran Canaria; Forum on Mediterarrnean Food Cultures, UN-ESCO Chair of Research, Development and Planning of Local Health Systems, UNESCO Chair in Tourism Planning and Sustainable Development, and International Association of Community Nutrition (IACON).

Reference

1. Belahsen, R. Nutrition transition and food sustainability. (2014) Proc Nutr Soc 73(3): 385-388.

PubMed CrossRef Others

2. Bowen, R., Devine, C. "Watching a person who knows how to cook, you'll learn a lot". Linked lives, cultural transmission, and the food choices of Puerto Rican girls. (2011) Appetite 56(2): 290-298. PubMed CrossRef Others

3. Brose, U., Blanchard, J.L., Eklöf, A., et al. Predicting the consequences of species loss using size-structured biodiversity approaches. (2016) Biol Rev Camb Philos Soc 92(2): 684-697.

PubMed CrossRef Others

4. Bruschi, P., Mancini, M., Mattioli, E., et al. Traditional uses of plants in a rural community of Mozambique and possible links with Miombo degradation and harvesting sustainability. (2014) J Ethnobiol Ethnomed10: 59.

PubMed CrossRef Others

5. Burlingame, B., Dernini, S. Sustainable diets: the Mediterranean diet as an example. (2011) Public Health Nutr 14(12A): 2285-2287. PubMed CrossRef Others

6. Clonan, A., Wilson, P., Swift, J.A., et al. Red and processed meat con-

sumption and purchasing behaviours and attitudes: impacts for human health, animal welfare and environmental sustainability. (2015) Public Health Nutr 18(13): 2446-2456.

PubMed CrossRef Others

7. Donini, L., Dernini, S., Lairon, D., et al. A Consensus Proposal for Nutritional Indicators to Assess the Sustainability of a Healthy Diet: The Mediterranean Diet as a Case Study. (2016) Front Nutr 3(37): 1-14. PubMed | CrossRef | Others

8. FAO. Pérdidas y desperdicio de alimentos en el mundo – Alcance, causas y prevención. (2012) Roma.

PubMed CrossRef Others

9. Germani, A., Vitiello, V., Giusti, A.M., et al. Environmental and economic sustainability of the Mediterranean Diet. (2014) Int J Food Sci Nutr 65(8): 1008-1012.

PubMed CrossRef Others

10. Harris, D., Lott, M., Lakins, V., et al. Farm to institution: creating access to healthy local and regional foods. (2012) Adv Nutr 3(3): 343-349.

PubMed | CrossRef | Others

11. Ishdorj, A., Capps, O. Jr., Murano, P.S., et al. Nutrient Density and the Cost of Vegetables from Elementary School Lunches. (2016) Adv Nutr 7(1): 254S-260S.

PubMed CrossRef Others

12. Johns, T., Powell, B., Maundu, P., et al. Agricultural biodiversity as a link between traditional food systems and contemporary development, social integrity and ecological health. (2013) J Sci Food Agric 93(14): 3433-3442.

PubMed CrossRef Others

13. Kuhnlein, H.V. Food system sustainability for health and well-being of Indigenous Peoples. (2015) Public Health Nutr 18(13): 2415-2424. PubMed CrossRef Others

14. Lacirignola, C., Capone, R., Debs, P., et al. Natural resources - food nexus: food-related environmental footprints in the Mediterranean countries. (2014) Front Nutr 1: 23.

PubMed CrossRef Others

15. Lake, I., Hooper, L., Abdelhamid, A., et al. Climate change and food security: health impacts in developed countries. (2012) Environ Health Perspect 120(11): 1520-1526.

PubMed CrossRef Others

16. Lambin, E., Meyfroidt, P. Global land use change, economic globalization, and the looming land scarcity. (2011) Proc Natl Acad Sci USA 108(9): 3465-3472.

PubMed CrossRef Others



17. Li, W., Tse, H.F., Fok, L. Plastic waste in the marine environment: A review of sources, occurrence and effects. (2016) Sci Total Environ 566-567: 333-349.

PubMed CrossRef Others

18. Litsios, S. Sustainable development is healthy development. (1994) World Health Forum 15(2): 193-195.

PubMed | CrossRef | Others

19. Machovina, B., Feeley, K.J., Ripple, W.J. Biodiversity conservation: The key is reducing meat consumption. (2015) Sci Total Environ 536: 419-431.

PubMed CrossRef Others

20. Marteau, T., Hollands, G.J., Shemilt, I., et al. Downsizing: policy options to reduce portion sizes to help tackle obesity. (2015) BMJ 351: h5863.

PubMed CrossRef Others

21. Medina, J. Pérdidas y desperdicios de alimentos en el contexto de los sistemas alimentarios sostenibles. (2015) Alianza contra el Hambre y la Malnutrición de España (ACHM-E).

PubMed | CrossRef | Others

22. Ouédraogo, H., Traoré, T., Zèba, A., et al. Development of an improved local-ingredient-based complementary food and technology transfer to rural housewives. (2009) Food Nutr Bull 30(2): 153-160. PubMed CrossRef Others

23. Pieniak, Z., Żakowska-Biemans, S., Kostyra, E., et al. Sustainable healthy eating behaviour of young adults: towards a novel methodological approach. (2016) BMC Public Health 16: 577.

PubMed CrossRef Others

24. Ridgway, E.M., Lawrence, M.A., Woods, J. Integrating Environmental Sustainability Considerations into Food and Nutrition Policies: Insights from Australia's National Food Plan. (2015) Front Nutr 2: 29. PubMed CrossRef Others

25. Sáez-Almendros, S., Obrador, B., Bach-Faig, A., et al. Environmental footprints of Mediterranean versus Western dietary patterns: beyond the health benefits of the Mediterranean diet. (2013) Environ Health 12: 118.

PubMed CrossRef Others

26. Serra-Majem, L., Bach-Faig, A., Miranda, G., et al. Foreword: Mediterranean diet and climatic change. (2011) Public Health Nutr 14(12A): 2271-2273.

PubMed CrossRef Others

27. Stroebele, N., Ogden, L.G., Hill, J.O. Do calorie-controlled portion sizes of snacks reduce energy intake? (2009) Appetite 52(3): 793-796. PubMed CrossRef Others

28. Tilman, D., Clark, M. Global diets link environmental sustainability and human health. (2014) Nature 515(7528): 518-522.

PubMed CrossRef Others

29. Uhart, M., Milano, F. Multiple species production systems: reversing underdevelopment and nonsustainability in Latin America. (2002) Ann NY Acad Sci 969: 20-23.

PubMed CrossRef Others

30. UNESCO. Representative list of the intangible cultural heritage of humanity. (2010) (Accessed 31 Aug 2016).

PubMed | CrossRef | Others

31. Vanham, D., Bidoglio, G. The water footprint of Milan. (2014) Water Sci Technol 69(4): 789-795.

PubMed CrossRef Others

32. Vermeer, W., Steenhuis, I.H., Leeuwis, F.H., et al. Small portion sizes in worksite cafeterias: do they help consumers to reduce their food intake? (2011) Int J Obes (Lond) 35(9): 1200-1207.

PubMed CrossRef Others

33. Yip, C.S., Crane, G., Karnon, J. Systematic review of reducing population meat consumption to reduce greenhouse gas emissions and obtain health benefits: effectiveness and models assessments. (2013) Int J Public Health 58(5): 683-693.

PubMed CrossRef Others