Nutrition between sustainability and quality°

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Keyword: Sustainability, aliments, quality, mediterranean diet
Parole chiave: Sostenibilità, alimenti, qualità, dieta mediterranea

Abstract

This lecture describes the complex interrelations existing between human nutrition, quality of aliments, their safety and the sustainability of the feeding habits adopted by the different cultures in the World.

At present, a significant part of the developing World is still affected by insufficient availability of nutritious and safe food, and these difficulties are due more to political events as wars and less to natural events as famine.

It is equally true that in the developed World, where abundance reigns and international trade grants a large variety of foods everywhere, the existing health problems arise from the excess of nutrition, worsened by sedentarity, because the fatigue due to manual work has disappeared and people maintain their feeding habits; but such problems depend also on the diet composition, which in some countries is too rich in meat and animal fats. As a consequence, chronic degenerative pathologies and a progressive dependence of people in their third age are becoming more and more common.

But this situation could be overturned by corrective interventions driven by good epidemiological knowledge, as teach us the great international institutions as UNO and WHO. The goal is not to expand without limits the production of food, but to better distribute it socially and geographically, to minimize losses and wastes and also to change those diets based on foods which consume too many natural resources and, therefore, do not respect sustainability.

Sustainability can be measured under different aspects: ecology (use of water, energy and soil), economy and health protection. Accurate analyses and evaluations have brought to the conclusion that the least sustainable diets are those, quite popular in the Anglosaxon countries and northern and eastern Europe, rich in meat and animal fats, while those based on cereals, legumes and fish – like the Japanese and the Mediterranean diets – respect much more the environment, consume less resources and improve health and longevity (or, better, longevity in good health).

The Mediterranean diet has been identified, classified and scientifically documented as the one that can guarantee longevity in good health by the US physiologist Ancel Keys, who lived many years in the Italian area of Cilento, the Italian creadle of such a diet, and died at the age of 100. The Mediterranean diet has been recognized in 2010 as an intangible cultural patrimony of Humanity by UNESCO, and is practiced also in many areas of Spain, Portugal, Greece, Morocco and Cyprus.

Good diets per se are not sufficient to improve health if they are not accompanied by a daily physical exercise, which is necessary to replace the physical fatigue, represented in the past by the manuality of almost all jobs, with new practices as swimming, bicycling or at least walking enough time every day.

Another aspect to be developed is the capacity of the Mediterranean Diet to safeguard the cultural aspects, like conviviality and sharing of food, which are good mechanisms for socialization and improving the life of families and communities.

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Nutrition has been defined as “The ensemble of biological processes which allow, or affect, survival, growth, development and integrity of a living body, on the basis of availability of energy and nutrients” (1).

Public Health is deeply interested in human nutrition. When in excess, or insufficient or unbalanced, and also when employing bad quality foods, nutrition can cause very serious problems to health, even death.

In particular, according to the Global Burden of Diseases Study 2013 (2) and the Food and Agricultural Organisation - FAO (3), nutrition habits far from those of the Mediterranean Diet have negative effects on longevity and life quality of the elderly, causing 20% of the total Dalys in males and 17% in females.

But it has been shown with scientific evidence that preventive interventions, applied with a background of a correct epidemiologic knowledge, can avoid such negative outcomes.

Fighting insufficient or deficient diets is an ethic duty with reference to the Third World, while fighting overweight, obesity, diabetes and other chronic degenerative diseases as a consequence of excess or unbalanced nutrition is our goal all around the developed part of the World.

This lecture will discuss the different aspects of sustainability in relation to the quality of human nutrition.

According to the FAO (3), the total amount of food available at present on the Planet, including the proportion which is lost or wasted, should be sufficient to feed up to 10 billion people if evenly distributed, while the world population, at present, counts a little more than 7 billion people. But because overnutrition from one side, famine from the other, are quite common all around the world, this means that the situation is quite different and can be explained as the consequence of an iniquitous access to food.

The iniquitous access can be considered under three separate aspects:

- **Inequalities**: housing on their territory 5% of the World population, the United States consume up to 30% of the agricultural resources of the Planet, not only directly (as human food) but also indirectly (mostly to feed cattle but a proportion also to produce biofuels); this means that the other 95% of the World population must be content with the remaining 70% (4).

- **Suboptimal destination of resources**: in 2012-2013 up to 55.9% of cereals worldwide were employed to feed livestock, and only 17.7% for human consumption (5). In Italy, up to 82% of corn is employed for zootechnical use, and only 18% for human consumption (6). In such a way, 1 hectare (2.47 acres) cultivated with cereals for animal consumption can indirectly feed just one person/year, while the same hectare, when potatoes are grown on it, can feed 20; and when cereals are used to produce biofuel, the amount necessary to feed a man for one year is enough to fill only once with biofuel the tank of a large truck (7).

- **Wastes**: within the European Union, 89 million tons of food are wasted, corresponding to 179 Kg/y per person. Out of it, 39% takes place during industrial transformation, 5% during trade, 14% is due to restaurants and canteens and up to 42% to the domestic handling of food (8). The list of the different ways of producing waste is shown in Table 1.

<table>
<thead>
<tr>
<th>Table 1 - Ways of producing wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss during harvest</td>
</tr>
<tr>
<td>It does not pay to harvest</td>
</tr>
<tr>
<td>Discarded during processing</td>
</tr>
<tr>
<td>Decay due to poor storage</td>
</tr>
<tr>
<td>Spoilage due to parasites</td>
</tr>
<tr>
<td>Processing scraps</td>
</tr>
<tr>
<td>Decay due to suboptimal conservation</td>
</tr>
<tr>
<td>Discarded because too close to expiration date</td>
</tr>
</tbody>
</table>
**Sustainability**

It is a common affirmation that the feeding models must be sustainable, which means that they must respect ecosystems and biodiversity and should be characterized by a low environmental impact. Further, they must be adequate under the nutritional standpoint. Finally, they must be economically compatible and be in harmony with the culture and the traditions of the interested community.

In summary, a sustainable feeding model should not induce long-lasting negative effects on (a) the environment, (b) the health and (c) the economy.

**Environmental sustainability**

Such aspect is not granted by the techniques presently employed by the large-scale agriculture and cattle-breeding, which sacrifice biodiversity in favour of few more robust and very productive varieties of plants and animals: if some of them becomes victim of a disease, replacement can become a problem. But not only that: sacrificing the large number of different varieties provided by nature means a general impoverishment of resources and also a limitation to the food culture and history.

The pressure on the environment by an uneven food production can be evaluated through the study of the family of the “foot prints”, which can measure, through the use of aggregated indicators, the impact on natural resources caused by a specific activity. The most interesting are: carbon footprint, water footprint, nitrogen footprint and ecological footprint.

**Carbon footprint** is the amount of greenhouse gases emitted during all passages for the production of vegetables/meat, including packaging, conservation and distribution.

Quoting an example from the vegetable world, 1 Kg tomatoes grown in greenhouses emits 3.5 Kg CO$_2$eq (mostly due to production of electricity for heating and illumination), while the same amount of tomatoes, grown in an open field, emits only 0.05 Kg CO$_2$eq, namely 70 times less. This involves as a consequence the indication to consume preferably vegetables in season (9).

Another example, taken from the field of animal breeding, is that a bovine steak of 250 g is associated with the emission of 3.4 Kg CO$_2$eq, while 250 of legumes with the emission of 0.06 Kg CO$_2$eq, 57 times less. The comment is that adopting just once a week a meal where meat is replaced by a vegetable source of proteins will avoid the production of 180 Kg CO2eq per person/year (9).

**Water footprint** indicates the amount of water consumed or polluted to produce a given amount of goods, e.g. food.

The daily water footprint to provide every person with enough food is 1,500-2,600 Liters for a vegetarian diet, while is up to 4,000-5,000 for a diet rich in animal proteins and fats. It is clear that the second diet, highly hydrovorous, is dangerous for the balance of water supply, in addition to its harmfulness for human health (10).

**Nitrogen footprint** is represented by the amount of reactive nitrogen introduced into the environment during cultivation (when employing fertilizers) or breeding animals (because of their excreta).

At present, the environment is receiving more nitrogen than it can metabolize, causing, as a consequence, its accumulation in the surface water with phenomena such as eutrophization. It must be underlined than up to 55% of agricultural products (alfalfa, cereals) are devoted to grow animals for milk and meat production; therefore, a drastic limitation to meat consumption can reduce the nitrogen footprint, so reducing the pressure on soils and waters (5).

Finally, the ecological footprint is the surface of soil (in square meters) necessary to grow one Kg of a given
product; It has been calculated also the per capita ecological footprint as the average biologically productive area per person, which is worldwide 1.8 hectares; but it is up to 9.0 hectares for USA (11).

Health sustainability

Health sustainability tells us how much a feeding model is adequate, under the nutritional standpoint, to grant health protection and even health improvement. Health sustainability must consider food and nutrition under the aspects of quantity and quality.

As the **quantity** is concerned, it is to be underlined that after the end of the second WW, particularly after the introduction of mechanisation, informatics and computers, physical fatigue has been highly reduced for the large majority of jobs, while most people maintain their feeding habits, as far as the amount of food introduced daily is concerned. Therefore the caloric unbalance and the relative excess of proteins, sugars and fats in the diet have been followed by the appearance of overweight, obesity and a variety of degenerative diseases such as stroke, myocardial infarction, etc. A typical example is represented by the fate of woodcutters from Karelia, investigated by the Seven Countries Study, who, in the period when cutting logs was only done by manual activity, were characterized by an acceptable health level in spite of a massive consume of food; after motor saws, cranes and trucks were introduced while their diet remained the same, epidemics of cardiac diseases came and their incidence was only reduced after robust cuts from their food intake (12).

As the **quality** of food is concerned, quality is protected (a) fighting frauds and sophistications, preventing that foods cause intoxications, infections and parasitic diseases and (b) offering to consumers high level, genuine e desirable products.

The responsibility of interventions of the first type is up to the Health Authorities. At the European Commission level there is the Directorate for Health and Food Safety, cooperated by the European Food Safety Authority (EFSA, in Parma Italy). At our national level, the hierarchic organization includes the Ministry of Health, the Regional Health Authorities and the Local Health Authorities. In the field of food safety, as in many others, every national legislation is now inspired by the European Directives, whose contents are mandatory in every Country of the Union.

An example of how the protection of foods operates against the risks for health is shown by the National Integrated Plan for Quality 2015-2018 (Table 2).

<table>
<thead>
<tr>
<th>Table 2 - The National Integrated Plan for Quality</th>
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<tr>
<td>The National Integrated Plan* or NIP, has been established to define, orientate and coordinate all the official controls for food safety and for fighting frauds along all the productive chain as far as food, feed, animal health and welfare, plants health and the environment are concerned.</td>
</tr>
<tr>
<td>NIP 2015-2018 has been recently implemented involving the interested Directorates of Ministries of Health, Environment and Agriculture, the Customs and Monopolies Agency, the specialized branches of Carabinieri (NAS), the Forestry Police, the Financial Police, the Harbour police and the Regional and Local Health Authorities</td>
</tr>
</tbody>
</table>

The responsibility for interventions of the second type is shared by some public authorities and by the private initiative. As it can be seen in Table 3, again the European Union contributes to the goals of the second type attributing the titles of PDO, PGI and STG to original products of different countries selected for their
uniqueness after careful investigations (13). PDO means Protected Designation of Origin (an example in Italy: “Mozzarella di Bufala Campana”), PGI means Protected Geographical Indication (an example in Italy: “Formaggio Canestrato di Moliterno”) and STG means Traditional Specialty Guaranteed (an example in Italy: “Pizza Napoletana”). Italy, with up to 224 products so recognized (in 2015), is the leading country in the EU under this aspect.

Table 3 - PDO, PGI, TSG Description and examples

| PDO – Protected Designation of Origin | It applies to products which are produced, processed and prepared within a particular geographical area, and with features and characteristics which must be due to the geographical area (eg: Cornish Clotted Cream, which has been protected for its “specific quality and reputation, which is widely recognised as being attributable to the County of Cornwall. This includes the Cornish temperate climate contributing to the highest butterfat milk content in England).
| PGI – Protected Geographical Indication | It applies to products which must be produced or processed or prepared within the geographical area and have a reputation, features or certain qualities attributable to that area (eg: Pembrokeshire Early Potatoes having characteristics including “a soft skin and distinctive strong earthy nutty flavour and aroma” that arise from the mild climate and soil conditions present in Pembrokeshire).
| TSG – Traditional Specialty Guaranteed | It applies to products which are traditional or have customary names and have a set of features which distinguish them from other similar products. These features are not due to the geographical area the product is produced (eg: Traditionally Farmed Gloucestershire Old Spots Pork, which has unique qualities – eg: chemical and physical characteristics – from the breed of pig and traditional farming techniques used). |

At national level, the list of Traditional agricultural and zootechnical products (PAT) maintained by the Ministry of Agriculture, which recently underwent the 14th revision (14), collects at present up to 4,881 different food products which are described, recognized, protected and offered to the consumers. Some examples: Canederli trentini, Noce del Bleggio, Melanzana violetta casalese, etc.

In addition, many products, both with the European and/or the domestic recognition, are also covered by “Protection Consortia”, in which producers can spontaneously enroll, provided they officially accept to grow, breed of produce according to the strict rules established by the Consortia. Examples are the Consortium of “Parmesan Cheese”, established 1928 (15), the Consortium of the “Cannara” onion, established 2003 (16), the Consortium of the “Felino salami”, established 2014 (17).

At private level, the contributions are of different kinds. First of all I wish to quote some non-governmental organisations (NGO’s) at international (Slow Food) or national (Academy of the Italian Cuisine) levels; Slow Food was founded in 1986 by Carlo Petrini as a small local initiative in Piedmont, defined “an alternative to fast food, striving to preserve traditional and regional cuisine and encouraging farming of plants, seeds and livestock characteristic of the local ecosystem (18). Now it has expanded to 150 countries worldwide and counts over 100,000 members.

Among its initiatives I want to remind its network of “Praesidia”, i.e. the recognition of some products around the Globe which are at risk of disappearing, and for which Slow Food not only contributes to define their exact, historical characteristics, but also raises funds to help to expand their production, and to offer them on the domestic and international market (19). In addition, Slow Food has established an international organization of small producers in the field of agriculture, animal breeding and fishing named “Mother Earth” (20); and, finally, has founded a private University, the University of Gastronomic Sciences (21), in Pollenzo, Province of Cuneo in Piedmont, recognized...
by the Italian Government, where young students of all around the world are educated into first degree (Gastronomic Sciences, 3 years), second degree (Food Entrepreneurs, 5 years) and Master degree (Food Culture and Communication; Gastronomy: Italy & the World; Culture of Italian Wine; Food and Health).

Several Academies (or Fraternities) have been established during the 20th century, dedicated to preservation, knowledge dissemination, celebration in general (Academy of Italian Cuisine) (22) or of specific products: “Confraternita del baccalà alla vicentina” (Fraternity of the Vicenza style dried codfish) (23), “Accademia del peperoncino” (Academy of hot peppers, in Region Calabria) (24), etc.

As in other European countries, the Museums of gastronomic interest are very active in Italy. Some of them are independent (Wine and vine Museum in Torgiano near Perugia - MUVIT) (25), others are connected in networks as the five located around Parma (“Rete museale del cibo” or “Network of Food Museums”), dedicated to “Prosciutto” (row ham), “Culatello” (an exclusive ham obtained from a part of pork leg), “Salame di Felino” (“Felino salami”), “Parmesan cheese” and “Tomato preserves” (26).

Particular merits are to be recognized to a specialized group of journalists, some of them regularly writing on printed journals or magazines, others maintaining regular daily or weekly programs on the television; some of them are very successful such as “Eat parade” on National TV channel 2 (27), which became also a book (28), etc. In addition, we should not forget the cooks awarded the Michelin stars for restauration, many of them active in this country (one to three stars), who celebrate the excellence of traditional or innovative Italian cuisine, including that of Mediterranean tradition.

Our Society of Hygiene, Preventive Medicine and Public Health (29), recognizing the importance of nutritional education to reduce risks of chronic diseases, but also aware that only appetizing food is well accepted by the population, has established a Working Group on “Food Hygiene, Food Safety, Nutrition and Protection of Consumers’ Health”, which prepared several documents: out of them I wish to quote the recent “Feeding Health” (30).

In addition, as a cooperative effort, in 2013 the Group published “Ricette d’Italia tra gusto salute” (31), recently translated into English as “Italian recipes, taste and health” (32) and distributed during the 8th European Public Health Conference in Milano. These books contain several recipes proposed as “single dish” (piatto unico) according to the traditions of the Italian regional cuisine, but also adapted to grant nutritional balance. This is an attempt to help the managers of the canteens (located in factories, offices, schools), where a lot of people eat at noon, to switch to a single-dish offer instead of the traditional two-entry lunch (the latter of which turns cold while people consume the former).

In the occasion of the 47th Course “Adapted Physical Activity In Sport, Wellness And Fitness: New Challenges For Prevention And Health Promotion” organized within the School of Epidemiology and Preventive Medicine pertaining to the Ettore Majorana Foundation of Erice, a specific document, the Erice Charter (33), approved by all participants, has suggested to the Ministry of Health to establish, within the Departments or Prevention of the Local Health Authorities a “Service of Adapted Physical Activity” which will cooperate with the “Service of Food Safety and Nutrition” in favour of all members of the population, the obtain that every citizen not only will receive counseling about healthy nutrition but also will be taught and helped to practice a reasonable amount of daily physical activity; this because it has been demonstrated that a correct nutrition alone is not sufficient to maintain health if the person is physically inactive, as many youngster - devoted to TV, smartphones
and tablets - are: this is the reason which moved the EU to approve an Action Plan on Childhood Obesity 2014-2020 and to launch in September 2015 the Joint Action on Nutrition and Physical activity (JANPA), coordinated by the French Agency for Food, Environmental and Occupational Health and Safety, in which 39 partners from 26 European countries participate (34).

**Economic Sustainability**

A protein-rich diet, but also the common Italian diet, require the breeding of many animals, mostly beef. As we have seen in the previous chapters, to grow beef is associated with the consumption of large amounts of resources and the production of much pollution, and this means that such breeding is not very sustainable, and is expensive.

If, in the diet, beef is replaced by alternative meats, such as poultry, rabbits or porks, this can bring a saving, because such animals are much more prolific and, in addition, because they assimilate their food much better than beef. Actually, while a beef transforms into weight of meat 5-10% of the weight of its food, pork transforms 12-15% and chicken 14-18%. In addition, beef takes years to be ready for slaughter, while pork and chicken take months (35).

And when meat in general is - at least partially - replaced by vegetal sources of proteins such as legumes, this will drive to an even more economic nutrition. And this is the solution spontaneously proposed by the Mediterranean Diet.

The Mediterranean diet, included in 2010 in the list of the “Intangible cultural heritage of humanity” by UNESCO (36), was identified years before by the North American biochemist and nutritionist Ancel Keys, the organizer in 1947 of the Seven Countries Study, who lived and made research for 28 years in Pioppi, on the Salento coast of Southern Italy, and scientifically demonstrated the capacity of such diet to grant people longer life in health (37). The Mediterranean Diet, which he baptized, made popular and practiced himself (dying at the age of 100 years!) is characterized by the following points:

- It fights for a diversified and limited consumption of meats;
- It suggests substituting meat with fish and legumes
- It stresses the use of whole cereal flour for direct consumption (bread, pasta, etc)
- It suggests the use of extravirgin olive oil (EVO) as the elective fat, avoiding lard and butter
- It recommends the consumption of at least 5 daily doses of fresh vegetables and fruit
- It admits the use of little red wine daily, while discouraging highly alcoholic beverages and also soft drinks
- It preaches sobriety, variety, conviviality.

As illustrated in Table 4, on the basis of the Mediterranean Diet recommendations,

<table>
<thead>
<tr>
<th>Diets</th>
<th>Carbon Footprint (kg CO₂ equiv.)</th>
<th>Water Footprint (Liters of water)</th>
<th>Ecological Footprint (m² square meters soil employed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediterranean</td>
<td>17.04</td>
<td>13,781</td>
<td>29</td>
</tr>
<tr>
<td>Hyperproteic</td>
<td>30.55</td>
<td>19,767</td>
<td>201</td>
</tr>
<tr>
<td>Standard Italian</td>
<td>24.09</td>
<td>16,745</td>
<td>170</td>
</tr>
</tbody>
</table>
a study has been carried by Germani et al (38) to compare the weekly environmental impact (carbon, water and ecological footprints) of such a diet (first row) with that of the present standard food consumption of the Italian population (third row) and of a hyperproteic diet (second row). It emerges that the environmental impact of the Mediterranean Diet is significantly lower than the hyperproteic diet, but also than the standard Italian diet.

In the following table (Table 5), the monthly expenditure for food of a 4-people standard Italian family according to the 2013 ISTAT data (39) has been compared with what would the same family spend, should she adopt the Mediterranean Diet (whose components are listed according to ISTAT classification, taking into account, for each group of nutrients, the percentage of the total expenditure.

As far as costs are concerned, we know that a hyperproteic diet is more expensive than both the standard Italian and Mediterranean diets. On the contrary, the expenditure for the Mediterranean Diet is almost the same - a difference of 10 Euros/month - compared to the diet of an Italian standard family, but the distribution among the different groups of nutrients is noticeable: less for meat and more for vegetables and fruit.

The Mediterranean Diet is therefore more environmentally sustainable and not more expensive than the Italian standard diet: but it provides people with healthier aliments. In fact, it is poor in animal proteins and fats, which contribute to the risk of many chronic diseases: it suggests moderation providing less caloric food and involves the simultaneous offer of some physical activity. But it also insists on the quality of products and on their cultural significance and puts the accent on conviviality, which favours a more responsible consumption of food, more time spent together at the table in mutual interest.

<table>
<thead>
<tr>
<th>Aliments (*)</th>
<th>SMF MD</th>
<th>% on the total of SMF MD</th>
<th>SMF Istat 2013</th>
<th>% on the total of SMF ISTAT 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread and cereals</td>
<td>82.23</td>
<td>14%</td>
<td>101.9</td>
<td>17.38%</td>
</tr>
<tr>
<td>Meat</td>
<td>97.81</td>
<td>16%</td>
<td>140.8</td>
<td>24.03%</td>
</tr>
<tr>
<td>Fish</td>
<td>43.30</td>
<td>7%</td>
<td>53.9</td>
<td>9.20%</td>
</tr>
<tr>
<td>Milk, chese, eggs</td>
<td>126.25</td>
<td>20%</td>
<td>82.4</td>
<td>14.06%</td>
</tr>
<tr>
<td>Oils and Fats</td>
<td>19.94</td>
<td>3%</td>
<td>18.0</td>
<td>3.07%</td>
</tr>
<tr>
<td>Vegetables and fruit</td>
<td>205.33</td>
<td>34%</td>
<td>95.9</td>
<td>16.36%</td>
</tr>
<tr>
<td>Sugars</td>
<td>21.95</td>
<td>4%</td>
<td>41.9</td>
<td>7.16%</td>
</tr>
<tr>
<td>Drinks</td>
<td></td>
<td></td>
<td>50.9</td>
<td>8.69%</td>
</tr>
<tr>
<td>Total</td>
<td>596.81</td>
<td>100%</td>
<td>586.0</td>
<td>100%</td>
</tr>
</tbody>
</table>

SMF: monthly expenditure per family (in Euros)
MD: Mediterranean Diet
(*)Aliments are grouped according to ISTAT classification
ISTAT: Italian Institute of Statistics
and conversation. In addition, favouring the use of “0 miles” aliments, it adds value to local producers, such as farmers, breeders and fishermen.

I feel it is fair to add some further informations on the practicability of the Mediterranean Diet at every level, and to identify possible barriers. First of all, in the Northern European countries, where the majority of fruit and fresh vegetables are imported, there could be economical difficulties for those who earn low wages to grant their families 5 portions a day per person. And poor people, everywhere, necessarily adopt a diet rich in animal fats and low quality meat, which is the least expensive.

Also in Italy there are situations that make the adoption of the Mediterranean Diet critical. First of all, the influence of the US way of life and related feeding habits on the young generations; second, the pressure of advertising on the media, which are full of offer of carbonated beverages, hamburgers, fries and cookies etc, rich in sugars and saturated fats. We also consider as very negative the attitudes of young mothers who, instead of educating the youngster to healthy feeding habits, are driven by the preferences of their offsprings (at their turn manipulated by advertising messages on TV) to offer them unhealthy food, with negative consequence well unveiled by the “Okkio alla salute” (Focus on Health) national report 2014 (40): 9.9% of children obese, 20.9% overweight, a EU record.

In addition, it appears that in Italy the awareness of the strict relationship between diet and health is not yet very common; or, if present, it does not positively influence the behaviours (41). Finally, the widespread adoption of the Mediterranean Diet must take into consideration that at present up to 30% of the Italian population consumes at least one daily meal away from home, and this proportion will grow the future (42).

Conclusions

The Mediterranean Diet is the one which best combines environmental, health and economic sustainability.

It is supported by ancient knowledges, but its benefits have been scientifically proven recently.

It is characterized by the respect of seasonality, and by a very short distance between the place where its raw materials are originated and the place of consumption, which adds value to local producers.

The adoption of such a diet must be accompanied by a daily physical activity, and its components must be guaranteed to be genuine and safe by the network of public laboratories and public health services.

In addition to the controls, the public health services must promote positive lifestyles, including healthy diet for all but for primary school children first. This has been achieved a few years ago through the addition, within the Department of Preventions of the Local Health Units, of a “Nutrition” section to the Service of “Food Hygiene”, with the mission quoted above.

Such “Services of Food Hygiene and Nutrition” (SIANs in italian) are at present very engaged in promoting and disseminating the feeding model inspired to the Mediterranean Diet, especially among schoolchildren and their mothers. The Interregional program CCM entitled “Okkio alla Ristorazione” (“Focus on Catering”) (43), has established an operative network including the SIANs and catering companies with the goal of improving the nutritional offer in the canteens through the adoption of recipes inspired by the Mediterranean Diet, adapted to catering (31, 32): therefore, safe, nutritious and appetizing menus for all the thousand people who daily lunch away from home.

A further mission of SIANs is to avoid the so common waste of food and also to fight against superstitions and false certainties
which are so common in the world of food and nutrition.

It is necessary to disseminate positive passwords, suggesting to adopt variety in the diet, to alternate the different kinds of foods, to choose sobriety, conviviality and to recover the social and familiar role of sharing meals.

And, last but not least, in a World progressively becoming global, the populations should be educated to consider and to respect the feeding habits of the “others”, and possibly to learn their positive aspects, because some of them - the Asian cuisines - come from an ancient tradition of health preservation and some others - the East Mediterranean cuisines - share with us the UNESCO recognition as intangible cultural heritage of Humanity.

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