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## Editorial

## Food and human behaviour: consumption, waste and sustainability

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*We have a social and ecological duty to make sure that the food we eat is not a 'stolen harvest' (Vandana Shiva, 2001)*

The current global economic crisis implies new problems of knowledge and management of food and nutrition safety and security with respect to all their components.<sup>1</sup>

It is not by chance that the 2013 World Food Day theme, *Sustainable Food Systems for Food Security and Nutrition*, insisted that this fundamental aspect of daily life profoundly influences – as a risk or a protective factor – not only the health of each subject but the health of the planet as a whole.

From this perspective, the dynamics of consumption and waste assume a new meaning, especially in relation to the emerging idea of sustainability in food and nutrition.

Sustainability is *per se* difficult to reconcile with the prevailing food waste in our consumption patterns.<sup>2,3</sup>

The phenomenon of food waste, long considered a sort of inevitable *by-product* in our *society of abundance*, is very complex and, regrettably, even the most recent estimates reveal a growing trend. The challenge that the European Parliament has launched in proclaiming 2013 the *European year against food waste* is to reduce food waste – which amounted to roughly one-third of global food production – by 50% within 2025. Yet, this challenge has certainly not been met to much of an extent in 2014 and the current year, and the expected goal is actually very far.

In Italy, as in other developed countries and unlike developing nations, waste is more located downstream the agro-food chain and mainly affects the distribution stages, domestic consumption and consumption from commercial or collective services. In this sense, the so-called *food waste* can be considered to belong to two main categories of reference: i) it is called *unserved food*, which is made up of foods that are never distributed (and which, therefore, is potentially reusable *as-is*.) ii) It is called *food waste* if it is partially consumed and left as plate waste (and is not directly reusable).

Both of these represent a failure of food sustainability and a sort of *statement* relating to the way of excess in profit and consumption, with huge environmental, ethical and economic costs. Nevertheless, in this *societal* perspective, the average consumer and his own food choices also entail responsibilities.<sup>4</sup>

In this sense, the subjective as well as collective behaviours – both conscious and *sustainable* – assume a decisive importance in the maintenance of a safe and adequate diet for the population as a whole.

Food Sustainability can be considered the sum of two components: sustainable consumption and sustainable diet. The latter is nicely condensed in the definition of Burlingame and Dernini (2010): *those diets with low environmental impact that contribute to food security and nutrition and a healthy life for the present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, affordable and convenient; nutrition-*

*ally adequate, safe and healthy; involving the optimization of natural and human resources.*<sup>5</sup>

But our diet is only the terminal phase in the long and complex process of production, distribution and, therefore, consumption of food. And our current mode of consumption is strictly connected with the phenomenon of globalization of goods, commodities, markets, transport systems, and even people.

Such globalization, which means the cancellation of the space-time dimension, however, has not only resulted in a breakdown of geographical and political boundaries, but has established strict contact between different persons, dissimilar cultures, and ways of eating and feeding, in a way which is largely independent of governments and laws: in a reductive – but effective – manner, we could say that globalization has generated, in today's society, that all people (or, at least, all the persons who have physical, economic and social access to food) eat anything, and anything they eat is the same anywhere.<sup>6-9</sup>

This consideration (indirectly) finds confirmation in the *new* attempts to revitalize the local agronomic economies of certain, specific territories, through local systems and products as, for instance, the short chain, the zero kilometre, or, on a larger scale, the PDO and PGI foodstuffs, which represent the best of European agro-food production and the result of a unique combination of human and environmental factors, characteristic of a given area. The fact that a European law is necessary to protect these products is a clear signal that the world has chosen a different direction, and what was once the typical diet of local populations has become today, in the light of globalization, the elitist consumption of individuals who have the economic capacity to acquire such products, the price of which is higher compared to the same *standard* of the big distribution chain (GDO).

From this conflicting perspective, we can find a cultural key to understand food sustainability and the urgent need to support its development.

In fact, the optimistic era began after the Second World War, with the affirmation of fundamental human values and the promotion of international organizations to support them (see, in the field of food, the role of FAO). But this seems to be at an end or, even, at risk. In terms of food supplies, we are nowadays recording new occurrences of poverty and famine even in *unexpected* areas, as testified by the growing incidence of subjects who are malnourished or at risk of protein-energy malnutrition, which often coexists with diseases classically determined by hyper-consumption – obesity *in primis*. These are two faces of the same coin; namely, a risk stratification on the basis of socio-economic factors, where not only the amount, but also the variety of *healthy* foods tends to decrease and – in contrast – the energy-dense, low-cost foods become the first option for poor people.

The *globalized* society, therefore, is determining – in the era of crisis – the globalization of the causes of diseases.

In line with the historic report *Our Common Future* (1987, also known as the Brundtland Report after the President of the World Commission on Environment and Development), Food Sustainability

must balance three fundamental living dimensions: ecology, equity, economics, in a triple bottom-line approach that can integrate a vision towards the safeguarding of the environment, the protection of social values and, last of all, the economic reasons of development.

In human nutrition, any form of supply and consumption that can be maintained for an indefinite time span and for an almost unlimited number of generations would seem sustainable.

Within this picture, food security and food safety can be revisited in the light of sustainability: sustainability in access to sufficient quantities of food for the food needs of the communities and the individuals; sustainability as the ability to eat food products that do not cause harm to health and provide enough energy and nutrients in accordance with each individual's needs.

Regrettably, the recent estimates (FAO, The State of Food and Agriculture, 2013) are not encouraging: 12.5% of the world's population is undernourished in terms of energy intake; over 2 billion people suffer from the lack of one or more micronutrients; 26% of children in the world are stunted due to malnutrition. On the side of excess, one billion and 400 million people are overweight and 500 million obese.

The estimated costs of malnutrition, in all its forms, amount to \$ 3.5 trillion (5% of the total GDP of the world), about \$ 500 per capita for each citizen of the world.

Having to answer a growing demand for food, which aims to satisfy both the needs of those who do not eat enough, and those who eat excessively, the forecasts for the next decade claim that agricultural output is expected to grow by 60%. Is this possible? Is it a sustainable goal, after taking into account the population growth?<sup>10-13</sup>

In this context, Expo Milano 2015 Universal Exhibition *Feed the Planet*, where more than 140 participating countries are displaying the best of their technology, offers an important contribution to the *big discussion* of being able to guarantee healthy, safe and sufficient food for everyone, while respecting the planet and its equilibrium. The exchange of ideas and shared solutions on the theme of food can stimulate each country's creativity and promote innovation for a sustainable future.

Our world is, in fact, living a clear discrepancy in the vision of food sustainability, which implies different behaviours and decisions, both at the individual as well as at the public levels.

On the one hand, the orientation towards the so-called good and green approach; on the other, a techno-cultural vision, ecologically weak, which believes in science and its capacity to find any kind of solution for every potential environmental and social damage.<sup>14-16</sup>

We are largely operating in this second direction, but we must keep in mind that this poses a greater risk of irreversible changes, which could expose future generations to great problems.

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