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INDUSTRIAL FOOD – THE DAILY TOXIN SERVING

Case
Study

Keywords

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In vitro meat,
Organic farming

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Abstract

This paper presents the opposition between industrial and organic food. The method used focuses on an extensive documentation based on statistical data, documentary films, books and articles that provide us various information about the devastating effect of chemicals used by the food industry. Most of the documents used are based on case studies and concrete examples that condemn the current food industry, which “forces” the population of the globe to consume artificial food, (lacking vitamins and minerals), which, according to specialists, “keeps us alive but hurries the end”. In order to change this cruel reality, a growing number of activists (physicians, economists, biologists, chemists, etc.) fight to stop the food chaos created by the current food industry, seeking and offering viable solutions for protecting the environment and the public health.

INTRODUCTION

The prospect of world population increase from 7.2 billion up to 9.6 billion in 2050 (Chamary, V.J., 2011:55) brings to the forefront the issue of feeding, in a qualitative and sustainable way, of this huge mass of consumers. The problem is of unprecedented complexity, because even though we live in an era of overproduction (according to Kimbrell, A. - Founder and Executive Director of the Center for Food Safety) the level of hunger in the world is so powerful that 800 million people suffer daily from lack of food (Zaharia, C., 2013).

It is also about culinary conservatism, the reluctance of many to new taste and products, the enormous food waste, as well as the limiting monocultures. Thus, efforts are being made to find viable measures, strategies for a type of agriculture (the intensive one is neither ecological nor sustainable), a different attitude of the consumers towards food, in order to stop their waste, new paradigms of agriculture in the 21st century: the return to small-scale farming (referred to as “retrograde” by the large industrial agriculture), urban-vertical agriculture, palliative measures for the moment, but all these efforts to find solutions signal that a serious foods crisis is around the corner up to 2050.

FOODS – A FUNDAMENTAL NECESSITY OF PEOPLE

Regardless of the time of day or where we are at work, at home, at leisure, on vacation, we have to eat in order to survive. Nearly 200 years ago, Anthelme Brillat-Savarin, the famous French specialist in gastronomy, said that: *the destiny of nations depends upon the manner in which they feed themselves* (Honore C., 2008:64). According to Dr. Stefano Padulosi (researcher at the National Institute of Plant Genetics in Italy), although there are approximately 100,000 edible plants on the globe, mankind consumes around 150-200 of the edible agricultural products. Although there are so many edible plants, why is it that the variety of foods we consume is so limited? As can be seen from Table 1, a possible answer could be culinary conservatism, that is, each nation tries to pass down its own customs to future generations (Rădulescu, E., 2015: 91).

In addition to culinary conservatism, another reason for limiting the variety of products is found in the food production economy. In the 20th century, agriculture has undergone a radical change. The emergence of new technologies, the production of nitrate fertilizers and insecticides promised food in abundance and low prices (according to the documentary film, *The Future of Food*, 2009). Thus, with the introduction of

mechanization, it was proven that it is more profitable to own specialized vehicles only on a small variety of crops and, especially, on plants that are already well-known (Rădulescu, E., 2015:92-93). Even though every nation has traditional food, the globalization era allowed the invasion of supermarkets and local markets with food products lacking any nutritional value and which consumed regularly can have disastrous effects on the human body. For example, *in 2003, researchers at the Essex University estimated that the British paid taxes amounting to 2.3 billion pounds a year, in order to escape the harmful effects that industrial farming has on people's health* (Honore, C., 2008: 64).

FOOD OF THE 21TH CENTURY

Food, like any other activity, is under the command of haste. This aspect is also highlighted by how goods are produced nowadays.

The global food industry is structured so as to deliver high profit with low production prices, and food producers, transport companies, fast-food giants, advertising firms, supermarkets and industrial farms are interested to keep things going for them (Honore, C., 2008:85-86). Small farmers have begun to disappear, making room for industrial farming, which produces large amounts of fast, cheaper and standardized food (Honore, C., 2008: 62). The industrialization of food, although it may seem efficient, generates in fact massive risks that make the entire system extremely vulnerable. The problem with the current food industry is that food is *combined, mixed and redistributed so much that one single sick cow or a contaminated batch of vegetables can infect the food supply in just a few hours* with a devastating effect both at national and international level (Hilton, S., 2016:180-181).

Chasing cost reductions and profitability, industrial farming is one of the greatest threats to the health of the planet. Unfortunately, intensive farming is responsible for 70% of the world's freshwater losses, 80% of tropical and subtropical deforestation and 30-35% of human-caused greenhouse gas emissions (Royte, E. 2016:46). In a study conducted by the New Economics Foundation, in December 2013, it was shown that the environmental costs of the industrial farming system reached 7.2 billion pounds a year in the United Kingdom alone (Hilton, S., 2016:189). Despite these issues, those who support the current situation are of the opinion that industrial farming is the only way to feed the world population, predicted to reach 9 billion by 2050, which will limit the lands for crops. Their position seems logical: *we need to accelerate the discovery of methods to ensure that no one is left without sufficient food* (Honore, C., 2008:86).

AWAKENING TO REALITY

The World Health Organization estimates that at present half of the planet's population lives in the city and by 2050 it will reach 80%, which will require finding cultivable lands in the city. As this will be quite difficult, Prof. Dickson Despommier (American microbiologist at Columbia University) proposes the idea of "vertical farming" (examples: *Pasona O2*, located in Tokyo, *AeroFarms*, located in Newark, etc.) which involves growing plants in overlapping layers, lacking soil and natural light, the access to light being achieved either by rotation or by special LED lighting (Mueller, M. & Welch, A., 2015:36).

In addition to agricultural products, people also need animal products, in order to benefit from meat and dairy products. Animal farms currently occupy 30% of the land surface of the Planet (excluding glacial areas), and meat production is of 228 million tonnes/year. Unfortunately, the same method applies to meat as in the case of plants. Instead of producing and selling pure chicken meat, as most of us assume, *many conventional manufacturers inject all kinds of liquid filling materials (salt water, flavourings) and chemicals into the meat before packing, all for the purpose to improve the poor quality of the meat and to give it a superior taste...* (according to Huff, E. A., 2012). To meet future demand, the United Nations Food and Agriculture Organization estimates that annual meat production will have to double to 463 million tonnes by 2050 (Chamary, V.J., 2011:56). Thus, according to specialists in the biotech industry, one of the solutions is the genetically modified plants and synthetic meat, which, they say, have been invented to solve the food crisis. The UN Convention on Biological Diversity defines biotechnology as "*Any technological application that uses biological systems, living organisms, or derivatives thereof, to create or modify products or processes for well-defined purposes*" (FAO, 2000). Synthetic meat is not a new idea. In 1932, Winston Churchill, said: "In 50 years, we shall escape the absurdity of growing a whole chicken in order to eat the breast or wing, by growing these parts separately under a suitable medium." According to Dr. Vladimir Mironov, synthetic meat is also called "in vitro meat or cultured meat", which is obtained by isolating the stem cells taken from a living animal, the cells being subjected to a multiplication process and then transformed into muscle (Chamary, V.J., 2011:56). Synthetic meat (according to Dr. Matthew Cole) will also have sociological implications, because at first it will be an expensive and sophisticated product (Chamary, V.J., 2011:58). *For example, in 2013, the first cultured hamburger was created (under laboratory conditions) and it lasted for three months, and the total cost of its production reached over £ 220,000, although it weighed only 140 grams* (Knapton, S., 2016)

The numerous documentaries on the Internet and TV, the dozens of articles and books produced by scientists from various fields of activity (economic, medical, bio-chemistry, journalism, etc.) claim that industrially produced food is toxic. Unfortunately, consumers are deceived both in terms of animal welfare, using terms with human resonance: *fresh from the farm, natural product, fed with corn*, as well as the nutritional value of the food consumed. The food industry eliminates natural nutrients during processing and adds artificial nutrients in order to increase the shelf life of existing products (Hilton S, 2016:2014). Thus there is a significant number of scientists (Steve Hilton, Andrew Kimbrell, Fred Kirschenmann, Jamie Oliver, Carlo Petrini, etc.) who advocate for healthy food and sustainable agriculture, vehemently condemning the current food industry. According to Andrew Kimbrell, *„the biotech industry has done nothing for the consumer and there is no genetically modified food with additional nutritional value”*. One of the most ironic parts of the claim that the biotech industry will feed the world's population is that it has created a new technology called extermination technology. This technology is based on a suicidal gene that is introduced into the plant leading to the plant's self-destruction (according to the documentary film, *The Future of Food*, 2009). Why do we want to create such a destructive gene when the main objective is to increase the production of foods that would ensure the nutrition required for a growing population? Perhaps the true objective pursued by the biotech industry is in fact a financial and not a human one, which truly seeks solutions to meet the food needs of the world's population.

In order to ensure sustainable agriculture for improving the public health system and the quality of the environment, Fred Kirschenmann (Farmer and Director of the Leopold Center for Sustainable Agriculture) proposes an organic agriculture based on the following aspects: *use of local ecological resources, recycling of local resources, instead of using resources in another ecological system and using solar energy instead of relying on the import of oil or other resources* (according to the documentary film, *The Future of Food*, 2009).

To the question: *How could the world double its available food, while reducing the negative effects of agriculture on the environment?*, after analyzing various data on agriculture and environment, Jonathan Foley (Executive Director at California Academy of Sciences) proposes five steps that could solve the global dilemma of food (fig.1).

CONCLUSIONS

Currently, there are two completely opposite camps: one consisting of the food industry and the government that look at the financial aspect and the second camp made up of local farmers (suffocated by the food industry) and consumers entitled to information (correct and detailed product labelling) and a healthy life, which automatically implies the creation of safe foods that contribute to the harmonious development of the human body.

According to Jonathan Foley (2014), „*those who support conventional farming show that mechanization, irrigation, soil fertilization by modern methods and improved genetics can increase crop yields in order to meet the demand. ... In response, the promoters of local, organic farms say that also small farmers could also increase crops significantly – rising themselves out of poverty – by adopting techniques to improve fertility without synthetic fertilizers and pesticides. ...Both approaches offer painfully needed solutions, although none can solve everything on their own. It would be wiser to explore all the good ideas, whether they come from local and organic farms, or from the conventional, high-tech ones and combine what is best from each of them*”.

An important step in reducing the negative impact of the current food industry (which has led to: the destruction of agricultural land, dependence on genetically modified foods, increase of the number of sick people, ecosystem destruction, etc.) would be to stop subsidies granted to industrial food producers and subsidize farms that produce organic goods. We will be able to talk about a more human approach of nutrition (with no toxins, no repeated animal mutilation, etc.) only when we will start „*to demolish, and rebuild the entire food industry*” (Hilton S., 2016:174). This idea is also supported by the British Association Compassion in World Farming, the objective of which is the elimination of industrial farms by 2050.

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APPENDICES

Table no.1
Eating modes

<i>Examples of eating modes</i>	<i>Characteristics</i>
<i>Mediterranean cuisine</i>	High consumption of foods of vegetable origin: fruits, legumes, vegetables, olive oil, etc.
<i>German cuisine</i>	High proportion of saturated fats, which originate only from animal products: butter, lard, meat, cold cuts, etc.
<i>American cuisine</i>	High consumption of ready-made foods, the so-called fast-food products, which contain excessive amounts of low quality fats, hard spices and salt, but lacking in fibre, vitamins and micro-constituents.
<i>Japanese cuisine</i>	High consumption of food of vegetable origin: beans, soy, etc. A characteristic of the Japanese eating mode is frugality.
<i>Chinese cuisine</i>	It is distinguished by a high consumption of meat, eggs and oil and a low consumption of cereals and potatoes.
<i>Korean cuisine</i>	For millennia, the Koreans used to obtain proteins mainly from rice and soybeans. Currently, 50% of the protein comes from animal products.

Source: summarised by the author based on the information provided by Dr. Rădulescu, E., in the book entitled *Intelligent Eating*, 2015, pp. 86-90.

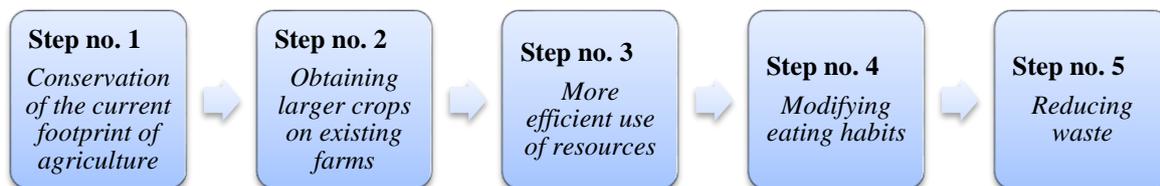


Figure no.1 Five important steps to solve the global dilemma of food

Source: made by the author on the basis of the information provided by Foley J. in the document entitled *Viitorul hranei*, [The Future of Food], available on the website: <https://www.natgeo.ro/dezbateri-globale/omul-si-viata/10130-viitorul-hranei>