

Food transitions in the 20th–21st century

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Abstract

Food transitions in history have been fast, violent processes in some cases, while on other occasions they have taken place slowly, overlapping the traditional food culture as food items are replaced by new ones. Despite the contribution of potato and maize to avoiding famine in Europe, the exclusive crop system caused serious problems. Main food transitions are currently taking place in Asia. Emerging economies face the dilemma of improving the health and well-being of the population while avoiding excess and surplus. The challenge is twofold: on the one hand, to counteract the negative effects of food transitions and, on the other, to fight against hunger and malnutrition.

Keywords
Food transitions
Malnutrition
Obesity

A 'food transition' can be defined as any change in food consumption and food-related practices in the population of an economically emerging country.

Food transitions in history have been fast, violent processes in some cases, while on other occasions the process has been slow, overlapping the traditional food culture as food items are replaced by new ones¹. Such was the case in past times in Europe, when potatoes replaced chestnuts and maize replaced millet. On other occasions, new food items are introduced thereby increasing the variety of foods in the traditional pattern. Food transitions are accompanied by other changes in lifestyle.

Different causes can lead to changes in food habits: a sudden event or phenomenon that disrupts usual life like the discovery of America or the French Revolution; a dramatic change in the economic situation (economic crisis); technological innovations in agriculture and/or industry; powerful campaigns in the mass media and publicity to introduce new products on to the market.

From a nutritional point of view, income is correlated to diet in a country. Fat and sugar consumption increases directly with increasing income².

Food transitions in Europe in the 16th–18th century after the discovery of America

Introduction of American products in the European diet was a slow process. Before the Discovery, the prevailing food items in southern European countries under Arab dominion, e.g. Spain, were olives, melon and mainly wheat. Main crops were sugar cane, olives and grapes (for wine production). The Arabs brought rice and oranges from India and introduced them into Spain and all

Mediterranean countries. Bananas were already grown in Arabia. Saracen wheat, asparagus, Abyssinian coffee and date palms were included in the Iberian food repertoire before the discovery of America^{1,3}.

Main crops brought from America were potatoes, maize, beans, cocoa, tomatoes, pineapple, vanilla, sunflower seeds, peanuts, avocado and yucca.

All of these food items were widely accepted. In fact, potatoes contributed to avoid famine and scurvy in Europe; yucca played a key role in wide areas of Africa⁴.

Maize became a staple in certain European regions and supplied the most to energy intake of the population. Despite the contribution of both potato and maize to avoiding famine in Europe, the exclusive crop system caused serious problems, such as the potato famine in Ireland and the many cases of pellagra⁵. This was probably the price for uncontrolled food transitions.

Food transitions in Latin America after the Discovery

The Discovery had an enormous impact on prevailing food habits in Latin America. This was particularly positive for the European (Spanish) population who settled there. Probably, the food items that had a major influence were bananas, wheat, meat, sugar, rice and coffee. Milk was a minority product only. Rice along with bananas contributed to the well-being of the poor in America. A whole list of vegetable products was introduced in American food patterns: carrots, garlic, onions, cabbages, lettuce, spinach, asparagus, chard, parsley, leeks, crest, beetroot, etc. Among other fruits, figs, peaches, melon, watermelon, pears, apples, citrus fruits, mango and banana are worthwhile mentioning².

Current food patterns in Guatemala show nowadays that 48% of calories are provided by non-American products; in Mexico the percentage is 55% and it is 75% for Peru, Brazil, Colombia and Venezuela. Conversely, among Native American populations and in poorer groups, food from American origin provides nearly 90% of calories in the average diet⁶.

Recent food transitions in Latin America

Food patterns in Mexico⁷ have undergone greater changes in the last 30 years than ever before, particularly to the benefit of the poor. Main changes include lower maize consumption and increased intakes of wheat (maybe pasta?) and rice, both in rural and poor city areas. The consumption of beans has decreased, while meat, animal products and soft drinks have increased. In 1981, for the first time in history, animal protein was higher than plant protein in Mexican food patterns, although the economic crisis thereafter reversed this fact.

A remarkable issue in modern transitions is the introduction of processed foods and sedentary lifestyles. Along with the changes in food patterns, changes in mortality rates have taken place as well; for instance, the prevalence of diabetes has doubled.

The Mexican situation is comparable to that in Brazil, Venezuela and other Latin American countries.

Food transitions in Asia

Main food transitions are currently taking place in Asia. Japan underwent enormous economic growth after 1950, i.e. after the end of the Second World War. Per capita consumption in Japan in 1910 consisted of 430 g of carbohydrates (rice and pulses), 13 g of fat and 3 g of animal protein. In 1989 the pattern was 190 g of carbohydrates and animal protein up to 42 g. In the same period, consumption of salt dropped from 30 g to 12 g per day. Many Japanese nutritionists believe these changes have been positive for the Japanese population⁸.

Southern Korea has followed important food transitions as well. In this country main changes have led to notably healthier food patterns with no significant increase in either fat intake or the prevalence of obesity. Income has increased enormously since 1960 to date in that country. In the same period, consumption of animal products has changed from 3% of calories in 1969 to 21% in 1995. Conversely, carbohydrates decreased from 81% to 64%; calories from fat increased slowly from 6.2% to 18.8%, half the figure in developed countries; while protein remained stable. Obesity rates in South Korea are low. The underlying reason for these favourable changes is the effort made to keep the traditional diet while introducing new products⁹.

Significant food transition is taking place in China due to important economic changes in the last decades. Nowadays undernutrition and overnutrition run parallel

in China. Birth rates in China have dropped as well. Per capita income has quadrupled between 1978 and 1987 in rural China^{8,10}. Recent dietary surveys show important changes, with increasing consumption of meat, sugar, eggs and fish. Hypertension, obesity and stroke are increasing as well^{11–13}. This is the big challenge for economically emerging countries.

Towards a uniform world diet?

Emerging economies face the dilemma of improving the health and well-being of the population while avoiding excess and surplus. This is not an easy task, confronting Nutrition Policies and Dietary Guidelines against publicity, technology and gastronomic hedonism. Balance among them should be achieved. Recent technological innovations have come into the arena to make the situation even more complex. On the one hand, 'functional foods' have drawn consumers' attention towards the importance of diet and health; on the other hand, controversy rages over 'genetically modified foods', plague-resistant foods, foods with improved nutritional value, etc., with a number of experts arguing against them as a potential risk to biodiversity and other issues^{14,15}. These developments have brought new challenges, where research on nutrient metabolism and the nutrient content of food are not only the important facts. Other factors such as sedentary lifestyles contribute to worsen the situation¹². Social changes as well as changes in family life play an important role.

In conclusion, in the second half of the 20th century food transitions have taken place in most countries, except for several in Africa, and very often co-exist with malnutrition, still highly prevalent in vast regions of the world. There is a twofold challenge: on the one hand, to counteract the negative effects of food transitions; on the other, to fight against hunger and malnutrition.

Despite wars, natural disasters, globalisation abuses, inequalities and social injustices, the 'global village' has improved most parameters over the past 50 years. There are still miserable areas, but the overall evaluation for the last 50 years is positive.

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