

The society beyond meat

Demographic and socio-economic changes make it difficult to predict long-term shifts - Part 1

Mandatory labelling genetically-modified foods sold in stores and fast food restaurants could radically alter the food industry. Genetically-modified ingredients are deeply embedded in the global food supply chain. The change since 1990 has been nothing but phenomenal. Most of the soybeans and corn grown in the Americas have been genetically modified, but it won't stop with corn and soy. Efforts are underway to harvest GM wheat, rice, fruits such as apples and bananas, as well as aqua culture salmon.

By Henk Hoogenkamp

Labelling the presence of GM foods or ingredients could potentially mislead consumers into believing that these foods are different from natural or non-GM foods or ingredients, and thus present a certain risk. The latter of course contradicts regulatory and scientific bodies like the WHO, FAO, FDA, USDA, and EFSA that have deemed genetically modified products safe.

Ultimately the consumers decide

There is little doubt that in the US at the federal level ultimately a bill will pass that would require labelling of bioengineered foods. The backbone of this labelling act is that American families deserve and have the right to know if food is genetically engineered. Such a bill would include claims that the process of bioengineering food organisms result in material changes to food derived from those organisms, an assertion that is widely contested including the FDA. It is also likely that proposed rulemaking would exclude from the labelling requirement, food that is served in restaurants, medical food or containing processing aids including yeast or enzymes. Whatever is said and done, ultimately it will be the consumers who decide if and when they are ready to accept GM-foods in their shopping cart.

The strategic shift of natural or organic food companies to mandate GM labelling will no doubt intensify the debate. Proponents of GM labelling insist that consumers have a right to know about the ingredients in the food they



Consumers need a clear labelling to make their decision whether to buy or not to buy a product.

eat. The biotech industry's opposing position states that labelling is unnecessary without scientific evidence showing that genetically-modified foods are causing health or safety issues.

Food processors and supermarkets are caught in the middle of the GM debate. They would rather follow the current legislative guidelines and laws, though they are not immune to the momentum of the growing number of consumer "activists" criticising the companies that fight or oppose the status quo of labelling

changes. Social media like Twitter and Facebook are inexpensive yet very effective ways for the activist consumers to make their views known. In the end however, it will be the consumer who will ultimately decide.

A shift from tradition

Since the 1980s, the world has witnessed an unprecedented shift away from traditional diets based on locally grown grains and minimally processed vegetables, fruits, and animal foods. Is the concur-

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Salmon sausage follows the trend to include more fish to the diet.

rent rise of the food processing industry marketing energy-dense foods with high levels of hidden fat and sugar a mere coincidence? Or is it the real culprit in the looming epidemic of belt-bulging diseases?

Dramatic changes in lifestyle will be necessary to create an environment for people to increase physical activity, as well as to improve availability of healthier food choices. Even drastic regulations to remove unhealthy over-processed foods and beverages from the market are now within reach as a viable option. For example, local authorities of New York City have tried to ban the sales of extra-large containers of sugar-laden drinks and McDonald's USA has voluntarily started to display the calories of food choices posted at the menu-board. This is a smart move because the governments will ultimately implement these regulations anyway.

Healthier eating is not just what is excluded but rather what is included. There is strong evidence that the diet needs to include more vegetables, fruit, fish, whole grains, plant-based unhardened mono/poly saturated oils, low fat dairy, and nuts or seed like walnuts and flaxseed. Another mantra is to eat less but more often with the daily calorie intake adjusted to the actual lifestyle. For example, a sedentary person should aim for approximately 1,600 calories a day and an active person 2,200 calories a day.

Another important rule is to adjust the calorie intake to the time of the day. Skipping on breakfast

is not smart since it is the time of the day when people are going to be most active. The opposite is true for dinner, wherein most people load up on the largest amount of calories while they are gearing down on activities.

Fats that are liquid at room temperature generally have better health benefits, especially polyunsaturated or monounsaturated oils coming from fish, olives, and rice bran. The oil from these sources can protect the body against heart disease and help control LDL and raise HDL cholesterol.

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In either case, the emergence of lifestyle foods that deliver both convenience and quality nutrition can be part of the solution. However, there are other factors that the world's food manufacturers need to consider. For starters, food companies in developed countries should promote and market smaller portion sizes, and also practice greater honesty about the composition of the food products they are marketing. Consumers have the right to be informed about trans-

parent and scientifically sound comprehensive food labelling, including the benefits and potential harmful effects.

Special attention should be given to the advertising campaigns aimed at children. Children are a vulnerable group, and food companies encourage them to eat outside of home by hawking the newest toys, gadgets, and kids' movie characters. Nearly one-third of US children aged 4 to 16 years old consume fast food every single day. It is not surprising that these children consume more fat, sugar and carbohydrate, and less fruits and non-starchy vegetables than those youngsters who don't eat fast food.

Reality is gradually sinking in; hence, policymakers are taking action to limit soft drinks and snack food sales in schools and to restrict food advertising aimed at young children. Finally, fast food companies are taking notice and proactively offer healthier foods, including vegetable protein formulated foods and a more balanced approach across the menu board with regard to calorie management.

It is of paramount importance that government regulators, health care professionals, and consumer advocates work with the food industry under the leadership of what might be called a United Nations Health Agency – a global FDA of some sort. However, the food industry should take a good look at itself and determine if society – their customers – reflects the image they want to portray. Probably not! The battle against obesity and food-related

degenerative diseases can succeed only through the combined initiatives of the public-private sector with the cooperation and the application of sound science.

Baby boomer foods

The current demographic makeup of the US and EU indicates that the "baby boomer" generation is the single largest consumer group. Age segmentation will have clear demarcation lines. In the United States, the population of people older than 65 will reach 90 mill. by 2050 – twice as much as that of 2000 – representing a staggering 25% of the total US population. A little closer than that date: in 2030, one in five people in the US and EU will be aged 65 and older.

Baby boomers born between 1946 and 1964 have started to turn 65 in 2011, and this group is blessed with considerable purchasing power, making them especially attractive for food and beverage marketers. However, as this cohort ages, growing physical limitations and other health-related handicaps will shift the food industry's focus towards specially formulated age-related foods. In fact, a few years from now, the baby boomers will have to get emotionally ready to consider special sarcopenia foods to prevent muscle degradation.

For food marketers, these demographic shifts will redefine the definition of old. Baby boomers will demand a prominent role in maintaining health and wellbeing. This primarily translates to retaining mental sharpness, no slow down by arthritis pain, and

keeping blood pressure and cholesterol under control. The objective is to add quality years to their lives.

Retailers will accommodate older shoppers with more visible signage and more accessible display shelves. Both food processors and retailers will likely be re-designing their product portfolios to make it easier for older people to remain active and independent later in life. Even though health foods are usually priced higher, such products like whole foods and nutraceuticals will enjoy formidable growth in the next decades. Consumers are more and more occupied with the demands of work and social obligations, thus seeking quick fixes to address health needs. As the Boomer generation gets older, foods that are perceived to bring added health benefits will likely be one of the fastest-growing consumer food segments in the coming years, especially foods targeted toward well-being, active lifestyles, and disease-specific remedies.

As affluent societies continue to age, the definition of "aging" will also change. Life expectancy has greatly increased in the last century and governments are adjusting their retirement and social welfare plans accordingly. Active adults nearing retirement age will have a strong determination to remain healthy as long as possible. However, current economic setbacks force policy makers to shift retirement age forward in order to keep social welfare affordable. New segments will be created for "superfoods" to address looming health issues, such as hypertension and other degenerative diseases. It is also expected that current health-care systems are no longer sustainable, hence, the aging generation will be using more of its funds to contribute for healthcare, including pharmaceuticals, and retirement support.

These demographic changes are also spurring changes in health-care systems. Infectious disease management, better public and personal hygiene, improved nutri-

tion, and increased physical activity are all contributing to lengthening average life spans. Lifestyle foods will be part of a new approach to "cure" long-term health problems and chronic diseases.

Maintaining brainpower

Mental sharpness or a healthy brain is vital as people age. For

this, Omega-3-fatty-acids present in fish can improve focus and decrease the risk of Alzheimer's disease while it lowers the incidence of heart disease, cancer, and other chronic diseases like eye health.

Keeping mentally fit is as important as keeping physically fit. Foods should have a positive impact on cognitive functions, such as alertness, mental focus, and



Trendy foods are designed to make it easier for older people to remain active and independent later in life.



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problem solving. Maintaining an active lifestyle may help delay or prevent cognitive impairment. Certainly, food segments that focus on cognitive-enhancing products will enjoy ongoing growth.

Specially formulated “cognitive foods” will likely focus on the following areas: antioxidants, fatty acids, micronutrients, and botanicals. This is because the brain is vulnerable to damage from oxidative metabolic processes. There seems to be a clear link between age-associated cognitive decline and diets with low amounts of antioxidative nutrients, such as vitamin C, E and beta carotene (vitamin A). For all of these objectives, rice bran and its spin-off compounds provide healthy solutions.

About 20% of the body’s energy is required by the brain to give it a sense of alertness. With optimal cognitive functioning, the same can be said about maintaining an adequate iron status. The elderly are at increased risk for deficiencies of folate as well as vitamin B6 and B12 intake. This can cause increased serum homocysteine, a biomarker for vascular damage.

Assessing a lifestyle tax

Is it fair to make people with unhealthy lifestyles foot part of the bill for healthcare coverage? Heavy smokers have already set a great example by providing state and local governments with billions annually in tax windfalls. Revenue-thirsty lawmakers are now target-

ing soft drinks and other unhealthy foods linked to degenerative diseases such as obesity and adult-onset diabetes. Should “liquid candy” like soda pop or other sugary soft drinks and fat be taxed? Probably, because these products are closely linked to the development of obesity which increases the risk of heart disease, cancer, diabetes, and many other expensive-to-treat diseases.

Treating these illnesses demands a huge share of medical costs, and yet little is spent on preventing their onset. It is difficult to single out a specific food or beverage segment for creating tax revenues because once that process starts, there is no logical end to what can be taxed by cash-strapped governments. “Lifestyle taxes” will certainly stay in the political arena in the coming years, and it will not be surprising if those in opposition will hinder their implementation with much debate or political fanfare.

A subtle trend is developing in certain circles of society that shows not only tobacco companies but also the processed food industry as public health menace. This equation is basically true if the heavy toll on public health by a poor diet is taken into consideration and when it is compared to tobacco. No doubt, eating junk food can become addictive especially since salt and fat are pleasing to the taste buds. Add to that crunch and sugar and it becomes hard to control compulsive eating.

Compulsive eating and overindulgence are closely associated with packaged or prepared processed foods and drinks. But even though large food and fast food companies act responsibly by offering products that are healthy, most people still don’t want to trade superb taste for imperfect-tasting healthy foods.

This year, one in three adults in the US will be considered clinically obese. Even more troubling is that one in five children are obese with some 24 mill. Americans affected by T2 diabetes, while a staggering 80 mill. Americans have pre-diabetes. It doesn’t stop here: the “rich man’s disease” or gout – a painful form of arthritis – has made a comeback afflicting approximately 8 mill. Americans.

There is no doubt that obesity, T2 diabetes, hypertension, and gout are associated with sugary, salty, as well as fatty foods especially when there is also a fundamental lack of physical exercise. Convenient and inexpensive foods, along with the poor consumer willpower, are the primary reasons why obesity and their health-related diseases are spiralling out of control.

Overweight obsession

Obesity is a very complex issue caused by not only the consumption of too many calories and insufficient physical activity, but also factors such as genetic make-

up, behaviour, metabolism, culture, environment, and stress.

Until some new wonder drug arrives that can melt away excess weight, people have no other recourse but to do something proactive to reduce their ever-expanding waistlines. Biologically speaking, obesity is the result of an imbalance between energy input (food intake) and energy expenditure (activity). That’s the easy explanation. The issue becomes far more complex, however, when the causes of one of the currently leading global health problems are examined. Nevertheless, food remains central to understanding both causes and solutions. People with a Body Mass Index (BMI) of 30 and greater are considered obese – usually around 15 kg (33 lbs) or more of a healthy weight.

The United States represents an example of how modern society is misusing the true meaning of food. An alarming number of Americans are now considered overweight or even obese, as their waistlines are expanding faster than those in other parts of the world. However, obesity is no longer unique to Western countries since it is also becoming commonplace such as the Middle East.

It is a fact that the last 30 years have seen the emergence of an environment that combines sedentary lifestyles and consumption of foods that are high in fat or energy-dense foods. The results are predictable. In addition, there is a distinct trend toward overeating. Prosperity is a key part of the problem, as well as other factors, like the lack of physical exercise and a serious reduction in routine activities such as walking. Society is changing rapidly from an environment where people work physically to a large group of people who sit all day working at a computer, smart-phone, iTablet or glued to the TV watching cooking shows or sports entertainment.

For example, about 25% of all American women do not engage in regular physical activity, while more than 60% of all women fall short of the recommended amounts of activity. This translates into a sedentary lifestyle for well over 50% of the American population, who are getting no physical exercise whatsoever. In-



If snacks are offered as healthy most people don’t want to miss a superb taste.



New ingredients make it possible to develop products, which help to balance the energy input and energy expenditure.

creasingly, lifestyle change experts argue that physical activity will most likely have far-reaching consequences in preventing coronary heart disease.

However, there is a growing lack of formal and informal nutritional education with the abundant availability of fat and sugar-loaded foods the whole day, along with the lack of fitness. Franchised fast food, gas stations, family restaurants, as well as a growing number of home meal replacement products, are all providing belt-straining meals. The result: six out of ten Americans are overweight or obese, and this category of people has started to impact the entire food industry.

The Centers for Disease Control and Prevention states that obesity among Americans will grow from about 33% of the present population, to at least 44% by 2030. Some states such as Mississippi will have adult obesity rates over 60%. If this trajectory continues and statistics are extrapolated, large groups of the American society will develop preventable diseases that will dramatically affect the quality of life. Perhaps it is too late to prevent the looming and skyrocketing health-care costs for the staggering 72 mill. people in the U.S. that are currently obese. Obesity is equally prevalent in men and women. In contrast with other health-related illnesses, obesity is preventable starting at home or basically at the food checkout counters. There is

also a growing body of research to suggest that insufficient sleep may contribute to the rise in adolescent obesity. Sleep deprivation is related to an increased Body Mass Index because it increases levels of hunger hormone that could lead to overeating and weight gain.

Obese adults are more likely to report having joint pain, heart conditions, high cholesterol, and diabetes T2 as compared to people with healthy weight. As a side note: nearly half of all women older than 50 will have an osteoporosis-related fracture during their lifetime.

People tend to under-report their weight and over-report their height. Looking at historical CDC data, it can be concluded that American obesity rate was stable from 1960 to 1980 with about 15% of people being obese.



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