

ARE NATURAL AND ORGANIC FOODS ENVIRONMENTALLY SUSTAINABLE?

by Henk Hoogenkamp

The emerging young American generation increasingly rejects artificial dyes, flavourings, preservatives and GMO, and demand food formulated with ingredients they recognise and are, preferably, of natural origin. Sales of many legacy or mainstream brands known to make processed food with artificial ingredients and additives have suffered, while many startup entrepreneurial natural-food companies have grown. It seems the bigger the food company; the fewer consumers trust it.

It has been said that food companies turn additives and ingredients into food products. Food and ingredients that give the impression

also be said that the perceived naturalness is often synonymous with premiumisation, attracting customers who have the means to afford these food products.

Consumers perceive foods with any "free-from" claim to be both healthier and less processed. Although the fear of artificial dyes and preservatives lacks scientific basis, consumers have been pushing to have these eliminated from the ingredient line-up.

The large food establishments are working overtime to reformulate and are trying to get their lost market share back. It is not easy to find acceptable alternatives and

ingredients, including traces of GMOs. Even the US Food and Drug Administration have a rather weak and non-binding description of a natural food product.

The current policy for the term "natural" on food labels is vague and leads to misinterpretation, and misuse of the term. Generally speaking, it will be difficult to categorise foods as "natural" based on the degree of processing. If the definition of "natural" is limited to unprocessed foods, very few foods will be labeled "natural".

It won't be easy for the FDA to define "natural" – a much-used ambiguous marketing term. Consumers often confuse the terms "natural" and "healthy." "Natural food" makes the consumer believe there are no hormones, antibiotics, chemicals, GMO and synthetic vitamins, or GM-derived enzymes. However, with the current legislation in hand, no guarantee is given. Whatever the definition chosen, the term "natural" should avoid any misinterpretation.

Although to date the terms "natural food" and "clean label" have no legal definition, an increasing number of new food introductions use these expressions and tout recognisable authentic ingredients that sound natural and healthy.

The "free-from" category is continuing to grow globally, including an increase in interest in GMO-free or non-GMO foods. Especially in the US, the GM-tide seems to have changed in recent years with many premium product launches featuring GMO-free claims.

Consumers see "natural or organic food" as good and "processed food" as bad. The "clean eating" trend has inspired a back to basics approach in food development. "Free-from" and "flexitarian" options lead the way and existing products are upgraded to meet the new market demands for healthy and tasty food. An increasing number



that they are "natural" and have not been processed too harshly are of great appeal to consumers. There is little doubt that the big American food companies are in the midst of a public relation crisis. The prevailing sentiment of the Millennial consumer is that their mental picture of hyper-processed robotic-made food is not in sync with the expectations of their evolving lifestyles, and this provokes fears about the true composition of these products. In other words, modern consumers are increasingly approaching processed foods with a skeptical eye. It should

for some legacy food companies, it is even frustrating that after years of technological advances to make packaged food cheaper, more flavourful and longer lasting the pendulum is now swinging back. A déjà-vu of the good old times.

What Defines "Natural Food"?

The greatest downside for natural and or organic food products is its lack of a regulatory definition. "Natural" or "Organic" brands can be especially weak when the products contain "non-natural" additives and



of consumers think non-GMO foods are inherently healthier.

Breakout GMO Legislation

Sales of non-GMO natural and organic foods are growing at a faster pace than sales of gluten free products (2011-2016). Even gluten free food sales are now cannibalised by the growth of organic food sales. There is an aggressive move by the large food retailers into natural and organic.

Some individual US States are contemplating introducing their own breakout legislation, forcing the FDA/USDA to propose a voluntary non-GMO certification and labelling initiative.

Pressure is building with the help of public initiatives to force governments -most notably in the US- to legislate mandatory GMO labelling. If governments do not take regulatory action, chances are that a patchwork of individual company-orchestrated food labels will be introduced that will be very confusing and far removed from a unified model.

Both consumers and industry debates about foods that contain genetically modified ingredients are heating up. Products certified as containing no genetically modified organisms are proliferating and often without a clear and concise verification process. For the dairy industry, there is a strong link between GMO-free and organic marketing and often, dairy products can choose from either option.

To confuse consumers even more, food companies are adding "non-GMO" words on products that would never be considered in need of such labelling. But what about companies that use GM-modulated enzymes in non-GM foods, including natural food and organic food? These (hidden) practices are clearly a huge topic for debate.

But even if non-GMO products successfully pass the identity verification process, a non-GMO seal of approval can still inadvertently create confusion among consumers about the value and meaning of the organic seal. The organic seal is an assurance that food is grown without synthetic and toxic chemicals and is good for ecological and environmental parameters, in addition to being non-GMO. Most consumers do not know the differences between non-GMO and organic and this confusion is growing.

Is Organic Sustainable for Healthy Diets?

Developing in-house brands that consumers will perceive as authentic and healthier has been a major challenge for legacy food companies. The lack of entrepreneurial spirit is the main reason why most of these titans are forming venture capital offices with the aim to acquire promising start-ups. Legacy food companies can ill afford to sit on the sidelines as entrepreneurial-driven companies take market share for consumers seeking minimally processed "free from" clean label and environmentally sustainable foods.

There is no doubt that organic food has become a lucrative business in affluent

countries. For most food stores, organic produce and foods translate to premium profits. The organic food story has primarily become a professional marketing business, far removed from hippie initiators in the 1960s. Giant agricultural legacy food corporations such as Kraft, General Mills, Cargill, and ConAgra have now acquired many organic food companies. Anxiety is growing in some organic companies that corporate money will squeeze out the entrepreneurial spirit and reduce the essential values of their food.

With these changes, the integrity of organic foods is increasingly coming under pressure. "Processed organic foods" in itself can be seen as a contradiction in terminus considering that additives and ingredients like, for example, carrageenan (a seaweed derivative) - classified as non-organic - can still be used in products that are certified organic.

The number of organic farms and the market size for organic foods has steadily increased since 2000. Despite critics who dismiss organic agriculture as an inefficient approach to food security, organic foods will be of increasing importance in global food and eco-system security. Organic farming need better protection by government policies as well as financial funding to support increased research and breeding resources to allow wider adoption of organic agriculture.

The current demand for organic foods is greater than the supply and is linked to

the reach of large corporations – including their financial motives – which will increase pressure to relax the stringent certification rules and standards. For example, there is a strong push to approve non-organic additives such as sodium bicarbonate (baking soda) to prepare organic bread and pastries. Compared to 2002 when 77 non-organic additives were allowed, the list has grown to some 250 nonorganic compounds in 2016. In a very special way, organic has become a victim of its own success. It is estimated that in 2016 about 4 percent of all foods sold in the US will be organic.

There is little doubt that -over time- the definition of organic food will gradually change. What about the use of genetically modified biotech enzyme additives like docosahexaenoic acid algae oil (DH) or single cell oil produced through nanotechnology? Increasingly, these and more similar additives will find their way into the organic foods that are treasured by numerous consumers who want to feel good about food and do not mind paying much higher prices.

Ultimately, this question must be answered: How sustainable is organic agriculture? Environmental sustainability includes the promotion of ecological balance and biodiversity, as well as soil and water health. However, it excludes the use of synthetic fertilisers, pesticides, antibiotics and hormones.

What about the labelling of food as “organic” if non-renewable fuels are used for agricultural growth, harvest, and transport to the point of consumption? What about “organic” milk if cows are not partly fed by grazing in an open pasture but by full-time housing in covered feedlots?

The affluent consumers’ interest and attention for products that do not contain genetically engineered ingredients are growing rapidly and changing constantly. Sales of “organic” and “natural” foods are growing at a

faster pace than sales in other categories. While the word “organic” can be narrowly defined, “natural” food leaves lots of room for different interpretations. For example, can food retain the status “natural” if it is processed and when artificial additives are used to increase shelf life, improve flavor, taste, and health attributes or when it contains biotech ingredients? The answer is not easy - a barrage of lawsuits will most probably fight this issue with special interest groups on different sides of the issue.

Is Organic Environmental-friendly?

Over-utilising certain resources like clean water will accelerate depletion, which could eventually become an issue for organic certification. Farmers, food producers, supermarkets, consumers, and special interest groups like environmentalists each have their agenda.

Further growth of the organic category will expectedly increase tensions in choosing which definitions or specific pathways to follow. For example, it is very expensive to grow organic produce in the US during winter months. Greenhouses are typically energy guzzling, not to mention labor cost intensive. A tomato picker in Florida may

earn \$80 a day compared to \$10 a day in Mexico. These differences, such as the rapid depletion of groundwater at the expense of the environment when cultivating organic produce in certain low-cost areas like Mexico and Honduras, are not usually communicated to the end-user.

Related to organic foods is the issue of greenhouse gas emissions. When discussing the virtues of plant-based diets, environmental activists often cite better health and less greenhouse gas emission as the main advantages. Is this true? Although plant-based diets are considered healthy, the issue of net-greenhouse gas emissions associated with food production is debatable in the very least. It is true that the productions of animal foods like meat, poultry, dairy, (land) farmed fish, and eggs are associated with higher levels of greenhouse gas emissions compared to vegetables and fruits. But it is also true that livestock can be kept on land not suitable for crop cultivation. These differences need to be taken into consideration when discussing environmental issues as well.

Digging a little deeper, plant-based diets are typically low-energy and are defined as high in vegetables and fruits. However,



low-energy foods are often associated with higher amounts of waste. The net-greenhouse gas emissions are not much lower compared to animal-based foods or high-energy diets such as dairy, sweets, nuts, salted snacks, and meat. Diets of the highest nutritional quality are therefore not necessarily the lowest in greenhouse gas emissions, thus, what is good for the health is not always good for the planet and vice versa.

Subsequently, for foods, the nutritional value relative to greenhouse gas emissions needs to be taken into consideration. For example, animal-derived foods like dairy and meat are associated with higher emission levels than sugar; they are also more nutrient dense. In other words, testing the relationship between a food's nutrient profile and their carbon footprint can help those food groups that provide both calories and optimal nutrition at low carbon cost. In many cases, foods associated with a higher carbon emission –such as meat and dairy– are also some of the most nutrient dense. It is clear that in the future a healthy planet will need a balanced carbon footprint to provide optimal nutrition.

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