

Master class

“In Defense of Food” by Michael Pollan

Michael Pollan recently wrote an open letter to the presidential candidates of the United States in which he calls for reforms of the complete food chain. During the Master class Michael Pollan explains his vision of transformation to a food chain that works on solar energy. He describes a clear picture of the social costs and consequences of our food choices and current agriculture system which is heavily based upon fossil fuels.

Leaders for Nature organised together with Biologica this Master class. It was hosted by the Triodos bank in Zeist. Arjen Bos from Engage! was the facilitator of the event. The turn up was high with almost 100 participants working in various sectors active in several aspects of the food chain.

In this PDF you are able to find:

1. Highlights of the Master class
2. Summary of the open letter (partly discussed during master class)
3. More information about Michael Pollan and his writings



Highlights of the Master class

Michael Pollan sees himself as a curious writer, one whom is more focused upon asking questions instead of providing answers; by asking questions this he wants to stir up things and stimulate people to think for themselves instead of telling people how to think.

Pollan follows essentially the story behind our food; from our plates to where it begins. During 45 minutes Pollan shared with us some of his anecdotes about the food industry in the USA and what made him push towards only solar based agriculture.



¹ Feedlots are officially called CAFO's in which animals are bred. They are fed 24/7 and eat 90% of the time corn instead of grass which they are built for by Nature. The cows are kept alive with antibiotics (produced by e.g. Monsanto who also produces fertilizers and pesticides). In addition, the cows are injected with hormones so they grow faster. This makes a hamburger cost less than 1 US\$.

² Leaders for Nature organized an Inspirational Meeting with Bryan Smith in which he explained the absolute relevance of system thinking with respect to sustainability. For a report on this meeting go to www.leadersfornature.nl

“Monsanto asked me to visit one of their clients – being a farmer – to write about the genetic modified potato that killed insects. The question I asked myself was “is this good or bad for the environment?” In Iowa, USA, the majority of potatoes is grown for McDonalds. It is a monoculture with only one type of potato divided into crop circles of 70 hectares. One farmer has about 17.000 hectares of land. The irrigation system is automatically controlled with only one press on a button and regulates the amount of water, pesticides and fertilisers. Without this system the crop would die within a couple of days. To prevent the potato to get a fungus called ‘net necrosis’, a pesticide with a high level of neurotoxin is used which is that strong that the farmer himself does not want to walk on his land for 5 days after irrigation. Nice anecdote; the farmer grows his own biological (!) potatoes for him and his family.



A similar example can be found in the meat industry. In the USA huge breeding farms the so-called feedlots with about 75.000 cows can be found. Cows converting pyramids of corn into pyramids of manure.

These two examples will end up on your plate as being the “Hamburger and Fries”. Pollan realized that he did not know where all his food came from. “The way food is sold, differs dramatically from the way it is produced.”



This made him decide to continue his research about food and its origin. Michael choose to follow a McDonald’s meal; the chick nuggets, hamburger, soda and its French fries. Turns out that all ways lead to corn; which is fed to the cows and used in frying fries (50% of the calories of fries comes from the corn oil it is fried in). Soda is for 99% made out of corn carbon (corn syrup) and chicken nuggets have 80% corn carbons.

How we got there?

Key reasons how it was possible that corn took over the food industry are:

1. Hybridizing corn; cheap investment and very productive and easy
2. Fertilizers like nitrate; increases production of corn. An anecdote; after WWII the US government stimulated the change from bomb making plants into fertilizer plants for they used the same basic material; nitrate. Same for pesticides which are made from nerve gasses.
3. Subsidies; stimulates overproduction and creates a cheap-food economy. An anecdote; costs for producing corn are twice as high as what it is sold for thus farmers heavily depend upon subsidies.



The overproduction of corn has led to search for alternatives to use corn for. This resulted in the production of Ethanol. It is thus not invented to save energy simply because it doesn't taking into account the amount of fossil fuel that needs to be used to produce a bushel of corn.

The consequences for producing cheap food are:

1. Environmental costs; farmers use twice as much fertilizer then necessary to insure production. This e.g. results in "blue baby alert" caused by rain falls that wash of fertilizers and ending up in among others in the Mississippi river, Gulf of Mexico and drinking water. The heavy usage of fossil fuels during the complete food chain, the agriculture business contributes to 1/3 of the climate change.
2. Public Health; cheap food makes it possible to sell large portions. This caused an increase in e.g. obesities, diabetes and heart failures. Furthermore, due to poor conditions in the giant feedlots¹ mutation of bacteria is caused. Followed by poor slaughtering methods and speed of the meat processes manure, in which the E-coli is found end up in the food chain.
3. High costs; the government pays 4 to 5 billion USD per year to produce cheap corn. In addition, costs for pubic health are raising due to obesities, diabetes and heart failures poor public health situations. Moreover, there is an increase of energy costs. Fossil fuels are used for fertilizers, harvest processes and feedlots, transport and processing of corn into Ethanol. Back in 1940, for each calorie of fossil fuel, 2.3 food calories were produced. Now we need 10 fossil fuel calories to produce 1 food calorie.

Illustrating the importance of system thinking², the consequences of starting Ethanol production can be mentioned. "Last year world prices for food increased which was for 30% to 35% caused by the decision of Mr. Bush to start producing Ethanol simply because farmers began to produce less soy, grain and plants."

Summary of open letter to President-to elect

The different elements of the open letter "In Defense of Food" to current president Barack Obama are:

- How we got there (discussed above)
- I. Re-solarising the American Farm
- II. Re-regionalising the Food System



- III. Re-building America's Food Culture

All issues the presidential candidates were talking about address the food economy; national security, energy, climate change and health care.

How to change?

In order to change the food industry we should take advantage of initial nature aspect of food namely photosynthesis. In other words move from fossil fuels to solar energy. Government can surely help to this adaptation or change. The reform has three steps:

1. Farm & Re-solarising (photosynthesis)

- a. Mimic nature. Nature solves the issue of fertilization and pesticides through biodiversity thus by stimulating a polo-culture production. Argentina proved to have good examples of such production methods which can easily be copied by farms in Iowa.
- b. A government policy should then be rewarding farmers for diversity and for days of the year that fields are green. Or pay the farmer for the amount of carbon in the ground instead of giving incentives like subsidies to produce soy and corn below its cost price.
- c. Bring animals back to the farm instead of having feedlots which results in pollution and not of fertilizing land.
- d. Increase the number of farmer through good education and changes in regulation that make being a farmer more attractive

2. Market & Regionalisation

- a. Gives more possibilities to mimic nature and to stimulates the benefits of photosynthesis
- b. The food will be closer to its eater, resulting in fresher products and requires less processing.
- c. The bigger and more global trade in food, the more vulnerable the system is to catastrophe
- d. Government policies can 1) provide grants for indoor farmers markets including local distribution networks 2) decrease regulations of food-safety for small scale marketplaces 3) increasing inspection at big meat processors and stimulate regional slaughter facilities 4) establish a strategic rain reserve (...)

3. The eater & Its food culture

- a. Provide proper meals in schools and teach students the importance of good food.
- b. Government policies are 1) demanding complete traceability of the



food chain through usage of technology for telling the story of products 2) including a calorie count indicating the number of calories of fossil fuel used for the product 3) launch a public campaign communicating a message of nutrition to the people and 4) be the example

“It is hard to fight against cheap food. Governments don’t like food prices to rise. In the USA we are taking care of it by producing cheap corn and increasingly by the production of soy”. Corn provides the energy, soy the proteins. However, promising changes are seen too; cooking programmes and Chefs enjoy growing popularity and turnover of biological products are increasing as well.



[More information about Michael Pollan and his writings](#)

Michael Pollan is a contributing write for the New York Times, is Knight Professor of Journalism at the University of California, Berkeley.

He is author of the books:

- [In defense of Food: an eater’s manifesto](#)
- [An omnivores dilemma: a natural history of four meals](#)
- Second nature
- The botany of desire
- A place of my own

To view the Tegenlicht broadcast:

<http://www.vpro.nl/programma/tegenlicht/afleveringen/38243331/items/39110867/>

For the open letter please visit:

<http://www.nytimes.com/2008/10/12/magazine/12policy-t.html>