



*New thinking about what we are eating*

## **Discussion Guide**

# Table of Contents

- Filmmaker’s Introduction .....3
- Film Summary.....5
- Questions before and after screening the film.....6
- Further activities to explore.....14
- Personal Sustainability Practices Template.....15
- Social Action Suggestions.....16
- Glossary of terms.....18
- Additional Resources.....21

# Filmmaker's Introduction

## Filmmaker Ana Sofia Joanes:

### Why I made the film?

*"I first started thinking about making FRESH after reading a three-part article in the New Yorker about global warming four years ago. I had been avoiding reading the series, the way I try really hard to ignore the news. I figured that I knew about global warming and didn't want to feel scared and guilty about how little I did to combat it or how much I contributed to the problem. The article's dire exposé of the complexity and extent of the problem left me feeling like a powerless and hopeless observer, watching the world spiraling towards its inevitable destruction. I also realized that it was these very feelings that were responsible for my inaction. When confronted with such large and complex problems, it's hard to see the meaning of, what appears like small inconsequential individual action. So I embarked on the making of FRESH to recapture a sense that my individual actions do in fact matter."*

*"Initially, I intended to document the urgency of the global warming crisis, hoping to scare others and myself into taking action. Instead, I encountered the most inspiring people, ideas and initiatives. Who knew that we already had the solutions to so many of our problems and that some of us were already hard at work implementing them? Instead of the despair and inaction unwittingly fostered by the media, these examples of change suggested a very different perspective. Life is an indivisible network in which every node is critical. Each one of us is creating the world we are living in. It is this creative process that gives our life meaning and pleasure."*

### Why focus on food?

*"FRESH focuses on food because food is a central part of our social and cultural fabric. We can instantly observe the consequences of the changes in our eating habits, not only in our pleasure and health, but on the vitality of our local economy, on our community and in the environment. Food is thus a powerful entry point to exploring the ills of our time while focusing on the possibility of change. Indeed, our food system represents a microcosm of the problems we are facing as a society – the over-reliance on oil, the depletion of our natural resources, the pollution of the environment, etc. But more importantly, our food system provides an amazing showcase of how to bring about solutions to the challenges we face. The sustainable food movement is grassroots, vibrant and innovative. The solutions it offers go far beyond transforming our mode of production; in fact, the sustainable food movement proposes a whole new vision for the future."*

### What actions do I want to inspire in the audience?

*"It is precisely the transformation from inaction to empowerment, the very transformation I went through making the film that I want the film to offer to audiences. A sense of urgency comes from audiences feeling empowered to draw their own*

*conclusions and make their own connections. This is a big part of why the film has no narrator, no single “authority figure” voice. The characters themselves suggest links between their experiences and efforts, but it is the audience who I ask to fill that critical role of completing those links – making them concrete and actionable. I want audiences to engage by discussing the issues, finding out what’s going on in their community and getting involved.”*

*“FRESH portrays a movement that is happening in America and worldwide. I want people to believe that change is always possible, even when it seems hard to imagine. The alternative food market still only makes up a minuscule percentage of the food economy. However, it is the fastest growing market in the United States and it’s incredibly energetic. We can’t know when or how we will reach a tipping point and how it will manifest. It is good to remember that even the most dramatic societal changes such as industrialization, did not happen over-night. Yet they completely transformed, not only our “mode of production”, but how we think, how we feel and how we relate to each other.”*

### **What hope is there for food in the future?**

*“I believe a dramatic shift in our paradigm might have already started. Whether it will prevail and where it will lead us, I don’t think I can know. I like to remind myself that both cynicism and optimism are equally righteous. We don’t know what the future holds. But hopefulness is simply the knowledge that change is possible and that we can participate in it. Lin Yutang, a Chinese writer and inventor, said that “Hope is like a road in the country; there was never a road, but when many people walk on it, the road comes into existence.”*

## Film Summary

FRESH celebrates the farmers, thinkers and business people across America who are re-inventing our food system. Each has witnessed the rapid transformation of our agriculture into an industrial model, and confronted the consequences: food contamination, environmental pollution, depletion of natural resources, and morbid obesity. Forging healthier, sustainable alternatives, they offer a practical vision for a future of our food and our planet.

Among several main characters, FRESH features urban farmer and activist, Will Allen, the recipient of MacArthur's 2008 Genius Award; sustainable farmer and entrepreneur, Joel Salatin, made famous by Michael Pollan's book, *The Omnivore's Dilemma*; and supermarket owner, David Ball, challenging our Wal-Mart dominated economy.

# Questions before and after the film

## Questions before screening the film

1. What kind of food do you eat and why?
2. Where does the food you eat come from?
3. How is your food grown and by whom?
4. How fresh is your food?
5. Have you ever planted your own garden and tasted the vegetables? What did they taste like?
6. What is a food system?

## Questions after screening the film

### 1. What is conventional agriculture?

*Prof. Ikerd: "It's all about maximum short run production efficiency. Like a factory process. When you find something that works well then we continue to use it because it works so well. Then we say we begin to apply the same kind of paradigm, the paradigm of industrialization: specialization; standardization; economies of scale. We begin to apply it to everything. And it doesn't work on everything."*

Conventional Industrial agriculture applies the tenets of industrial production to the production of food. Here's an example: think about a factory making only plastic bottles: it only produces one product, plastic bottles (specialization); machines mostly do the work in order to produce more faster and to cut down the cost of labor (mechanization), and it produces A LOT in one location (economy of scale).

In agriculture, the industrial mode of production translates into monoculture, the practice of producing or growing one single crop over a wide area. Factory farming is also a form of monoculture, where large numbers of the same animal are raised in close proximity.

### 2. What are the risks and consequences of conventional agriculture – to the environment, to your health and to the community?

*Michael Pollan: "Monocultures are very dangerous things... Nature doesn't have monocultures. When you grow too much of the same thing, you end up with too many of the pests of those things. The only reason you can grow vast amounts of species of animal in close confinement is because you can use antibiotics to keep them alive. Monocultures of corn, soy, rice and cotton are the same issue. It takes an immense amount of fertilizer and pesticide to keep that crop healthy. Because nature doesn't like monocultures, sooner or later she will destroy them."*

#### a. Environmental Impact:

**Water Pollution:** Industrial agricultural practices contaminate groundwater and surface water with toxic pesticides, fertilizers, hormone residue, antibiotics residue, and harmful pathogens contained in manure. This damages aquatic ecosystems and poses a serious threat to human health. According to the EPA, agricultural practices are responsible for 70% of all pollution in U.S. rivers and streams.

**Solid waste:** Since factory farms concentrate an enormous amount of animals in a very small area, the farms generate far too much manure to be absorbed by the land. Excess manure is stored in huge holding tanks or manure lagoons, and is often over-applied to

fields. Not only does all this manure create an overwhelming stench, it also releases hazardous gases into the air, and often contaminates local groundwater and surrounding waterways with pathogens and excess nutrients. According to the Environmental Protection Agency, hog, chicken and cattle waste polluted 35,000 miles of rivers in 22 states and contaminated groundwater in 17 states during the 1990's.

A Factory Farm containing 5,000 hogs can produce as much *solid waste* as a human city of 20,000. Unlike cities, these industrial farms are not required to have a sewage treatment plan.

**Water Overuse:** Many operations consume water at an unsustainable rate, causing aquifer depletion and ground subsidence.

**Soil Issues:** Industrial farming causes chronic erosion due to extensive plowing, lack of cover crops, and failure to replenish soils with organic materials. Excessive use of chemical pesticides and fertilizers causes soil contamination.

**Energy Use:** Industrial Agriculture is responsible for 1/5<sup>th</sup> of our energy consumption – fuel is used in making the chemicals necessary to grow crops, for the machinery to harvest the crops, for fueling the ventilation systems and electricity, in the barns where animals are held and for the processing and transportation of our food. **Thus industrial agriculture is a major contributor to global warming.** This dependence on oil is also dangerous considering the fact that oil is a non-renewable resource – meaning it cannot replenish itself – and that it is in fast decline (some researchers have estimated that the planet will be out of oil within 50 years.)

Energy-intensive production methods are used to produce food. Large amounts of fossil fuel are required to plow fields, produce fertilizers, process foods, and transport foods. As a result of industrial farming practices, 17% of all fossil fuel used in the U.S. is currently consumed by the food production system.

#### **b. Health Impact:**

**Pesticides:** Industrial agriculture operations use huge amounts of toxic pesticides to eliminate pests. These chemicals are known to damage the environment and human health.

According to the EPA, over 1 billion tons of pesticides are used in the U.S. every year. The American Association of Poison Control Centers estimates that in 2002, 69,000 children suffered from pesticide related poisoning or exposure to poisonous pesticides. Farm workers are also dangerously exposed to toxic chemicals. Heavy use of pesticides is associated with elevated cancer risks.

**Unsanitary conditions** in factory farms and industrial slaughterhouses cause high levels of meat contamination which has resulted in recurrent epidemics of food borne illness. In the U.S., food borne illness sickens 76 million people, causes 325,000 hospitalizations, and kills 5,000 people every year. A 1998 study by Consumer Reports revealed that 71% of store-bought chicken were contaminated with *Campylobacter* and/or *Salmonella*, bacterial contaminants responsible for thousands of deaths and millions of sicknesses.

#### **c. The community:**

**Downturn in the local community:** Agribusiness often claims that its presence will have a positive impact on a local economy by creating new jobs and investing in the community. Recent experience, however, has shown that when large-scale farms enter communities and replace small farmers, they can actually create a downturn in the local economy.

**3. George Naylor talks about relying on just a few crops and planting them year after year. Is George's way of farming monoculture? If so, why? What are the drawbacks to farming this way?**

*George Naylor: "I'm sure that crop duster is out spraying for bean leaf beetles or Asian soy bean aphids. They are like new pests. Or at least the quantities of the darn things ... it never used to be like that! But as long as you are going to rely on just a couple crops and you plant them year after year, after year, you are creating an environment where certain weeds are going to want to become prevalent and certain bugs are going to just want to take over and eat your crop up. The herbicides and the pesticides that you use year after year are going to create certain resistance to them too.*

Animal "monocultures" also require chemicals to function. Every year, approximately 25 million pounds of antibiotics and related drugs are administered to animals for non-therapeutic purposes, like promoting growth. This is more than 8 times the amount used to treat disease in humans. The Union of Concerned Scientists estimates that 70% of all antimicrobials used in the United States are given to farm animals, to fight diseases arising from the tight confinement of animals and also to promote growth.

**4. Russ Kremer used antibiotics in his feed. Why did he use them? What were the consequences of such antibiotics use?**

*Russ Kremer – "What I was actually doing on my farm was basically feeding a continual dosage of antibiotics for growth rates or to ward off low-grade infections. When your best resource people tell you this is the magic drug to increase growth and efficiency, you adopt that. And it's very dangerous: you kill off the weak strain, it could be strep or ecoli, and the strong ones survive. They multiply and mutate and become even stronger. So you create an antibiotic resistant monster strain. I realize that this whole thing about antibiotic resistance is true."*

**5. What does Michael Pollan mean by taking a solution and dividing it into two problems? What solution is he talking about? How do plants and animals work together?**

*Michael Pollan "If you keep animals on farms their manure is a blessing. You can use it to grow other crops; you can close the nutrient cycle: the animals can eat the crop waste, the parts of the plants you can't sell, and they produce fertility for your fields. So the animals feed the plants and the plants feed the animals, it's a wonderful system. [In conventional agriculture,] We took this solution, plants and animals working together and we've divided it neatly into two problems. One is this pollution problem on the feedlot, where the manure becomes a pollutant, instead of a blessing and the other is on the farms we have a fertility crisis, because there are no animals left, so we have to buy synthetic fertilizer."*

**6. What is sustainable agriculture?**

When a process is sustainable, it can be maintained indefinitely. Sustainable food production can be maintained indefinitely because sustainable farmers do not take more resources to produce food than they give back. A reliance on renewable resources - as well as on symbiotic relationships with nature and the surrounding community - means that these farms do not damage the environment, are humane for workers and animals, provide a fair wage to the farmer, and support and enhance rural life. Because sustainable farmers see nature as an ally rather an obstacle, they are able to produce more wholesome food while using less fossil fuels (thus lessening the impact on global warming), and without using any synthetic pesticides, artificial hormones, or antibiotics.

**7. What is the difference between conventional agriculture and the way Joel Salatin farms? Why does Joel say we should respect the "design of**

## nature"? What does this mean?

*Joel Salatin: "If you're committed to healing the land, then you do something different. If you look at nature as the template, and look at the pattern and say: how can we most closely approximate this? Let's treat the herbivore like an herbivore first and then the other things will fall into place. We move the cows virtually everyday from paddock to paddock and what we're doing here is mimicking the natural herding instincts of herbivores in nature; they're moving on to fresh forage, away from yesterday's excrement. It allows the area that they were in to re-vegetate. So you look at nature and say: all right, well we've got this herd of herbivores, how does nature sanitize behind them? I mean you know before Pfizer, or Johnson and Johnson, and Merck Pharmaceuticals, how do these herbivores stay parasite-free and relatively healthy? The answer you find are birds. Birds follow herbivores. You know the egret on the rhinoceros nose. And so we follow about three days behind the cows with the egg-mobile and then the chickens scratch through the cow paddies, eat out the fly larvae that provide their salary. From a spiritual standpoint, the chickens are not just something to lay eggs, but they are fellow workers here, alongside us, so we honor and respect them, and allow them to fully express their "chicken-ness" and that gives them an honored part of the team to be workers and team players with us. "*

## 8. What are the benefits of Joel's way of farming? What are the benefits to your health, animals, the environment and the community?

### a. Health

*Meat:* More and more health benefits are being found with sustainable meat. According to the New York Times bestselling author Jo Robinson, grass-fed beef has two to six times more omega-3's than factory farmed, grain-fed meat. Omega-3 is a good fat that helps our cardiovascular system, our brain function and may also help prevent cancer.

*Produce:* Sustainable farms produce foods without excessive use of pesticides and other hazardous chemical inputs. Research indicates that sustainable foods are often healthier than their industrially produced counterparts. Organic foods contain higher levels of antioxidants, which help fight certain types of cancer. Organic crops contain significantly more vitamin C, iron, magnesium, and phosphorus.

Eating "sustainably" often means eating local, which means buying food from a farm as close to you as possible. This cuts down on the length of time between when the food is harvested or processed and when you eat it. After being harvested, food begins to lose nutrients, so the less time between the farm and your dinner plate, the more nutritious the food is for you.

### b. Tastes Better

Most people claim that sustainably-raised food simply tastes better. For example, today's industrial-raised turkeys are injected with saline solution and vegetable oils to try to improve "mouth feel". Years ago, a cook only had to put a turkey in the oven; today, the bird must be marinated, deep fried or brined to try to counteract the lack of flavor and dryness inherent in the meat.

### c. Animal Welfare

Sustainably-raised animals are treated humanely and are permitted to carry out natural behaviors such as rooting in the dirt and pecking the ground.

### d. Healing/Protecting our Environment

*Conservation and Preservation:* What is taken out of the environment is put back in, so land and resources such as water, soil and air can be replenished and are available to future

generations. The waste from sustainable farming stays within the farm's ecosystem and cannot cause buildup or pollution. In addition, sustainable agriculture seeks to minimize transportation costs and fossil fuel use, and is as locally based as possible. Sustainable farms conserve scarce water resources and protect local aquifers from being contaminated with harmful pollutants.

*Biodiversity:* Sustainable farms help preserve genetic diversity by raising a wide range of animal breeds and crop varieties. These farmers raise animal and plant varieties that are adapted to the surrounding environment, thus avoiding reliance upon large quantities of chemical inputs or genetically modified crop varieties.

*Reduce our energy use and dependence on fossil fuels:* Sustainable farms minimize fossil fuel consumption through techniques such as no-tillage or low-tillage farming, efficient application of manure and crop rotation. Small scale, organic farming operations have been shown to use 60% less fossil fuel per unit of food than conventional industrial farms.

#### **e. Community Benefits**

*Revitalizing the local economy:* Sustainable farms are an integral part of the community, where money made on the farm is filtered back into local businesses. Sustainable farms support local economies by providing jobs for members of the community and by purchasing supplies and materials from local businesses.

A study by the University of Minnesota Extension Service revealed that small farms with gross income of \$100,000 made almost 95% of total expenditures within their local communities. Large farms with gross income greater than \$900,000 spent less than 20% locally. Owners of small sustainable farms are actively involved in their communities, boosting the level of civic participation and helping to build resilient rural communities.

*John Ikerd:* "One of the fundamental reasons for shifting to the industrial system was that we could produce more with fewer people employed. This issue always comes up with respect to large-scale confinement animal feeding operations where there are hogs or chickens or whatever, whenever you go to that kind of system you invariably displace more independent family farmers than the people that you employ. One reason that the food is cheaper in the supermarket is that people are exploited in the process of producing it: part time jobs, no benefits, low pay ... If we go to a local food system, you gain about three people, in terms of employment within the local community, for every person you displace. You will see more people employed in a sustainable system because it is basically dependent upon the imagination and creativity of the people. That's what makes these alternative systems work"

### **9. Michael Pollan talks about the cost of local and organic food costing more but says it is worth more too. Why is it worth more? What's different about it?**

*"It is true that local and organic food cost more, it is worth more too. When this dozen eggs cost four, five dollars because these animals have been on pasture and its full of omega three, and its full of vitamin A, those are not the same as the 79 cent battery-cage eggs and yeah they're a white sphere but a completely different product. As we've industrialized our food and made it cheaper we've also diminished it nutritionally. According to the USDA's own numbers, if you look at fresh produce grown in 1950 and compared it nutritionally with fresh produce grown today, you will find that the amounts of key nutrients, vitamins, minerals has diminished by 40%. The more you process food, the less nutritious it is. Food is most nutritious in its whole form, its fresh form. But most of the supermarket is filled with processed food from which all the nutrients have been expunged basically."*

**10. What does Diana Endicott mean by \$10 having a “huge economic impact” and by the money being tripled or quadrupled in the local economy?**

*Diana Endicott – “If we just had every person, that shops at Hen House, if they would just spend ten dollars a week, I mean that would be such a small percentage of their overall food sales but it would make such a huge statement and have such a huge economic impact. Not only on the small family farms but to the economy, because the amount of money generated by that would be tripled or quadrupled by what it would bring back to our local economies and our rural areas, which are really dying.”*

**11. How is Russ’s treatment of his workers different from an industrial producer? How important of a role do you feel workers rights have in food production?**

*Russ Kremer “These are good juicy chops. They’re processed naturally in our plant down in Mountain View, Missouri, a plant that’s owned by the farmers. People say: “man, your pork chops are the best pork chops I’ve ever eaten in my life!” and so that makes us proud and again we’re proud of our workers craftsmanship and they’re proud of what they do down there. And they’re happy, they get full health benefits, they’re making on the average \$14 or \$15 an hour compared to \$6, \$6 and half. So we had a stack of applications about this thick down there of people wanting to work there and that’s just tremendous.”*

**Worker’s rights:** Workers should be treated fairly and paid competitive wages and benefits. They should work in a safe environment and are offered proper living conditions and food.

**12. What’s the relationship between feeding grain to cattle and all the negatives in agriculture, as Joel Salatin said in his radio interview? What does Joel mean when he said we need to go to a “mob-stocking, herbivorous, solar conversion, lignified, carbon-sequestration, fertilization program”?**

*Joel Salatin - “You’ve got to understand that 70% of all the row crops in the united states - and of course the row crops account for most of the genetic engineering, the petroleum use, the tillage, the erosion, and all of the negative things in agriculture - that 70% of that is grown for multi-stomached herbivores (cows), that aren’t ever supposed to eat that anyway. Only 30% goes to people, pigs and poultry. So if we went to a grass-based agriculture for our cattle, suddenly 70% of that currently assaulted land could return to a mob-stocking, herbivorous, solar-conversion, lignified, carbon-sequestration, and fertilization program and all the negatives in agriculture would come to a screeching halt.”*

**13. How is David Ball’s grocery store different from national chain grocery stores?**

David Ball is working to help farmers thrive in this economy by stocking his grocery store shelves with locally grown foods. This partnership ensures farmers that they will be able to sell the foods that they grow at a reasonable price, rather than being dependent on the fluctuating prices for food in the national marketplace.

**14. Who is Will Allen and what does his organization “Growing Power” do?**

Will Allen founded an organization called Growing Power to teach regular people how to become more involved with their foods and the way they're grown. He converts millions of pounds of waste into compost which in turn enriches the soil and helps produce incredible, nutritious foods that are affordable for anyone to purchase.

**15. How do his vertical growing systems help increase the volume of food produced in the Growing Power greenhouses?**

Will is able to use every inch of available space to grow things. His vertical growing systems are his vehicle for doing this.

**16. What does Will mean in the film that "It's not just about food; it's about life."**

How will you live your life? What choices will you make? Will they sustain you and the planet? It is about how you treat the planet, yourself and each other.

## Further activities to explore

1. Read Michael Pollan's *The Omnivore's Dilemma* and design your perfect meal. Tell where the food came from and how it was made. Who cooked the meal and whom did you share it with?
2. Research the local sustainable food movement in your community. How are the farmers using the land? What are they growing and how? What's working for them? Against them? How does this compare with other places in the country? What kind of help do they need to grow the sustainable food movement in your region?
3. Read Michael Pollan's *In Defense of Food* and describe what he means by saying "just eat food." How might this affect what you are eating today, how you shop for your food and what you buy as food?
4. Research the sustainable food movement's history. When did it start? Who was involved? What challenges did it face and from whom? What are the predictions for the future?
5. Research how technology has impacted nature's design. Why does man try to over control nature? How does government policy affect nature's design? What changes would you make to government policy to support nature's design?

# Personal Sustainability Practices Template

1. In the sustainable food movement, what are you most passionate about and why?
2. What personal sustainability practice do you want commit to?
3. What are the steps you will take to make this practice a consistent reality?
4. How will you share your practice with others and enlist them?

# Social Action Suggestions

Ana Sofia Joanes top 10 FRESH solutions:

1. **Drink plenty of water**, but avoid bottled water when you can. It pollutes the environment and is often bottled from tap water. <http://www.ewg.org/health/report/bottledwater-scorecard>. Plastic is harmful to your health and to the environment. <http://www.coopamerica.org/pubs/realmoney/articles/plastics.cfm>. Buy a reusable water bottle and invest in a good water filter!
2. **Avoid GMOs (Genetically Modified Organisms)!** When buying processed food (anything packaged) buy organic to avoid GMO (Since almost all the soy, corn, and canola in the US is genetically modified, over 70% of all processed food contain GMOs from by-products of these grains.) <http://centerforfoodsafety.org/geneticall7.cfm>
3. **Buy local products when possible, otherwise, buy organic** and fair trade products. You will support your local economy and small farmers, reduce your exposure to harmful pesticides (<http://www.foodnews.org/walletguide.php>), improve the taste and quality of your food, and protect the environment from fertilizer. ([http://en.wikipedia.org/wiki/Pesticides#Environmental\\_effects](http://en.wikipedia.org/wiki/Pesticides#Environmental_effects))  
  
You do that by shopping weekly at your local farmers market, joining a CSA (Community Supported Agriculture) and getting weekly deliveries of the season's harvest, and from buying from local grocers and co-ops committed to stocking local foods.
4. **Support restaurants and food vendors that buy locally** produced food. When at a restaurant, ask (nicely!) your waiter where the meat and fish comes from. Eventually, as more and more customers ask the same question, they'll get the message!
5. **Volunteer and/or financially support an organization** dedicated to promoting a sustainable food system. And stay informed by joining the mailing list of the advocacy groups you trust.

## Social Action Suggestions (continued)

6. **Get involved in your community!** Influence what your child eats by engaging the school board, effect city policies by learning about zoning and attending city council meetings, learn about the federal policies that affect your food choice and let your congress person know what you think.
7. **Visit a farm and grow a garden** .Teach a child how to garden. GET DIRTY! Have fun!
8. **SHARE your passion!** Talk to your friends and family about why our food choice matters. And organize a FRESH screening!
9. **Teach by example.** Your children learn from you – teach them the value of buying local and buying healthy. Our earth, health and ecology are hurting NOW because of the industrial food system, but if we don't take action and start the healing process, the effects are going to be catastrophic and perhaps irreversible for our children.
10. **COOK!** Our culture has forgotten the joys of cooking. Not only is it better for you and saves money, but it's an invaluable skill to pass on to your children.

## Glossary of Terms

**Animal Welfare** – every year, hundreds of thousands of animals raised for food experience terrible living conditions because the majority of meat, dairy, and poultry production in the United States take place in industrialized or factory farms. These factory farms are large, profit driven companies which view animals as units of production, rather than living creatures and exchange the animals' health and welfare for efficiency and profit.

**Antibiotics** – On industrial farms, animals are administered antibiotics on a routine basis – through feed, water, or injection.

**Biodiversity** – is the variety of all life in a given area. This area could be as small as your backyard, or as large as the entire planet. Biodiversity is essential for our existence because the earth's biological systems and processes provide us with food, materials for clothing and shelter, fuel, medicine, clean water and clean air. Biodiversity also provides all other species with the resources required for their survival.

**Community** – Agribusiness often claims that its presence will have a positive impact on a local economy by creating new jobs and investing in the community. However, recent experience has shown that when large-scale farms enter communities and replace small farmers, they can actually create a downturn in the local economy.

**Conventional (Industrial) Agriculture** – applies the tenets of industrial production to the production of food. Industrial production consists of specialization, mechanization and economies of scale.

**Eat Local, Buy Local, Be Local** – Consumers now have more choices of products, labels, and ways to shops. The benefits of buying local can be great. Sustainable Table's section on local fare is designed to help consumers learn what's happening in the local movement.

**Economics of Food** – Supporters of industrial farming often claim that sustainable agriculture is not an economically viable way to produce food. They believe large-scale factory farming is the most efficient way to produce huge quantities of cheap food. What these advocates fail to recognize is that the seemingly low price of industrial food does not take into account the true costs of production. These hidden costs include environmental degradation, use of fossil fuels, damage to human health, and the destruction of rural communities.

**Environment** – In a healthy farm system, agriculture works in harmony with the natural environment. This begins with healthy soil that stores water and nutrients and provides a stable base to support plant roots. Soil is kept in balance. Crops are rotated through the fields to replace nutrients in the soil. Where there is livestock, animals graze the land, then waste from those animals is used to fertilize the soil.

**Factory Farming** – Many of today's farms are actually large industrial facilities. These consolidated operations are able to produce food in high volume but have little to no regard for the environment, animal welfare, or food safety.

**Feed** – Farm animals are healthiest when they eat certain foods. Cows have stomachs that are designed to digest grass. Pigs can digest grass, corn, grains, soy and other plants. Chickens and turkeys can eat plants as well as bugs and worms found on the pasture. When animals are fed conventional or industrial feed, which can include animal products, antibiotics and other unnatural substances, their health is put in jeopardy.

**Genetic Engineering** - is the process of transferring specific traits, or genes, from one organism into a different plant or animal. Much concern has been raised over the inadequate testing of the effects of genetic engineering on humans and the environment.

**GMO** - A genetically modified organism (GMO, also called "genetically engineered") is a plant, animal or microorganism (eg, bacteria) that is created by means that overcome natural boundaries. Genetic engineering involves crossing species which could not cross in nature. For example, genes from a fish have been inserted into strawberries and tomatoes. While the Food and Drug Administration insists that foods produced by genetic engineering are the same as foods from traditional breeding, their own scientists reported that, "the processes of genetic engineering and traditional breeding are different and... they lead to different risks." (1

**Health** – over the last several decades, industrial agriculture has had an increasingly negative effect on human health. Industrial farms take an enormous toll on the environment, lowering the quality of life and endangering the health of those who live nearby.

**Herbicides** - A herbicide is a substance used to kill unwanted plants. Selective herbicides kill specific targets while leaving the desired crop relatively unharmed. Some of these act by interfering with the growth of the [weed](#) and are often synthetic "imitations" of plant [hormones](#). Herbicides used to clear waste ground, industrial sites, railways and railway embankments are non-selective and kill all [plant](#) material with which they come into contact. Smaller quantities are used in forestry, pasture systems, and management of areas set aside as wildlife [habitat](#). Herbicides are widely used in [agriculture](#) and in landscape turf management. In the U.S., they account for about 70% of all agricultural pesticide.

**Mad Cow Disease** – Mad cow disease is known as bovine spongiform encephalopathy (BSE). The symptoms of the disease include a loss of physical coordination and mobility and eventual death for the animals it infects. The human form of mad cow disease is called Variant Creutzfeldt-Jacob Disease. Most scientists believe consumption of particular prion infected tissues from cattle cause the disease in humans. Most scientists believe that eating infected brain and spinal cord tissue is the most likely cause.

**Monoculture** - Monoculture is the agricultural practice of producing or growing one single crop over a wide area.

**Organic** – the fundamentals of organic farming is to be a steward of the land so that the land is productive for generations. Organic farming came about as a reaction to the wide adaptation of input intensive farming around the time of WWII. During the first half of the last century,

synthetic fertilizers were affordably manufactured and tractors were replacing manual labor. Farmers around the world saw the potential detriment of this industrialized farming and began to develop methods that increased the long term productivity of their farm system.

**Pasture-Raised** – Truly sustainable livestock farming requires the use of a pasture-based system. Pasture-raised animals roam freely in their natural environment where they are able to eat nutritious grasses and other plants that their bodies are adapted to digest.

**Pesticides** – are chemicals used to eliminate or control a variety of agricultural pests that can damage crops and livestock and reduce farm productivity. The most commonly applied pesticides are insecticides to kill insects, herbicides to kill weeds, rodenticides to kill rodents, and fungicides to control fungi, mold and mildew.

**Sustainable Agriculture** – When a process is sustainable, it can be maintained indefinitely. Sustainable food production can be maintained indefinitely because sustainable farmers do not take more resources to produce food than they give back.

**Waste** – Where there are animals, there is animal waste, and as the growth of industrial farming concentrates thousands of animals on increasingly fewer farms, it produces massive amounts of animal waste on relatively small plots of land.

# Additional Resources

## Books

- Bittman, Mark. *Food Matters* (New York: Simon & Schuster, 2008)  
Gussow, Joan Dye. *This Organic Life: Confessions of a Suburban Homesteader* (White River Junction, VT: Chelsea Green Publishing, 2001)  
Ikerd, John. *A Return to Common Sense* (RT Edwards, 2007)  
Kimbrell, Andrew, N. *The Fatal Harvest Reader: The Tragedy of Industrial Agriculture* (Washington, D.C.: Island Press, 2002)  
Imhoff, Dan. *Farming with the Wild: Enhancing Biodiversity on Farms and Ranches* (San Francisco: Sierra Club Books, 2003)  
Nestle, Marion. *Food Politics* (Berkeley: University of California Press, 2002); *What to Eat* (North Point Press, 2007)  
Pollan, Michael. *The Omnivore's Dilemma* (New York: Penguin Books, 2006); *In Defense of Food* (New York: Penguin Books, 2008); *The Botany of Desire; Second Nature*  
Salatin, Joel. *Holy Cows and Hog Heaven: The Food Buyer's Guide to Farm-Fresh Food*. (Swoope, VA: Polyface, 2006)  
Waters, Alice. *The Art of Simple Food*(New York: Random House, 2007)

## Links

### Bottled water and plastics:

<http://www.ewg.org/health/report/bottledwater-scorecard>.  
[www.coopamerica.org/pubs/realmoney/articles/plastics.cfm](http://www.coopamerica.org/pubs/realmoney/articles/plastics.cfm)

### Buy local and organic products:

[www.foodnews.org/walletguide.php](http://www.foodnews.org/walletguide.php)  
[www.ediblecommunities.com](http://www.ediblecommunities.com)  
[www.informedeating.org](http://www.informedeating.org)  
[www.eatlocalchallenge.com](http://www.eatlocalchallenge.com)  
[www.eatwellguide.com](http://www.eatwellguide.com)  
[www.eatwild.com](http://www.eatwild.com)  
[www.localharvest.com](http://www.localharvest.com)  
[www.organic-center.org](http://www.organic-center.org)  
[www.sustainabletable.org](http://www.sustainabletable.org)

### Dangers of Fertilizer use:

[http://en.wikipedia.org/wiki/Pesticides#Environmental\\_effects](http://en.wikipedia.org/wiki/Pesticides#Environmental_effects)

### GMO's:

<http://centerforfoodsafety.org/geneticall7.cfm>

### Slaughter Practices:

[www.grandin.com](http://www.grandin.com)

**Slow Food Movement:**  
[www.slowfood.com](http://www.slowfood.com)