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Top 6 Reasons to Support Regenerative Agriculture

Analysis by Dr. Joseph Mercola | November 18, 2023

STORY AT-A-GLANCE

- Most growing environmental and health problems can be traced back to modern food production, including malnutrition, promotion of foodborne illnesses and drug-resistant bacterial infections, diminishing water supplies, and air, soil and water pollution
- The answer to all of these problems hinges on the widespread implementation of regenerative agriculture and biodynamic farming
- Reasons to support regenerative agriculture include the fact that it promotes optimal nutrition and health, rebuilds topsoil, protects water sources and minimizes irrigation, prevents environmental pollution and restores damaged ecosystems
- Food from animals raised on regenerative farms also minimize the risks of foodborne illnesses and drug-resistant diseases
- Certifications to look for, denoting the highest quality foods grown according to regenerative principles, include Demeter (biodynamic certification) and the American Grassfed Association (AGA) certification

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It's easy to forget that at one point, not so long ago, all food was organically grown in a way that supported the ecosystem and environment. This all changed in the 1940s when the Green Revolution took hold and industrial, chemical-dependent farming techniques spread and quickly became the norm.

Unfortunately, industrial farming has created a series of unsustainable situations in less than 70 years, and evidence suggests we will not make it until the end of the century if we continue along the path of degenerative food and farming. Virtually every growing environmental and health problem can be traced back to modern food production. This includes but is not limited to:

- Food insecurity and malnutrition amid mounting food waste
- Promotion of foodborne illnesses and drug-resistant bacterial infections
- Rising obesity and chronic disease rates despite growing health care outlays
- Rapidly dwindling fresh water supplies
- Toxic agricultural chemicals polluting air, soil and waterways, thereby threatening the entire food chain from top to bottom
- Disruption of normal climate and rainfall patterns due to the destruction of ecosystems by pollution

The good news is there's a viable answer to all of these problems that does not merely scratch at the surface, and the answer hinges on the widespread implementation of regenerative agriculture and biodynamic farming. This is why I support the Organic Consumers Association and Regeneration International.

By learning from each other and educating consumers to affect change through your shopping habits, there's hope we may avoid a complete breakdown of our ecosystem and food production. One thing's for sure: We cannot wait for regulations to drive this change. We must push for it ourselves, and we do so by voting with our pocketbooks every time we shop for food.

While this is a very broad topic with many interlacing components that could cover several books, here, I summarize half a dozen of the top reasons to support regenerative

and biodynamic farming, and provide resources where you can further your own education.

Reason No. 1: Regenerative Farming Rebuilds Topsoil

Topsoil destruction, erosion and desertification are exacerbated by tilling, monocropping and not using cover crops. Maria-Helena Semedo of the Food and Agriculture Organization of the United Nations has warned that at the current rate of topsoil degradation, all the world's topsoil will be gone in less than 60 years,[1] at which point growing of food will become next to impossible.

Closely related problems are the loss of soil fertility and biodiversity, which is directly related to the loss of natural carbon in the soil. An estimated 80% of soil carbon in heavily farmed areas has already been lost,[2] due to destructive plowing, overgrazing and the use of soil-destructive, carbon-depleting chemical fertilizers and pesticides.

Carbon management — pulling carbon out of the air and sequestering it into the soil — is a critical aspect of environmental health and the growing of food. A key strategy to sequester carbon in soil is to use cover crops. In other words, soil should never be left exposed, as without root systems holding the soil in place, soil erosion speeds up.

Mixed grasses also nourish the soil microbiome, which need the plant interaction. Nature abhors monoculture. In 1 square foot of pristine prairie land, you'll find about 140 different plants, and this is the type of natural biodiversity regenerative farmers aim to mimic. Regenerative farmers also understand the necessity of livestock.

An article[3] by Pure Advantage notes how "there is no current or envisioned technology that can simultaneously sequester carbon, restore biodiversity and feed people. But livestock can …"

The success of Will Harris' grass fed ranching operation in Georgia, and thousands of other ranches across the U.S. and the world, also testify to the regenerative power of grazing animals. The percentage of organic matter in soil is a good indicator of quality,

and Harris has been able to increase organic matter in his soil from less than 0.5% to as much as 5% in a 20-year period.

Reason No. 2: Regenerative Farming Protects Water Sources and Diminishes Water Demands

Industrial agriculture also promotes water waste through use of flood irrigation, destruction of soil quality and poor crop choices. As a result, one-third of the largest groundwater aquifers are already nearing depletion,[4] as we're extracting water at a far faster pace than the aquifers can refill.

According to James Famiglietti, a senior water scientist at NASA's Jet Propulsion Laboratory, the majority of our global groundwaters "are past sustainability tipping points,"[5] which means it's only a matter of time until we run out of fresh water. About 80% of U.S. consumptive water (and more than 90% in many Western states) is used for agricultural purposes.[6]

Large-scale monocrop farms and concentrated animal feeding operations (CAFOs) are also a primary source of water pollution.[7] According to a report[8] by Environment America, corporate agribusiness is "a major polluter of America's waterways."

Tyson Foods Inc. was deemed among the worst. Researchers have warned that many lakes around the world are now at grave risk from fertilizer runoff that feeds harmful blue-green algae (cyanobacteria)[9,10] and, once established, it's far more difficult to get rid of than previously thought.

Regenerative farming addresses both water waste and water pollution. Not only are synthetic fertilizers and toxic pesticides not needed when you grow crops and raise animals in a symbiotic fashion that supports the health and balance of the environment, but the more organic matter there is in the soil, the more moisture it can hold.

For each 1% increase in organic matter, each acre of soil can retain another 20,000 gallons of water, thereby reducing the need for irrigation with precious groundwater.[11]

Reason No. 3: Regenerative Farming Promotes Optimal Nutrition and Health

The industrialization and centralization of food production was done to increase farmers' capacity to grow more food at a lower cost. Unfortunately, a core principle was lost in this efficiency equation — that of food quality and nutrient density.

Tests reveal the nutrient content of foods has dramatically declined since the introduction of mechanized farming in 1925.

As just one example, research by August Dunning, chief science officer and co-owner of Eco Organics, reveals that to receive the amount of iron you used to get from one apple in 1950, by 1998 you had to eat 26 apples; today you have to eat 36, and this is a direct consequence of industrial farming techniques and use of chemicals that destroy soil quality by killing essential microbes.

We now know that, just as the human gut microbiome plays integral roles in human health, so the soil microbiome influences nutrient uptake and plant health. Soil microbes even help regulate the invasion of pests.

It's not surprising then that as nutrient density declined and toxic exposures via food increased, obesity and chronic disease rates have dramatically risen — so much so that obesity now threatens to overtake hunger as the No. 1 global health concern.[12]

Many choose organic because of what you don't get — the pesticides, genetically modified organisms and antibiotic-resistant bacteria, for instance — but the benefits also extend to basic nutrition. For example:

- When cows are allowed plenty of access to forage, organic milk contains about 25% less omega-6 fats and 62% more omega-3 fats than conventional milk, along with more vitamin E, beta-carotene and beneficial conjugated linoleic acid.[13]
- Organically grown foods contain significantly higher levels of antioxidants than conventionally grown varieties,[14] including beneficial compounds linked to a

reduced risk of chronic diseases such as heart disease, neurodegenerative diseases and certain cancers.[15]

Reason No. 4: Food From Animals Raised on Regenerative Farms Minimize Risks of Foodborne Illness

While health agencies insist raw and unsterilized foods such as raw organic milk are hazardous to human health, statistics tell a very different story. In reality, the foods associated with the greatest number of foodborne illnesses are all factory farmed, with CAFO chicken leading the pack.

Between 2009 and 2015 there were 5,760 reported foodborne outbreaks in the U.S.,[16] resulting in 100,939 illnesses, 5,699 hospitalizations and 145 deaths. Of these, chicken was responsible for 12% of all illnesses, followed by pork and seeded vegetables, each of which was responsible for 10% of illnesses.

Indeed, raw CAFO chicken has become a notorious carrier of Salmonella, Campylobacter, Clostridium perfringens and Listeria bacteria.[17,18] In New Zealand, Michael Baker, a public health researcher and professor at University of Otago, has suggested the implementation of a "tobacco-style" warning label on all raw chicken items to inform shoppers about the health risks involved.[19]

Testing reveals a majority of CAFO beef is also contaminated with risky pathogens.[20,21] A 2017 report revealed 22% of antibiotic-resistant illness in humans is linked to consumption of contaminated foods, and tests have shown ground beef from animals raised in CAFOs is three times more likely to contain antibiotic-resistant bacteria than organic grass fed beef.[22]

The reason contamination with drug-resistant microbes is par for the course in CAFOs is due to the overuse of antibiotics in CAFO livestock. **Organic grass fed standards**, on the other hand, do not permit the use of antibiotics,[23] which is why grass fed beef is less likely to be contaminated with drug-resistant bacteria.

Reason No. 5: Regenerative Agriculture Prevents Environmental Pollution, Restores Damaged Ecosystems

Our water supplies are not the only resource being decimated by pollution from CAFOs and monocrop industrial farms. They're also responsible for a significant amount of land and air pollution, and in a variety of different ways, including:

- **Greenhouse gas emissions —** CAFO meat and dairy operations are among the world's top polluters, outpacing even multinational oil and gas corporations in greenhouse gas emissions annually. According to a report[24] by international nonprofit GRAIN and the Institute for Agriculture and Trade Policy, the world's five largest meat and dairy corporations alone create more greenhouse gas emissions than Exxon, Shell or BP each year.

- **Particulate matter air pollution —** Research[25] also shows that particulate matter air pollution from factory farms far outweighs other sources. The primary culprit here is nitrogen fertilizer. As it breaks down into its component parts, ammonia is released into the air. When the ammonia in the atmosphere reaches industrial areas, it combines with pollution from diesel and petroleum combustion, creating microparticles.

- **CAFO waste —** Urine and feces from CAFO animals are collected in large open-air lagoons, and whether sprayed on fields as fertilizer or spilled due to flooding during storms, the result is much the same. Use of CAFO waste as fertilizer is the primary reason why produce has become such a frequent source of foodborne illness.

  CAFO fumes are also toxic to anyone unfortunate enough to live or work nearby, and studies show people who live near CAFOs have higher rates of respiratory problems, headaches, diarrhea, depression and other health problems.[26,27,28,29]

- **Herbicide drift —** Dicamba is perhaps one of the most serious threats in this regard. The toxic weedkiller, which is used along with genetically engineered dicamba-tolerant crops, damaged 3.6 million acres of American cropland in 2017,[30] and another 1.1 million acres as of July 2018.[31]

Although acreage numbers were not mentioned, in a December 2021 memorandum, the EPA reported that in 2021 alone, it had received nearly 3,500 reports of Dicamba drifts. Dicamba drift has also damaged homeowners' yards, resorts, state parks and organic farms.

Regenerative agriculture is a return to what organic was originally all about — the protection and rebuilding of topsoil and ecological biodiversity and health. Biodynamic farming is the real gold standard here, as it's both organic and regenerative, and then some.

Not only does biodynamic farming provide superior crops both in volume and increased density of nutrients, but biodynamic farms are also completely self-sustaining — something that cannot be said even for most organic farms. For example, biodynamic standards do not simply require farmers to use organic animal feed. Most of the feed must actually originate from the farm itself.

And, while an organic farmer can section off as little as 10% of the farm for the growing of certified organic goods, to be certified as a biodynamic, 100% of your farm must be in compliance. In addition to that, 10% of the land must be dedicated to increasing biodiversity. This could take the form of forest land, wetland or insectary, for example.

Biodynamic farming also has all of the features associated with regenerative agriculture, such as crop rotation, the use of cover crops and so on. Having animals integrated on the farm, with a focus on animal welfare, is another core principle of biodynamic farming. In short, the farm is viewed as a living organism — a living, self-sustainable whole — and biodiversity of both plants and animals are viewed as integral.

This is really as good as it gets, and buying foods produced by farms certified as biodynamic through Demeter offers the greatest assurance of food quality and environmental sustainability.

Reason No. 6: Regenerative Agriculture Benefits Farmers and Builds Sustainable Local Economies

While profitability is commonly cited as a determining factor for why farmers "cannot" farm organically anymore, research refutes such scaremongering. One such study[32,33] found organic farmers actually earn 22 to 35% more than their industrial counterparts.

What's more, regenerative agriculture can also help create regenerative economies based on values and principles that go far beyond merely making money,[34] thereby benefiting society in practical ways beside a cleaner, healthier environment and more nutritious, less toxic food.

In a 2015 article, John Fullerton, founder and president of Capital Institute, presented the organization's views on regenerative capitalism, which is built on universal principles of health and wholeness. "We have identified eight key, interconnected principles that underlie systemic health," he writes. These eight principles, which he proposes be part of a regenerative economic system, include:

Right relationship — Economy based on the understanding that damage to any single part ripples outward to damage every other part of the system

Holistic wealth — The understanding that true wealth is more than just money. It can also be measured in well-being of the whole and broadly shared prosperity

Seeking balance — "A regenerative economy seeks to balance: efficiency and resilience; collaboration and competition; diversity and coherence; and small, medium and large organizations and needs. It runs directly against the (short term) "optimize" ideology that is at the root of modern financial logic"

"Edge effect" abundance — "Creativity and abundance flourish synergistically at the 'edges' of systems … For example, there is an abundance of interdependent life in salt marshes where a river meets the ocean … At those edges the opportunities for innovation and cross-fertilization are the greatest"

Robust circulatory flow of money, information, resources, goods and services

Innovation, adaptation and responsiveness

Empowered participation

Honoring community and place — "A regenerative economy nurtures healthy and resilient communities and regions, each one uniquely informed by the essence of its individual history and place"

Educate Yourself on the Benefits of Regenerative and Biodynamic Agriculture

I've made it a mission to educate myself and others about the truly global benefits of regenerative and biodynamic farming. In doing so, I've traveled around the country, visiting a number of different thought leaders and experts to see their farm operations firsthand, and I've written extensively about this topic over the past several years.

Following is a list of some of the many experts I've interviewed with links to their interviews. You can also learn more about regenerative food, farming and land use on **Regeneration International's website**.

Ray Archuleta, aka, "the Soil Guy," is a soil scientist and conservation agronomist at the United States Department of Agriculture, Natural Resources Conservation Service at the East National Technology Support Center in Greensboro, North Carolina. In his interview, he explains how the health of the soil in which our food is grown is intimately connected to our health and the environment as a whole.

Judith Schwartz, freelance writer and author of the book "Cows Save the Planet And Other Improbable Ways of Restoring Soil to Heal the Earth,"[35] discusses the importance of holistic herd management for the sequestration of carbon.

Regenerative farming pioneer Will Harris runs White Oak Pastures in Bluffton, Georgia, which produces high-quality grass fed products. While beef and other animal products are the commodities being sold to the public, what Harris is really producing

is healthy soil, and the success of his farm is a great demonstration of how you can accomplish the conversion from conventional to regenerative agriculture.

Joel Salatin, owner of Polyface farm in Virginia, is another pioneer in sustainable agriculture, whose farm is a real-world demonstration of how regenerative farming benefits the environment and humanity as a whole.

Gabe Brown, a pioneer in regenerative land management has a farm in Bismarck, North Dakota, and travels widely, teaching people the principles of building topsoil, without which you cannot grow nutrient-dense food.

Kristin Ohlson, author of "The Soil Will Save Us," discusses the complex relationship between the soil and the food we eat in her interview; the importance of increasing the carbon content of our soils, and the integral role played by soil microbes in the ecosystem.

Reginaldo Haslett-Marroquin, an innovator in the field of regenerative agriculture, has developed an ingenious system that has the potential to transform the way food is grown. In his interview, he reveals how raising chickens naturally, without the use of cages, could lead to a food revolution, regenerating ecology, economy and social conditions all at the same time.

Dr. Allen Williams, a sixth-generation farmer in South Carolina and cofounder of The Grassfed Exchange, discusses how regenerative land management practices can reverse much of the negative impacts done by the conventional model.

Hendrikus Schraven, founder of Hendrikus Organics, is an expert at restoring contaminated soils by improving the quality of the microbiome in the soil.

Elizabeth Candelario, managing director for Demeter, a global Biodynamic certification agency, discusses the history of biodynamic farming and why biodynamic certification is the mark of superior food.

Paul Gautschi, whose private organic garden is a testament to the fact that growing large amounts of healthy food can be very simple, and doesn't require a lot of time.

How to Affect Change Seven Days a Week

A growing number of homeowners have responded to the call for cleaner, healthier foods by converting their yards into edible landscaping using organic and regenerative methods. But even if you're not growing your own food, you can still help steer the agricultural industry toward safer, more regenerative systems by choosing fresh, organic produce from local growers.

Remember to choose organic, grass fed beef, poultry and dairy, in addition to organic produce, as CAFOs are among the worst polluters. CAFO meats (including poultry, beef and pork) are also far more prone to be contaminated with pathogens that can trigger illness, including drug-resistant bacteria.

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