Sustainable Agriculture: A Better Option for All

Emily Gillispie

Miami University

*Sustainable Agriculture: A Better Option for All*

The choices you make as consumer, no matter how small they may seem, effect the planet. Considering where the food you buy in the grocery store comes from is the first step in changing the world’s agricultural system. By choosing to not buy outsourced, genetically engineered, pesticide laden food, you are supporting a healthier and more prosperous future for the environment and people everywhere.

 The way we grow food in the United States and other parts of the world is considered industrial agriculture. Crops of all the same variety are planted by the hectare, equivalent to 10,000 square meters, and mass produced so that the current agricultural process resembles more of a factory than a farm. Although this sounds like a practical and efficient development, it has consequences. In his book Doing Environmental Ethics, Robert Traer gives an important summary of what Industrial Farming is and some of its side effects. The current way we grow food costs us twenty-five billion tons of topsoil each year and has left a quarter of the world’s farmland infertile. It has also strained the world’s water resources because of modern irrigation systems and poisoned soil and streams with agricultural runoff (Traer, 2013, p. 231). Traer says that industrial farming ignores the cyclic nature of an ecosystem. Straining these delicate ecosystems that we live in is dangerous, as we depend on the environment for all of our resources.

The driving force behind industrial farming is business, and the need to produce the highest yield for the lowest cost. Monoculture, the planting of a single crop in large amounts, became popular in the 1970’s when small farms that were struggling to get by were bought by large corporations. With the pressure to now produce higher yields, farmers turns to pesticides, fertilizers, and genetically modified organisms, which are crops that contain DNA of other organisms and are engineered to produce desired traits. Traer says that because of the current farm legislation, “Ten percent of America’s largest and richest farms collect almost three-fourths of federal farm subsidies” (Traer, 2013, p. 237). This means that as the federal subsidies’ on a product drive the market price up, large corporations make more money and continue to tighten their grip on the agriculture industry. An example of a large industrial agriculture corporation is Monsanto, named Forbes magazine’s Business of the Year in 2010. Almost any packaged product you buy that contains corn syrup or soybean oil is likely to contain Monsanto’s GMOs. Forbes magazine says that ninety percent of corn grown in the United States and eighty percent of soy and cotton are grown from Monsanto seeds. Monsanto has almost completely monopolized the industry. Because of their methods, the prices of their crops are very low in the short term, making it hard for small farms to compete. Monique Mikhail, writer for The Worldwatch Institute and cited in their 2012 State of the World report, recognizes the higher yields in crops that companies like Monsanto produce, but notes the environmental hazards and socioeconomic problems that accompany them (Mikhail, 2012).

 The antithesis of industrialized agriculture is agriculture that contributes to a sustainable future. The definition of sustainable agriculture is broad, but can be summed up by saying that it is a means of growing food that models the natural processes of an ecosystem and conscientiously uses the environment’s resources. The University of Kentucky College of Agriculture defines it as “an approach to agriculture that focuses on producing food in a way that does not degrade the environment and contributes to the livelihood of communities” (University of Kentucky, 2008). Robert Traer says that the way farms can become sustainable is to mimic natural processes. He says, “Nature works in cycles, so the waste from one process becomes a nutrient for another. In contrast, industrial agriculture has a linear model like a factory- inputs become product and waste” (Traer, 2013, p.231). Sustainable agriculture protects the delicate ecosystems that most people do not consider. Worldwatch Institute says that a “fundamental shift toward an ecological approach” is needed to repair the current state of agriculture (Mikhail, 2012). This means that we need to consider the way ecosystems naturally function, and model it, that way we can reduce our impact on the environment. Both Robert Traer and Tasha Eichenseher, writer for National Geographic, see sustainable farming as a means to fix the “Green Revolution”, which is another term for the rise of industrial farming (Traer, 2013, p. 231)(Einchenseher, 2011). Traer says that the methods currently used are unstainable because of the harmful effects on the environment (Traer, 2013, p. 231). Eichenseher hopes “the shortfalls of the Green Revolution can be made up for in the much less cookie-cutter age of social entrepreneurship, information, and innovation” (Eichenseher, 2011). It is time for consumers to understand where their food is coming from, how it is grown, and its global impact.

 The most detrimental effect of industrialized agriculture is its effect on the environment, because our entire lives revolve around our ecosystem and the resources we derive from it. Soil and water, the two necessities of growing plants are being hit the hardest. Soil has been lost and drained of nutrients and water sources have been exhausted, and what remains has been polluted from the over use of pesticides and fertilizers. Because of this we now face climate change which presents even more agricultural difficulties (Eichenseher, 2011). Soil, water, and air are all things we cannot live without. The increase of greenhouse gases due to industrial agriculture, is also a serious concern. Global warming only heightens all of the other environmental problems we face. To add onto Eichenseher’s summary of the environmental effects, Worldwatch notes the loss of biodiversity because of monoculture and says that there has been a seventy five percent loss in plant biodiversity due to the shift towards it (Mikhail, 2012). Genetically modified organisms, like the seeds of Monsanto, have also contributed to the loss of biodiversity (Haslberger, 2006). Biodiversity is necessary to the balance of ecosystems and is full of possibilities. By quashing biodiversity, humanity is limiting its chance for the discovery of new medicine, products, and more food sources. Traer suggests crop rotation because it breaks up the weed and pest cycles, reducing the need for harmful pesticides and fertilizers which contaminate water supplies (Traer, 2013, p. 244).

Water is clearly a concern in industrial farming. Worldwatch says that the over pumping of groundwater and excessive use of irrigation has “irreversibly damaged” some water resources. (Mikhail, 2012). Also, The Environmental Protection Agency states that agricultural runoff is the leading cause of water quality issues in rivers and lakes, and also has a large impact on estuaries and groundwater ("Protecting water quality," 2006). This is not only the water that you will eventually drink, but also the water that fish and other marine life live in, and it is very possible that this food source will become contaminated from the runoff. Water is precious, we have a very finite supply of fresh water that can be used for drinking and agriculture, so we have to use it wisely and protect it. Industrial agriculture does significant and visible damage on the environment and is rapidly depleting our resources, resources necessary to sustaining all forms of life.

The World Watch Institute reports that in 2011, one in seven people were chronically undernourished (Mikhail, 2012). Monsanto, the leader in the seed industry, says that one of the main reasons for pursuing biotechnology in agriculture is to feed the growing population (Forbes, 2010). Since the majority of crops grown around the world are engineered to produce high yields, why are there still so many hungry people? Eichenseher, Traer, and the Worldwatch Institute all say that the amount of food the world is growing is not the issue in world hunger, but rather the problem is in the distribution and price of the food (Eichenseher, 2011) (Traer, 2013) (Mikhail, 2012). The Worldwatch Institute says that eighty percent of the world’s hungry people live in rural areas, and the majority of them are the owners of small farms who are struggling to compete with the high yields of industrial farms (Mikhail, 2012). Companies like Monsanto may argue that their high yields are the only way to feed the world, but their practices are unsustainable and their products do not reach the people who need it most.

The biggest argument farmers have against converting to sustainable farming is that it is more expensive. Lubell and Hills, who did a study on grape farmers in California, say that farmers see the economic gain of sustainable practices as being lower than what it is and discuss the need to educate farmers of the long term lucrativeness of a sustainable business model (Lubell and Hoffman, 2011). The University of Kentucky says that to be sustainable, a farm must be profitable, although there may not be immediate growth, because of the nature of farming. They suggest planting multiple and diverse crops, opposed to monoculture, to provide financial security (University of Kentucky, 2008). Monoculture, although appears to be a cheaper way to produce food, has economic downsides. Traer says that GM foods will raise the price of seeds “as corporations seek to maximize profit from their research and patents” (Traer, 2013, p. 247). Also, industrial farms will have to raise prices of their food to compensate for the higher costs of production and transportation, due to their dependence on fossil fuels (Traer, 2013, p. 245). On the surface, mass produced crops may seem cheaper, but they are unsustainable in the long term due to the exhausting of earth’s resources. A sustainable farm is going to be the most economically sound in the future.

Industrial farming will not feed the growing population or help small farms overcome poverty and it poses immense environmental hazardous. GM foods and vast fields of a single crop only contribute to soil degradation, loss of crop biodiversity, pollution and depletion of freshwater sources, burning mass amounts of fossil fuel that produce greenhouse gases, and wastefulness. Sustainable farming protects the environment and preserves our limited resources for future generations while helping feed the current population by growing food close to consumer to have a positive effect on local communities; nutritionally and economically.

 As a consumer, you can make small choices that will contribute to the greater movement. Although just one person in the grocery store cannot change the world’s agricultural system, every individuals’ contributions accumulate. The most important thing is to be an educated consumer, and be aware of what you are buying. When it comes to produce, buy local and always in season. This will support your local farms, encourage sustainable farmers, and lessen the chance of buying food that has been transported from across the country, or world, greatly decreasing your carbon footprint. When buying packaged food, look for food that is labeled non-GMO and organic. Support your local economy, help the environment, and choose to not support agriculture that puts profit over people and the planet we share.

References

Eichenseher , T. (2011, January 14). *Agriculture becomes our top environmental issue*. Retrieved from <http://newswatch.nationalgeographic.com/2011/01/14/state-of-the-world-agriculture-environment-water/>

Haslberger, A. G. (2006). Need for an "integrated safety assessment" of GMOs, linking food safety and environmental considerations [electronic resource]. *Journal Of Agricultural And Food Chemistry*, *54*(9), 3173-3180.

Lubell, M., Hillis, V., & Hoffman, M. (2011). Innovation, Cooperation, and the Perceived Benefits and Costs of Sustainable Agriculture Practices. Ecology & Society, 16(4), 1-12.

Mikhail, M. (2012). Growing a sustainable future. In E. Assadourian, M. Renner, L. Starke & Worldwatch Institute (Eds.), *State of the world 2012: Moving toward sustainable prosperity : a Worldwatch Institute report on progress toward a sustainable society* Washington, DC: Island Press.

Traer, R. (2013). *Doing environmental ethics*. (2nd ed., pp. 231-250). Westview Press.

United States Environmental Protection Agency , (2006). Protecting water quality from agricultural runoff. Retrieved from website: http://www.epa.gov/owow/nps/Ag\_Runoff\_Fact\_Sheet.pdf

University of Kentucky. (2008). Sustainable agriculture. Retrieved from <http://www.uky.edu/Ag/NewCrops/introsheets/sustainableag.pdf>