

6-2012

Agricultural Policy In America: The Rise of Industrial Farms and the Emergence of Alternative Farming

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Running Title: Agricultural Policy in America

Agricultural Policy In America: The Rise of Industrial Farms
and the Emergence of Alternative Farming

By

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Submitted in partial fulfillment
of the requirements for
Honors in the Department of Political Science

UNION COLLEGE

May, 2012

Abstract

D'AGOSTINO, ELIZABETH: *Agricultural Policy in America: The Rise of Industrial Farms and the Emergence of Alternative Farming*. Department of Political Science, May 2012.

ADVISOR: Matthew Scherer

America's treatment of agricultural policy is unlike that of any other country in the world. After the Great Depression, the government, urged on by a strong lobbying force, began to implement strong policies aiding and regulating the farming sector. Massive intervention that started as a means of food security has developed into a system today that still leans on subsidies, grants and other means of support. Industrial agriculture, meaning farming done on a large scale with chemical inputs, has largely replaced the traditional methods practiced at the time of the post-depression subsidies. However, in recent years counter-industrial farming has emerged due to concern over the environmental and social impacts of industrial agriculture, including those farmers who dub themselves organic. Despite the newer distinctions in farming methods, most policy changes are politically driven and serve to represent various lobbying interests. This paper examines the policy that has led to America's reliance of industrial scale agriculture including new technology like Genetically Modified seeds. This is followed by an analysis of the current policies impact on farmers, the environment and rural life in general. Finally, a conclusion is reached in terms of the negative consequences associated with the current policy propping up industrial agriculture. Several alternative movements are proposed as potential solutions to those problems yet the umbrella term sustainability is the best hope toward moving at a gradual rate toward a more economically and environmentally sound agricultural system.

Agricultural Policy In America

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Introduction

“A Tale of Two Farms”

Tom Smith is a farmer. So is Frank Jones, yet their farms are quite different. Tom Smith runs a large-scale farming operation producing corn and sometimes soybeans on his 2,500-acre farm. He has all the best and latest farming equipment, a contract with Monsanto supplying him the newest version of genetically modified seeds and sprays his fields. When the time comes for harvesting, his corn and soybeans are taken to a grain elevator where they are priced and sold. From there his crops are processed and are distributed to various supermarkets across the country for consumption. Mr. Smith receives around \$30 an acre in government subsidies, such that his corn is actually sold for less than it took to produce. While he is proud of his hi-tech farm, he is consumed by worries of debt and even bankruptcy as he watches his neighbors lose their farms and seek alternative work.

Mr. Jones' story started in the same way as Mr. Smith's did. However, sometime in the 90's something snapped. Maybe it was the chemical run-off in the ground water forcing him to purchase a water purifier or maybe it was the constant need to expand his farm, buying more and more inputs each year. Whatever the reason, Mr. Jones sold off large portions of his land and began to farm according to more traditional methods, like his grandfather did. He no longer uses pesticides and fertilizers but applies for grants that allowed him to learn about natural methods for pest prevention and soil fertility. He began to grow potatoes, squash and carrots along with a fraction of the corn he used to produce. While he does not receive nearly the aid he used to get, he makes up for it by the reduced input costs and by selling at farm-stands and small markets. Soon he will apply for organic certification, which will allow him to sell his produce at an even greater

premium. While some farmers might tease him for going “green” he relishes the idea of a simpler, natural way of farming that allows him more financial freedom.

These two fictitious stories are based on the realities of the agricultural system today. Both types of farms been heavily influenced by government policy, to the point that it would surprise the average American consumer. Policies that have been ingrained in the system since the 1930’s are in many ways still influencing a very different type of farm in a changing society. The three chapters of this thesis describe the relationship between the government and agriculture, the policies that have emerged as a result and how both have evolved amongst a changing political, environmental and social climate.

The first chapter is primary focus on the history and development of American policy toward Agriculture and food regulation. Since the Great Depression the government has intervened in farming markets to maintain production and cheap prices. In order to understand the current state of food politics it is important to outline the history of American agricultural policy beginning in the early 1900’s. This was a time when government intervention led to the introduction of several policies meant to boost production while at the same time protecting the farmers from the various perils of farming such as weather and market crashes (Roberts p.20). Interestingly enough, these policies change over the course of history to support a system of increased productivity at a decreasing price while maintaining some fundamental ideals like land conservation and price supports on a select few crops. In this chapter I compare farm bills of the past, focusing the type and allocation of government aid. For instance, in May of 1933, the government established the Agricultural Adjustment Act in which farmers were paid to “reduce acreage” so that Washington would have better control over production rates (Mantel p.20). At the time, the agricultural landscape was diverse, with several different species of crops and

livestock flourishing on family farms. Now most farms mimic the industrialization of America, producing one crop in mass quantities and a selling it for a low price. How has this come to be? This chapter will focus on the legislative side of the answer since I believe the government intervention is both the cause and solution to the current plight of industrial agriculture. To quote Senator Richard Lugar “American agricultural policy distorts food prices, frustrates innovation, limits product diversity and subsidizes a select group of farmers at enormous public cost”(Hosansky p.3). By looking at the beginnings of agricultural policy, I hope clarify the source of the predicament that Lugar described.

Today the agricultural industry receives both a biological and social subsidy by way of price controls and the development of fertilizers and new technologies. The second chapter of the paper focuses on the modern day industrial farm in which production is at record highs and the population of farmers is at an all time low. I argue that there are three main facets of the modern industry, which differentiate it from “traditional agriculture”: Agribusiness, specialization and the development of new technologies. While all three have overlapping implications on farming, I believe that they each create negative externalities, which has led to environmental and social damages. For instance, the recent invention and implementation of genetically modified seeds has been fully supported by the American government. This recent technology in principle would help the farmers produce several times the crop using fewer chemical fertilizers and pesticides. However, I will argue that GM technology, specifically that of Monsanto, is hurting the industry since small farms can no longer afford the technology to compete with the larger “industrial farms”. Furthermore there are negative environmental risks to growing GM crops, including a loss of biodiversity among other things. Despite the social and environmental damages associated with new technologies, policies are in place that helps the corporations responsible.

Therefore, I will touch on the importance of lobbying and how certain corporate actors are influential in political decisions. Essentially this chapter provides a snapshot of the average industrial farm, the problems associated with it and the policies that make it. Farmers like the above mentioned Mr. Smith may be producing at record levels but at high costs to the environment and to rural life.

The final chapter discusses the emerging counter-culture to the industrial agricultural reality of today. Current food movements range from strong to weak and local to national, addressing several issues including small-scale farming, labor standards, the environment and human health. I pay particular attention to the Organic Movement which has its figurative “roots” in the 1960’s but has created a massive food counter culture that even the largest food distributors are trying to be a part of. With the organic industry growing at a rate of nearly 20% in the current economy, there must be a strong desire for such a product. I predict that organic can have many advantages but due to its loose definition and scanty regulated system; it is not as affective in solving the harms of industrial farming as a farm that practices sustainability. In fact, even organic has gone “industrial”, deserting the founding values of local and few inputs. Other movements include the Slow Food Movement and land conservation, which are smaller subsets of sustainable thinking. I argue that these movements can be affective in solving the wrongs of industrial agriculture by sticking to sustainable practices, convincing farmers to stay small and chemical free and consumers to purchase locally.

Despite my advocacy of sustainability and alternative agriculture, I am not naive to the fact that most Americans are detached from the food that they eat; that being able to purchasing education, medicine, housing and even electronics are of greater importance to people than the extra cost of time and money to buy produce at a local farmer’s market. As a college student I

am especially aware of the restraints to “clean” eating. However, the destruction of the environment and rural life as supported by government policies should not be tolerated. Not only is it creating an unbalanced system where small farms struggle to keep afloat in a market where the product is sold for less than it took to produce. The current system is also reinforcing farming that requires several expensive inputs that leave lasting affects on the environment and the farmers wallets. I believe that if change can be made at the basic level of farming in America, combined with governmental action and refining of current agricultural policy, change can happen before it’s too late.

ONE

The Policy Behind the Food

Throughout the history of the United States, the government has been involved in shaping the nation as to what it is today. This is especially the case with agriculture. It can be argued that government policy and lobbyists have influenced any major segment of society, manufacturing, education, and computer technology either for the better or worse depending on your opinion. The agricultural sector seems no different than these on the surface. If anything, one may argue that agriculture is relatively unchanged in the past 100 years, farmers still work the land, grow the same old corn and potatoes they use to and feed millions of hungry Americans each day. This idealistic picture of American agriculture is still held by many people removed from the system. Despite the prevalence of this view, this chapter will argue that legislation since 1933 has dramatically altered the agricultural system in America.

First I will look at the reasons why the government has taken such an interest in controlling the agricultural industry. Why, in an apparently free-market economy, are there so many price controls and interventions in farming? Secondly, I will look at this involvement from a historic perspective. When did the government begin to get involved in the agriculture sector and under what social and political pressures? By looking at the historic involvement of government policy toward agriculture, I hope set the scene for the current policy and the issues associated with it. Lastly, I will outline the main ways in which the government controls the agriculture sector of the nation. I will look at several farm bills since 1933 and what they did to alter the system. Within these farm bills, there are different mechanisms that the government uses to alter agriculture policy, including federal loans, deficiency payments, price controls and

insurance for farmers. Lately, there has been debate in Congress calling into question the validity of government subsidies to the modern agricultural industry. This chapter will look at the fundamental reasons that subsidies came into play in regards to the agricultural industry and the implications those subsidies and the associated policies have on the farmers. Government intervention in agriculture first began out of necessity for food security following the Great Depression and proceeding war time years. This has shaped the modern industry to one that is heavily subsidized and favors mass production of commodity crops as the cheapest price.

Why Agriculture?

Farming is a tremendously unpredictable industry. There are so many uncontrollable environmental factors in growing food: key among these are fluctuations in weather, shifts of political power and economic climate, supply, demand and price in an increasingly global marketplace. Because of this, key policy makers and farm interest groups decided early on that intervention would be necessary to feed the nation and be competitive on world markets. In the 1930's it was evident by some that in order to maintain farmers' incomes as well as the longevity of production capacity the government would need to play an active role in regulating agricultural production. From a farmer's perspective there were two big concerns: product perishability and the biology and uncertainty of growing the commodities (Browne p.238). With this in mind, the government decided that agricultural policy needed to target the source of production, the farm. Therefore a history of regulatory policy toward agricultural in America, mainly beginning in the 1930's, came to be unlike that imposed on any other industry. Those early policies tended to deal with three main issues on the farm; maintaining farm incomes, production levels and soil quality.

The first policy was to maintain farm incomes. In the 1930's the government believed that "under the norms of surplus conditions, farmers cannot gain fair returns for their labors and investments without a regulated marketplace" (Browne p.238). This concept has certainly become a reality as will be discussed later in the paper. The second was to maintain production as to support the demand for food, for people and for livestock. Between pending wars and migrations to American cities for industrial jobs, farmers had their hands full. On top of domestic production, the government always had it's sights on having a strong agricultural exporting program. Lastly, agricultural policy was initially a means to protect the soil quality. That is, prevent something like the Dust Bowl from occurring again by protecting soil quality and other environmental concerns (Browne p.3). All three of these reasoning's--farmer incomes, food security, and land conservation-are still ingrained in the intention of policy made today but at varying levels of intensity. For instance, they are reflected in the subsidies and federal programs to protect the soil and to maintain production that will be discussed in detail later in this chapter.

Despite all these good intentions, the government can be said to have another reason for taking such an interest in the Agricultural Industry, profit. In the year 1984, fewer than 3% of Americans participated in the profession of farming. However, Agriculture as an industry provided 17.9% of American GDP (Browne p. 4). Today that number is down to 1.1% of the total GDP according to the CIA World Fact Book , yet policy still provides for price controls, subsidies and federal programs. In fact the average person would probably be surprised as to just how much legislation is made each year regarding the food industry. Between the years of 1980-1985, the government passed, 180 different food and agriculture related policy decisions. Some of these policies include, potato research promotion in 1984, revised grade standards for applesauce and apple juice in 1982, lowered sugar import duty in 1980 as well as reduced grain

industry record-keeping regulation in 1980 (Browne p. 259-62). These are just a small sample of the wide range of policy decisions made in just 5 years. Granted some of the decisions were temporary such as banning meat imports from Chile and signing a 5 year grain contract with the Soviet Union. However, the point is that the government takes serious interest in the way food is produced, traded and consumed in the US.

The Beginnings: New Deal Regulation

The roots of modern agricultural policy lie in the years following the Great Depression, as the nation entered into War. During this time, government intervention was necessary to meet the emergency by boosting prices, restricting production and increasing farm incomes (Paarlberg p.28). However, these interventions had lasting legacies that continue into modern day policy. It was quite easy under the distraction of war and tragedy to increase governmental power. President Roosevelt's "New Deal" policies and President Bush's "Patriot Act" are prime examples of this. In fact the "New Deal" was influential in setting the standards of agricultural legislation for a while to come. The idea then was that farmers needed a regulated market in order to "get a fair return for their labors and investments" during poor economic times (Browne p.238). In 1933 the Agricultural Adjustment act was instated to help the three main issues on the farm as discussed above, farmer incomes, food security, and land conservation.

The Agricultural Adjustment Act came early in the sequence of New Deal legislation and had a similar goal of getting money circulations throughout the economy as well as countering deflation by raising prices (Gardner p.216). Quite simply it did this by paying farmers to reduce acreage and allowing the United States Department of Agriculture to "purchase and store commodities and set inflexible price supports for crops" (Hosansky p.23). Essentially the bill introduced a soil conservation and a price support element into a struggling system with the

hopes that farmers could bounce back from the depression. The act also gave power to the Secretary of Agriculture. Under this new legislation, he (or she) could now work out acreage reduction agreements to maintain production as well as work with “agricultural middlemen” to maintain and regulate market prices (Browne p.215). This act was implemented successfully since it utilized three main methods to reach the act’s goals, giving greater government oversight of agriculture. The first was there was financial incentive to participate in this voluntary program. If farmers decided to comply with the new bill and reduce their acreage, they would receive a direct payment from the government. Secondly, the act helped to fund itself. The government taxed processors of commodities and then those proceeds went to fund the various programs including payments to farmers who let the government control their acreage. The last dealt with the regulation of commodities. Again the bill allowed for agreements on a voluntary basis between processors and distributors to help regulate the “marketing” of the various commodities. (Tweeten p.31). It is important to note what commodities mean in this case since it is a term whose meaning has changed over the years. In 1933, the Farm Bill declared that barley, cattle, corn, cotton, flax, hogs, milk, peanuts, rye, sorghum, tobacco and wheat are all considered “basic commodities” (Browne p.215). For the purpose of this paper, commodities are the few crops that subsidized by the government. The fact that livestock was considered a commodity may seem strange to today’s standards. Normally one wouldn’t hear of a cow being subsidized. However, in those times it was not uncommon to have livestock and crops on the same farm. In fact what is considered a commodity is not the only thing that has changed over the years; the face of a farm has also changed considerably.

The Changing Demographics of Agriculture

Farms today are much different than the farms during the times when the Agricultural Adjustment Act was enacted. In the early 1900's farms were more diverse. Of the 5.7 million farms counted in the 1900 Agricultural Census, 98% of farms had some chickens, 82% grew corn for animal feed and to sell, and about 86% had at least one cow for milking. Nearly a decade later, there were 1.9 million farms left in America of which only 4% were recorded as having chickens, 25% to grow corn and 8% to have a milking cow (Gardner p.61). This is due to the phenomenon of specialization, which was largely supported by government policy since it was seen as being efficient. While this may be true, the actual costs of America's developing monoculture may not be worth the benefits as will be discussed in Chapter Two.

During the times of the Agricultural Adjustment Act, farming was viewed as a nostalgic and honorable profession. An early notion called "Agricultural Fundamentalism" grew in defense of changing policy toward farms and advocated certain characteristics that farms should possess. Such rules as farming should be a family enterprise, and a farmer should always be his own boss informally mandated early agriculture in America (Paarlberg p.3). Another rule was that "Farmers are good citizens, and a high percentage of our population should be on farms" (p.3). Some of our earliest American leaders such as Thomas Jefferson advocated Agricultural Fundamentalism. In his work *Notes on the State of Virginia* he said "Cultivators of the Earth are the most virtuous and independent citizens" and then in a note to J. N. Demeunier he said "Agriculture is at the same time tranquil, healthy and independent occupation" (Monticello.org.). These quotes absolutely demonstrate Agricultural Fundamentalism. However as technology developed, wars ensued and the government began to take a greater interest in regulating this "traditional" industry, farm demographics began to change drastically.

As discussed above, WWI provided a great opportunity for the government to make policy whilst the people and nation were in distress. However, it seems as though the greatest change to the face of American farms came during WWII. It was during this time that America's agricultural production picked up tremendously while the depopulation of farms was accelerating. Prior to the war, agricultural production was growing at rate of about 1.1% a year. Following America's involvement in the war, this rate went up to 3.1%, a huge feat considering the loss of manpower and wartime rations. During four years following the beginning of WWII, 7.2 million people left the farm to either enter the armed forces or seek employment in the cities in the industrial sector (Paarlberg p.27). There are a few reasons contributing to this seemingly divergent phenomenon. The first reason is the increased availability of technologies. During the depression, agricultural technology was being researched yet few investors were willing to take the risks in such an unpredictable financial situation. However, from the years of 1939-1945 the ownership of tractors went from 1.4 million to 2.4 million and fertilizer use went from 1.6-2.8 million tons, both almost doubling to boost productivity (Paarlberg p. 36). More was being grown on the essentially the same amount of land (aside from those farmers who took land out of retirement to match the demand). Furthermore, as the productivity of farms increased, as it did with increasing tractors and fertilizer use, fewer people were needed to produce the same amount. A second reason for the increase in production was the introduction of several new governmental policies. One such policy was to increase the amount of "basic commodities" that received price supports. In 1939 a farmer could get price supports for crops such as sweet potatoes, oats, dry peas, dairy products, and flax seed along with the existing crops of corn, wheat, cotton and tobacco (Paarlberg p.30). Furthermore, many of the planting restrictions made in the 1930's were loosened. Therefore, some land was opened up for farming that was

previously retired. The outcome of the increased technology and new polities combined with the farmer diasporas resulted in a drastic change to the agricultural landscape of America. Between the years of 1945 and 1974, the number of farms in America fell drastically, from 2.3 million to 1.9 million. This decrease obviously did not come with a decrease in production as one may expect. Rather, farms became more efficient and technologically advanced while at the same time more people began seeking employment and professional opportunities off the farm. These factors aside, farming in America was mostly influenced by policy that encouraged efficiency, technological advancements and specialization.

The Process

There are several different ways that the government has intervened in agricultural markets and farm affairs. The policies today are greatly reflected in those of early legislation such as the Agricultural Adjustment Act. For the purpose of this paper, I will group the different types of intervention into two main categories, the first being Subsidies and Farm Credits and the second, Federal Programs. There can be some overlap as to the types of legislation in these two broad categories but generally, Subsidies and Farm Credits are direct payments or loans to farmers of certain commodity crops while Federal Programs are focused more on the industry as a whole. In general, subsidies are the costliest type of programs since it subsidizes the production of major crops among other things (Gardner p. 187). Before getting too far into policy, or in this case types of policy, it is important to distinguish the types of farms that receive aid and are affected by said policy. This is because the policies can be specialized to benefit a certain type of farm. The tools used by the government to influence the agricultural sector have become so ingrained in our system that some may argue they have become irrelevant or unfair. For instance, commodity support programs target certain crops like corn, which are more efficiently grown in

mass quantities on mono-cultured farms. Since small farms can't compete, the larger farms get a better package from the government and continue to dominate the market while the smaller farm transitions into other crops or go bankrupt. This is a major issue in current agricultural policy that will be discussed in the second chapter.

According to the USDA, farms fit into three main categories, commercial, intermediate and rural. To be considered a commercial farm, the farm must make an annual profit of \$250,000 or more. These farms tend to include what would be considered "industrial farms" that produce in great yields using various technologies like fertilizers, pesticides and advanced tractors. Intermediate farms must report annual profits below \$250,000 as well as report agriculture as a full time profession. Finally, rural farms also must report annual profits below \$250,000. What makes them different from intermediate farms is that they include residential farms, lifestyle farms and farms that are managed by retired individuals (USDA p.9). Therefore they do not report agriculture as a full time profession. Based on these distinctions all farms are not created equal. There are features, namely profits that keep them separate under the legislation in many ways. However, between 2008-2009, all types of farms received an increase in government funding (USDA p.10). This demonstrates that agriculture as a whole industry is viewed as important and that subsidies and funding to all types of farms have been successful enough in past years to continue them into the future.

Subsidies can take many different forms. The earliest subsidies were involved in soil conservation practices since soil erosion was a large fear of farmers and thus the government at the time. Obviously these specific subsidies were popular following the Dust-Bowl. Another early, and quite successful type of subsidy came in the form of farm credits. Farm credits, otherwise known as government back loans to farmers, were initially set up during the early

1900's to "alleviate the costs of financial emergencies" and to establish policies that would hopefully prevent similar emergencies from occurring (Gardner p. 196). Today they are mainly used as loans given to young people, low-income, inexperienced farmers or a combination to buy or start farms that they may otherwise not have sufficient credit to take out a regular loan (Gardner p.199). The system has changed little over the years and today works by establishing a network of "cooperative agriculture credit associations". Then the government uses the Farm Credit Administration to supervise Federal Banks and Intermediate Credit Banks to allow for the lending process (p.197).

Another type of subsidy is known as a Commodity Payment. Commodity payments are growing in popularity as a solution to maintaining farmers incomes and production levels in America. In this case, farmers get direct payments for the production of certain commodity crops, which as discussed above, has ranged in meaning over the years. Between 2004 and 2007 the average per acre subsidy ranged from \$25 an acre to over \$100 (USDA p.3). This range depended on the crop, area of the country and obviously productivity per acre for each individual farm. An important feature of commodity payments is that they are tied to the amount of commodities produces. Therefore, farmers that grow more corn for example, are rewarded in this system, regardless of how they grow it.

The biggest commodity intervention is said to have been during the Agricultural Adjustment Act, however, there were some mild interventions previous. Between 1919 and 1920 commodity prices decreased significantly. To help ease the blow the Agricultural Marketing Act of 1929 set up the Federal Farm Board. Their job was to see that private and public enterprise would supported the given commodity prices (Gardner p.215). During those times the notion that the government is responsible to place the floor under farm incomes by supporting commodity

prices was grounded in American mentality. Today this method is referred to as a deficiency payment. To illustrate how this type of subsidy works, an example is necessary. Lee Shafer is an Iowa farmer of corn and soybeans. Like so many other modern-day farmers, he specializes in those two crops due to it being more efficient and them being considered commodity crops. When the price of one of those crops drops, the government “cushions the blow” by giving extra money in the form of a check from the government, which can range depending on the crop and price. In this case, when the price of corn dropped, Lee Shafer received a check for 30-35 cents per bushel of corn he produced to make up for the decreased price (Mantel p.1). Lee Shafer’s particular situation demonstrates a deficiency payment, which is a federal program that issues direct payments to the farmers. Here the government pays the difference between the target price of a commodity crop and the market price. This is a voluntary program where the farmers who engage in the legislation must comply with government requests (Mantel p.21). These requests and regulation can range from a minimum number of acres planted to mandatory land “retirement” where the land must go dormant for a period of time to maintain soil quality, the latter being less popular in recent years. In the past, land retirement programs were referred to as “Soil Bank” or the “Conservation Reserve” and were introduced now and then as the political landscape changed but more on such acts later in the paper (Paarlberg p. 299).

Crops that are eligible for deficiency payments include, wheat, cotton, rice, soybeans, peanuts, minor oil seeds and feed grains, which includes corn (USDA p.6). These programs have been successful in the past but some critics argue that farmers have become too dependent on such programs and they reproduce an unequal and polluting system. While this may be true, not all farms are participating in or qualifying for the commodity payments. For instance in 2009, only 37% of farms received government payments. Within that percentage, the largest 12.4%

received over half of all payments (USDA p.1). Similarly, in 2002, only 40% of American farmers received direct assistance (Hosansky p.5). In 1992, there was a similar trend to the 2009 statistic where, only 15% of the farms that got any direct payments, received 90% of direct revenue payments issued that year (Mantel p. 4). Upon looking at these trends it seems as though the payments have spread out in regards to those who receive it, while the amount of farms participating has stayed relatively stable, in the past 15 years. This makes sense seeing as though the largest farms are the commercial farms that are specialized in only growing large amounts of commodity crops like corn and soybeans. Thus those industrial type farms will continue to receive payments as they maintain their commitment to grow commodity crops and the government continues to set and compensate for market prices.

The second main type of government intervention comes in the way of loans or insurance that are issued to the farms by the government as opposed to direct handouts. As a supplement to commodity payments, there exist Non-Recourse Commodity loans. A farmer would enter into this type of loan if he was concerned for his crop or if he needed the extra money to fund the process of production (fertilizers, fuel, seeds etc.). If a farmer chooses to enter into one of these types of loans he must first put up his crops as collateral to receive the financial loan they desire. Then there are two main options for repayment options. The first is that the farmer can repay the loan with interest after his crops grew and were sold successfully. This is typically the case if the market price is above the loan price since otherwise the farmer might want to hold on to their crops as to get a better price. The second option happens when the market price is below the loan rate of the particular crop. In this case the farmer can “forfeit their crop to settle the loan” (Mantel p. 21). Farmers that have to resort to the second option are often less established or have weaker financial standing and cannot hold out to see if the market will change in their favor.

Finally, a farmer can receive insurance from the government. Multiple-Peril Crop insurance protects farmers from crop damage or loss as a result of natural disasters. In 1995, this type of insurance was made mandatory for any farmer who was receiving other types of government aid. This insurance is linked to two of the main reasons that government intervention is viewed as a necessary evil. First the industry is extremely unpredictable since an entire crop could be lost due to natural disasters or insect infestation. Secondly, the idea of crop insurance is a way to guarantee some kind of farm income in those rare cases of emergencies. In 1993 large flooding in the Midwest destroyed a large portion of crops. Because of crop insurance, the United State Department of Agriculture paid out around \$2.9 billion to those farms affected. Out of this money, half came from disaster assistance programs and about a third came from crop insurance funds (Mantel p.27). Crop insurance is a valuable tool available to farmers at the hands of the government that has proven to serve the needs of farms in times of disaster. Like the other forms of legislation developed to intervene in Agricultural production, crop insurance was first proposed in the form of a Farm Bill. Farm Bills are the mechanism in which the government introduces farm and food related legislation into the system.

Farm Bills

Since the 1930s “farm bills” have been periodically enacted often with substantial revisions to existing policy. The Agricultural Adjustment Act in 1933 set the stage for acts to come. After the depression, many historical events occurred that altered the way Americans and their government looked at food supply and production. During these times, legislation was passed that would end up seriously shaping the current system of industrial agriculture and those alternatives to it. The acts passed during WWII, the 60’s and each decade after leading to 2008

shed some light on trends that have occurred and provide some background to the problems posed in Chapter Two.

Agricultural Adjustment Act and War Time Acts

The Agricultural Adjustment Act was the largest intervention in agricultural markets to happen up to that point in history. Its main goal, like other “New Deal” legislation was to get money circulating around the economy by getting the prices back up. In general it sought to intervene in the market by idling farmland and controlling production (Gardner p.216). Five years later, the Agricultural Adjustment Act of 1938 built upon its predecessor by adding new “features” to the existing policy. It introduced many of the instruments discussed above, such as mandatory non-recourse loans for of wheat, cotton and corn producers, crop insurance for wheat, deficiency payments, for corn, wheat, rice, cotton and tobacco producers, and consumer protections aimed to insure the “maintenance of adequate reserves of food, feed and fiber” with an efficient storage plan (Tweeten p.31). Therefore, the wartime era mimicked that of the Agricultural Adjustment of 1933 in that it sought to ease the blow of market conditions on farmers and to control production to guarantee a stable food supply.

Despite this consistency, there were several notable wartime acts that reversed earlier policies. Rather than attempting to control production by idling farm land and soil conservation practices as earlier legislation, these acts sought to boost production as to feed the war demand. Acts made in 1942 by the Stabilization Act, 1944 by the Surplus Property Act, in 1948 with another Agricultural Adjustment Act and in the Agricultural Acts of 1949 and 1954, all sought to raise the price support level of commodity crops such as corn, wheat, rice and cotton (Tweeten p. 34). In general high prices for commodity crops encourage more people to enter into farming

since there is good money to be made and more farmers entering the field meant a boost in production. However, in 1956, remnants from earlier soil conservation legislation reappeared. The Agricultural Act of 1966 set up the Soil Bank, which tempted farmers into “retiring” acres of land with payments (Paarlberg p. 205). There are many patterns like this where legislation is phased out and then reintroduced as necessary. The goal of the War time years was simply that the government wanted to encourage production with good prices for the farmer. However, in the years to follow, the government had to play a careful balancing act with price controls since a surplus was no longer needed after the wars end.

1960's

After the various acts in the 40's and 50's, the term “adjustment” began to be phased out of legislation. This is because as seen, there was a shift from resource adjustments, meaning a focus on the soil and the crops to a policy with a focus in price supports (Paarlberg p. 30). The 1960's witnessed a slight shift back to the commodity focus of the 30's. The two big acts of this decade came back to back with the Feed Grain Act of 1961 and the Food and Agriculture Act of 1962. The first was an attempt at soil conservation by asking farmers to convert some of their corn and sorghum acres to soil conservation usages (Tweeten p. 35). For instance, a farmer was encouraged to replace a field of corn for legumes. This was to help the soil become more nitrogen rich, which in turn acted as a fertilizer. The farmers that choose to abide by the governments recommendation received better price supports than they would have gotten otherwise. The second big act sought farmer involvement in policy making. Previous to the Food and Agriculture act of 1962, there existed a national quota that required 55 million acres of wheat to be in production. The 1962 act got rid of this mandatory quota and established a system where the Secretary of Agriculture would set a new quota that would be passed if no more than

1/3 of the voters disapproved. This system was seen at the time to be the best way to hold down government costs and control production as to guarantee a good price for the farmer (Tweeten p.36). This power would eventually be revoked in future years as the political focus changed to that of more acres in production.

1970's

The 1970's proved a reflection of past policy as well as the introduction of more consumer oriented programs, some of which have lasted into modern time. The Agricultural Act of 1970 included further legislation on price supports as well as land conservation attempts. This act overturned the established long-term agreements of the 60's and set up partial land retirement acts. In order for a farmer to qualify for price supports, they had to agree to set aside a certain amount of their land for "conservation purposes". In reality, they only had to grow something other than their principle crop on that retired land as opposed to letting it sit completely dormant as the act might suggest. For example, if a cotton grower wanted price supports on his crop, he was required to set-aside up to 25% of his land where he couldn't grow cotton but could grow soy or other crops (Tweeten p. 38).

In 1973, the Agriculture and Consumer Protection Act was passed. This act did several things but most notably, introduced disaster payments. As noted above, disaster payments are given to farmers who couldn't plant or harvest their crops due to a drought, flood or other natural disaster. Specifically, these payments were made to farmers that were prevented from harvesting two thirds of their crop. (Tweeten p. 39). Disaster payments like this certainly still exist today and can be a saving grace to farmers after a flood or storm. Another feature of the decade was the limiting of the wheat market. In the 1973 act, legislation was made that limited the total payments available to an individual to \$20,000 dollars (Tweeten p. 39). This was particularly

interesting due to the large world wide demand for feed grains such as wheat. Some may say this was a contrary thing to do since in the past, when the demand is high the government helps to increase production to meet the demand.

Thus far in the historical analysis has focused primarily on the policy. However there are some important trends to notice during this time period. The agricultural industry underwent a gradual shift when farms became more efficient and consolidated. For instance, between the years of 1945 and 1974, the number of farms fell from 2.3 million to 1.9 million. At the same time, the number of farmed acres per farm increased from 51 to 491 acres (Mantel p. 10). This is evidence for the fact that technology was making farms more efficient and less people were necessary to produce the same amount of food. As a result, many people were freed from the farm to work industrial jobs that were growing in popularity and opportunity. This was shown early on when 7.2 million peoples migrated off the farm during the years around WWII. This is a trend that will probably continue much into the future that can arguable be attributed to the policy system of supporting larger farms as will be discussed in Chapter 2. It may also have contributed to a reemergence of Agricultural Fundamentalism in response to such drastic changes as Chapter 3 touches on.

1980's

During economic downturns, the Keynesian economic theory practiced since the Great Depression has dictated increased government spending intended to stimulate growth.

Government response to downturns in agriculture follow this pattern. The Food Security Act on 1985 was seen as a response to “worse than usual” farm economic conditions. This is because of the increasing production costs and associated debt of farmers in combination with the “shrinking foreign market” for American crops (Browne p. 217). Thus an agricultural

depression ensued, which caused agricultural exports to actually decline for the first time in eight years (Mantel p. 12). Things got so bad for farmers that in 1982, net income from farming was at it's lowest level since the times of the Agricultural Adjustment Act in 1933. However, giving more money to support agriculture faced some opposition, since there was a relative discomfort in the amount of money spent on farm programs of the past. Over the course of 2 years, the amount of government money spent on farm support programs more than quadrupled with \$4 billion dollars spent in 1981 to \$19 billion dollars spent in 1983 (Browne p. 219). This fact was combined with the current state of rural America, who was suffering with bank foreclosures and the large debt associated with farming at the time set the stage for legislation attempting to solve their problems, all with the budget in mind.

As a result, programs were established that would protect farmers while at the same time expanding the American agricultural market. Prior to the 1985 farm bill, an attempted solution was introduced: Payment-In-Kind programs or PIK. These programs were designed to help farmers without spending too much budget money. PIK was set up so that the government could “use stocks of crops already owned by the USDA to pay farmers to retire land” (Mantel p. 9). Farm reduction programs like this have been seen throughout each decade, most with the intended consequence of decreasing farm surplus. Goals of this particular program included: reducing production while at the same time ensuring adequate supply, minimizing direct government payments, improving land conservation practices, increase farm incomes and finally, help “ease a storage problem” (USDA Economic Research Service p.6). Like most programs of this type, it focused on the commodity crops of wheat, sorghum, oats, cotton, rice and corn (p.8). Despite this program being popular with farmers, it did not prove to solve the solution the agricultural depression.

The Farm Bill of 1985 thus, was a response to the failed programs and economic hardships of the time. Its main goals were to lower price supports in order to encourage exporting to foreign markets with income protection extended to make up the lost price supports (Mantel p. 9). In addition, environmental conservation programs were enacted. Prior to this bill, conservation attempts were meant to limit production and prevent events like the “Dust Bowl” from occurring. This time, however, the concern was to “convert highly erodible acres to vegetative cover” (Mantel p.9). Therefore, farmers couldn’t just plant a different crop than their principle crop like the cotton example above. Environmentalists lobbied for such legislation as a way to discourage farmers and developers from trying to “convert” wetlands and other delicate ecosystems to farmland. This program was largely successful. In the years of 1983, 1987, and 1988, over 75 million acres were temporarily “retired” (Gardner p. 217). That was the equivalent of over one quarter of all farming acres idled in those years of the decade. However, in the 1990’s this would change dramatically as production again took the forefront. While this time period sought to decrease major government spending in agriculture, it ended up being the most expensive farm bill of it’s time (Mantel p. 10).

1990’s

Farm programs between 1965 and 1990 averaged about \$10 billion in total. In the 1980’s the rising costs of the programs led to an “increase of the federal budget for farm income stabilization” (Gardner p. 220). The numbers worked out to be around \$12,000 per U.S farm out of the total \$25 billion budget. This really set the stage for the 1990’s when program cuts had to be made. As in the past there were many different interest groups that came together to influence the legislation in 1995 and 1996. For instance a study team composed of Agribusiness Association of Iowa, Iowa Corn Growers Association and Iowa Cattleman’s Association set forth

certain goals. Those goals included ending government attempts at controlling supply by requiring farmers to idle acres, maintaining commodity supports and loans, an income guarantee of 70% of normal crop revenue and more freedom in planting variety and quantity (Mantel p. 4). Note that these groups represented large “industrial” type farms who wanted no restrictions on how many acres they can develop. Previous to this bill, there was some legislation attempting at allowing more freedom in the farm sector. In 1990, a bill was passed that touched on the popular topic of acreage idling. Essentially, acreage idling would continue but new flexibility was offered for the remaining acres. Farmers could receive income support on acres with crops specified in the program as before, while at the same time they could grow any crop they want to on up to 15% of their total acres (except vegetables and fruit) while still maintaining the same government payments (Mantel p. 11). This meant that farmers could have a bit more flexibility in what they planted, while at the same time maintaining the benefits of income support. However, despite the legislation of the early 90’s the big changes didn’t happen until 1996. The requests by the various agricultural associations above represented the general opinion leading up to the Federal Agriculture Improvement and Reform Act of 1996.

One of the biggest changes of the 1996 legislation compared to past acts, came in the form of land idling. In fact, this bill acted in direct contrast to the 1895 Food Security Act, revoking the mandate of complying with conservation and wetland requirements in order to receive crop insurance (Nelson and Schertz p. vii). Furthermore, this bill removed the power of the Secretary of Agriculture to “conduct annual acreage reduction programs” (Gardner p. 217). As mentioned previously, this power began to weaken in the 1980’s. Both of these provisions directly answer the demands of the agricultural interest groups mentioned above. No longer

could the government mandate that a farm idle acres in order to participate in crop insurance programs or utilize price support programs.

Also within the Federal Agriculture Improvement and Reform Act of 1996, otherwise known as the FAIR act, was the Agricultural Market Transition Act that sought to restructure the way direct government payments were made. Essentially, this act replaced direct payments with a series of predetermined annual contract payments know as “payment flexibility contracts” or pfc’s (Just p. 5). These contracts were made available for eligible participants including, owners and producers on rented, owned, leased or shared land. The commodities included in this program wheat, corn, sorghum, barley, oats, upland cotton and rice each having its own specific percentage and amount of money specified for that particular crop per year until 2002. For instance, corn was to make up 46.22% of contracts with \$2.5 billion set aside for payments in the year 1996 alone (Just p. 6). However, there was some flexibility included in this particular bill similar to the 1990 legislation. According to the bill “Any crop of commodity may be planted on PFC acreage except fruits and vegetables” (Just p. 8). Despite this similarity, the 1996 bill departs from past legislation in more way’s than acreage idling and PFC’s.

Dairy is something that can be sometimes forgotten when dealing with agricultural policy. However, prior to this bill, there were price supports in place for milk. The 1996 act eliminatd these acts in the year 2000 and replaced them with a “recourse loan program” that was “aimed at providing price stabilization rather than price support (Stillman p. 13). This change affected the short-term stability of the dairy industry by offering loans and price supports for cheddar cheese, butter, and nonfat dry milk. The program’s main purpose was to help the processors “through temporary storage” of the above mentioned eligible dairy products. This sets the dairy industry apart from other agricultural sectors in that the farmer has less flexibility

in what they can do with government money. Another interesting aspect of this section of the bill is the Northeast Interstate Dairy Compact. This agreement which was granted by the agricultural Secretary, allowed the participating states (Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island) to influence price of Class I milk in that region (Stillman p. 15). This aspect of the act demonstrates that coalitions can influence policy from the bottom up. In this case, the coalition consisted of states with a special interest in setting the regional milk price. This decade served to cut down on the massive government spending of the 1980's by altering some unpopular programs like land-retirement. At the same time, it deregulated certain aspects of farming that could have long term benefits such as environmental and soil conservation programs. This transition represents the more modern approach of agriculture as an industry that receives aid but does not have to comply with environmental regulations, which in my opinion is a bad thing.

2000's

There were two significant farm bill's of the 2000's up to this point taking place in 2002 and 2008. President Bush signed the first bill into law on May 13th 2002. The main goal of that bill was to help farmers, which would in turn stabilize the agricultural sector. This is obviously a generic goal that could be applied to any of the bills discussed thus far. In reality, the bill touched on support for more than just farmers. For example Food Stamps and nutrition programs were singled out to receive \$137.2 billion over the next ten years. That made up a little over half of the \$249 billion allocated in total to increase farm and other programs. Other chunks of the agricultural payment pie included \$90 billion in subsidies and \$89.7 billion in commodity support programs (with the bulk going to grain and cotton crops (Hosansky p.2). In total, this bill worked out to be an 18% increase in funding from 2001 (p.17).

What exactly did the government do with all that money? First they used it to maintain existing programs. For instance, in 1996, the Farmland Protection Program was allocated \$35 million, which was then reauthorized by the 2002 bill (Hosansky p.20). This program allowed the federal government to act as the developer by buying farmers land. Then they had the farmers agree to keep the land in production. In this case, production is meant by farmers could planting to 100% of their total base acreage to any crop except fruit, vegetables or wild rice and that the purchased land had to be maintained for agricultural use (House Committee on Agriculture). At the same time, many acres of land were engaged in long-term contracts under the Conservation Reserve Program. In fact about 8% or 36 million acres of American land was idled or retired (Gardner p. 217). Despite maintaining some remnants from earlier legislation, there were a few new and important developments in this particular bill.

The Food, Conservation and Energy act of 2008 was the first farm bill to include a title for fruit and vegetable production (House Committee on Agriculture). However, in general, this act was a reflection of past policy that focused on covering commodity price support, farm credit, land conservation, food assistance and nutrition. First, conservation programs like wetland restoration and land retirement programs were set to continue in this bill, only this time with reduced funding as in previous years. This is reflective to policy in the 90's that wanted to find other ways to fund this program without using government money. Secondly, there was increase funding for "pest and disease management". The goal was that this funding would help catch insect infestations before they damaged the crops. Thirdly, there became available new direct payments for producers that have had certain acreage of corn, barley, grain, oats, cotton and rice, all traditional commodity crops. For instance, farmers could receive \$0.52 per bushel for wheat and \$0.44 for soybeans (House Committee on Agriculture). Acts like this

tend to create a dependence between the farmer and the direct payments. In the second chapter, I will discuss how this is ultimately a bad thing since it locks the farmers into a cycle of growing more and more with little return.

The 2008 bill is structured to include several titles. The first one of interest is the “2008 Farm Bill Commodity Title: Investing in a Strong Safety Net that Ensures Stable Food Supply” which accounts for about 13% of the total budget for this bill. Within this title, 25 different crops are defined as commodities, all of which qualify for support. These include the basics, corn, cotton, barley, oats and soybeans with some other additions of sugar, honey, and lentils (House Committee on Agriculture). Furthermore, this title declares that there are to be no payments on farms that are of 10 acres or less. This makes sense since to be a production farm at the level the government wants, you need more than 10 acres to work with. Finally, dairy is again supported as long as it’s cheddar cheese, butter or nonfat dry milk. While it is well known that there are several hundred other possible dairy products, these three are supported since the government buys these products for exporting and domestic use (House Committee on Agriculture).

Perhaps the most important title was the “2008 Farm Bill Horticulture and Organic Agriculture Title: Providing Resources for Fruit and Vegetable Producers” since it was truly the first of it’s kind. This program catered to the growing demand of the organic industry that has boomed in the past 5 years. This title gave \$5 million for “organic marketing data collection and publication” and created a Farmers Market Promotion Program. Furthermore it gave \$33 million to “expand opportunities for direct producer-consumer marketing” (House Committee on Agriculture). Notice that it did not give any direct aid or money to organic farms or farmers as commodity and deficiency payments do for conventional agricultural. Rather if focused on the

marketing aspect of organic food from the farmer and consumer standpoint. This title also highlighted the roll of the USDA in the growing organic market. According to the USDA website, “The USDA’s National Organic Program regulates the standards for any farm, harvesting, or handling operation that wants to sell a product as organically produced” (House Committee on Agriculture). In this way, the government truly is regulating each aspect of the industry, even emerging trends like organic production. Finally, in the insurance title of the bill, there is a segment just for organic crops. It was declared that if “no significant difference” is found in the risk of production between conventional and organic crops, then and only then will the government “reduce premium surcharges on organic crops” (House Committee on Agriculture). In this way, the government has its finger on the pulse of the emerging organic craze while having all it’s agricultural bases covered so to speak.

American Food “Security”

Farming is a multi-billion dollar industry involving millions of Americans and centuries worth of policy. While the physical number of farms and farmers in America had declined tremendously, there has certainly not been a shortage of food-on the contrary American farms produce an unprecedented surplus of food that is exported to nations like Mexico who now struggle to compete with the cheap American prices, destroying their native corn industry (Fitting p. 17). New technologies and government support has maintained high production levels while farm interest groups lobby for their causes. As seen in the various farm bills they are often successful. At the same time, government intervention has played a huge role over the course of our history making many commodity farmers dependant on aid and price supports. The government has defined what is considered a commodity itself. Everything from exports to acreage is regulated and carefully planned as to guarantee “food security”. Back in the 1930’s

and during the War era, emergency aid was necessary to control production and regulate the markets as to ensure farmers salary's as well as provide surplus food for the war cause.

However, the industry is changing at a tremendous rate while maintaining some of the early on fundamentals like price controls, acreage idling and commodity subsidies. The question is, in a time when food is being produced using a tremendous amount of chemicals and fossil fuels and farms are being consolidated into "industrial farms", are the policies still effective. Yes, they might be effective in feeding America and parts of the world, but are they helping or hurting agriculture as we like to picture it; rural, simple, healthy and wholesome. The next chapter will touch on these questions and put a face to these policies. What does an "average" American farm look like and what is it producing. Based on the policies above one can guess they're not producing broccoli.

TWO

Industrial Agriculture and the Policies that Support It

In America today, agriculture is dominated by what is known as “industrial agriculture”. This is a result of years of farm bill legislation and the interests of powerful lobbying organizations. This chapter explores the current agricultural industry in America, highlighting the importance of large-scale industrial farms to our food economy. While only 12% of America’s farms are classified as industrial farms, these farms produce 84% of farm goods, a yield made possible largely through dependence on pesticides, antibiotics and most recently, genetically modified crops. (Ferguson p. 1). These practices of industrial farms have changed the face of American Agriculture dramatically from the early days of farm bill legislation.

Until recently in American history, agriculture depended on “internal resources” such as the recycling of organic matter, and weather patterns (Magdof et al p. 77). Now the industry relies heavily on external mechanisms such as fertilizers, seed breeding technologies and complex machinery. This has taken a serious toll not only on the crops produced, but on the surrounding environment and rural life. This new breed of farms, has changed the quantity and method of producing the product as well as the role of the farmer. Many farmers struggle to keep afloat financially while agribusiness giants continue to vertically and horizontally consolidate aspects of the industry. Today American consumers face an agricultural industry, which is laced with politics, chemicals and schemes to benefit larger farms. At the same time consumers are blinded with the cheapest food prices respective to income in decades but at what cost to the environment and to “traditional agriculture” as we know it. Environmental damage from agricultural related chemicals is just beginning to surface as a public interest issue. This chapter

is a critique of the main factors contributing to the drastic departure from traditional agriculture, creating new issues concerning the farmer and consumer. Farmers currently use close to 23 million tons a year of chemical fertilizers to produce mountains of corn, wheat and other “commodity crops” (Walsh p. 4). They are being forced to expand their farm so that they can keep their head above water in a market that favors mass production and high inputs. The industrial system of farming is contributing to environmental damage, such as a dead zone in the Gulf of Mexico costing the industry 212,000 tons of seafood a year. The environment, however, is only one victim of industrial farming.

This chapter will first provide a contrast between the traditional farming system and the conventional system today. Secondly I will determine how legislation and lobbying have contributed to the rise of industrial and large-scale agriculture. This leads into the next part, which looks at the actual features of the modern agricultural industry, highlighting specialization, agribusiness and the development of new technologies. Each of these overlapping aspects contributes to negative side-effects, mainly environmental damage and the decline of small farms. Lastly, I will not forget arguably the most important victim of that industrial agriculture affects; the farmers. As the number of farms decrease with the rise of new technologies, so to do the number of farmers. Not only that, but farmers are seeing less and less of the “farm dollar” and being forced to farm more acres without a substantial financial benefit. Overall I’ve found the current agricultural system to be troubling as a food consumer and as someone concerned with the environment. This chapter attempts at providing an objective view on the industry and its interrelated aspects with a slighted conclusion based on my research. Policies have given rise to a new agricultural system modeled on the efficiency of the industrial system. This method is not sustainable given it’s current rate of destruction particularly of the environment and farmers.

Agriculture Then and Now

While farming of the past and present are both heavily shaped by government policy, today's agricultural system as several distinct features, lending to new and more expansive policies. According to author Paul Roberts, the modern farm bears as much resemblance to the traditional farm as "automobiles did to horse-drawn wagons" (Roberts p. 23). While this is certainly not true of every farm in America, the bulk of American agricultural products stem from the industrial farm model that Roberts refers to. Of the many changes it has introduced, three have been of decisive importance; agribusiness, specialization and the development of new technologies. While there is some overlap as to the methods and affects these change have produced, it is safe to say they have certainly altered the way food is grown and processed in this country.

The biggest difference between traditional and modern agriculture is the development of "Agribusiness". Professor Ray Goldberg and Professor John H. Davis in 1957 coined this term based on their observations of the changing agricultural industry. Agribusiness refers to the "integration of farm production". This means that under the Agribusiness model, inputs like seeds are also connected to the farming machines, which are also connected to the processing, transportation and retail among other steps. Furthermore, the companies associated with each step are also integrated, so much so that some companies control all levels (Paarlberg p. 127). This differs from traditional agriculture where the inputs would be minimal. For instance, farms might save seed to be used each year and use their horses as machinery, keeping their inputs "on the farm". Since the introduction of that term, Agribusiness has become the primary model for food production in the US. Paul Roberts sums up the concept nicely:

“Under the new agribusiness model, the farm has become an utterly rational enterprise in which ever larger inputs of capital in the form of seeds, fertilizers, pesticides, machines, fuel and research delivered predictable increases in output and profit” (Roberts p.25).

This describes the farm’s transition to an industry, which like a factory, can produce consistent products. While some view this as a modern miracle, this process is destructive to the environment, small farmers and traditional farming, as we know it. On top of that, Agribusiness makes up arguably the most powerful agricultural lobby, influencing policy and politicians to their favor. Later in this chapter, I will go into more detail about just how Agribusiness and the industrial farms it produces works today as well as just how much Agribusiness influences politics.

Another large difference between modern and traditional farms is specialization. In many ways the specialization of agriculture is seen as the driving force behind modern production. Like other sectors of production, specialization makes the agricultural process more efficient. In the early days of American agriculture, farms produced several different types of crops as well as raised animals. While these farms were inefficient to today’s standards, they served to produce a diversity of products and were fairly self-sufficient. Today, farms are categorized into the commodity they grow. For instance, there are Southern poultry producers, Midwestern cash grain farm and Western vegetable growers (Mantel p. 11). To illustrate the difference in agriculture as a result of specialization, it’s useful to look at modern day farmer George Naylor as an example. Mr. Naylor is a third generation farmer in Iowa but the family farm’s demographics have changes significantly. Back when his grandfather farmed the land, it was common to have horses, cattle, chicken, apples, hay cherries, hay and potatoes along with corn (Pollan p. 38). The farm produced enough for the family to consume as well as sell on the market for profit. This was typical of most farms of that time period. Today this has changed

dramatically. George Naylor's farm is practically a "food desert" in that it can no longer support a diet fit for humans. His farm grows the commodity crops of soybeans and corn on a massive scale similarly to his fellow Iowa farmers. Naylor's farm underwent a transition, becoming specialized to produce one or two commodity crops to be sold on the market. This farm is certainly not an exception to modern agriculture. Over the past 100 years, specialization slowly began to dominate American fields. In 1900, there were 5.7 million farms counted by an agricultural census. Of those farms, 98% had chickens, and 4.5 million has at least one cow for milk. Less than a century later, these numbers have changed significantly. In 1992 of the 1.9 million farms counted in a survey, only 4% had chickens and 8% had milk cows. (Magdoff et al p. 61). While those are just two of many agricultural products produced, overall, the amount of commodities per farm dropped from 5.1 to 1.8 over those years. This development in agricultural history has not only changed the physical landscape of farms but has several negative drawbacks in regards to the environment and to the small farms which will be discussed later in the paper.

A third drastic departure from traditional agriculture came after the WWII with the discovery a new use for ammonium nitrate, a byproduct of explosives made during the war. When the government decided to spread it on fields as fertilizer, a new system of farming was born (Pollan p. 41). Briefly, traditional agriculture requires three main things for a farm to produce; water, sunlight and soil. The last component became especially important when agriculture began to grow to larger scale production. This is because nitrogen is found naturally in soil, and as the soil is used for crop production, that nitrogen is used. Without proper maintenance of the land by planting nitrogen infusing crops like legumes or letting the land sit dormant for a long period, the soil will run out of nitrogen and fail to continue being productive.

It wasn't until 1909 that a process for producing synthetic nitrogen was discovered, and it wasn't until the 1950's that synthetic nitrogen as a source of fertilizer was seriously implemented in the U.S. Without it, production would have never reached the numbers of today, and likely there would be several million fewer people on earth (Pollan p. 43).

Synthetic nitrogen fertilizer is only the beginning of technological differences with the modern farm and the traditional farm. A huge topic of debate worldwide centers the modern agricultural development of genetically modified food. Humans have been "modifying" seeds to contain desirable traits for generations. For instance, in Mexico, the domestication of corn, or the alteration of certain corn qualities by humans for agricultural purposes is dated up to 5,000 years ago. Today, certain corn seeds have been bred to produce narrow kernels and to be harvested in six months (Fitting p. 20). This practice has long been valued in the agricultural community as an important tool in producing the best varieties of the product for the farmers region or regional tastes. However, recently this old practice has been updated to include a more scientific process of transferring strands of DNA into the organism to produce desirable qualities. This first product of this kind of modification to be sold in America was a tomato called the FlavrSavr tomato that has an "extended shelf-life" (Paarlberg p. 163). While this particular product did not take-off with consumers, the technology began infiltrating all sorts of commodities like corn and soybeans. For instance, the agribusiness giant, Monsanto, was the first to develop a variety of soybeans that would resist the companies own herbicide chemical Roundup. Therefore, upon application of the chemical, the weeds would die but the soybean plant would survive since it had been scientifically modified to resist key ingredients found in Roundup (Paarlberg p. 163). This technology is still new for most countries around the world. However, it has truly taken off in American agriculture with several potential negative consequences to both the farmer and

consumer as will be discussed later in the paper. While there are endless other technologies such as twelve row planter machines, high tech John Deere combines, chemical products like fertilizers, pesticides and Genetically Modified technology have contributed significantly to the revolution of industrial farming. Without the means to grow massive quantities of food, there is no need for giant tractors and other machinery. For this reason, I rank chemical enhancers and GM products to be the most significant technologies that set apart modern agriculture from traditional. Add these technologies to specialization and agribusiness, and you get the three biggest factors contributing to today's industry. Before delving into the critique of the modern industry, it is important to note how these big changes interact with the policy that in some cases corresponds to the emergence of the move to industrial agriculture.

Farm Bill's Influence Today

By modern definition, the Farm Bill is the legislative package that renews America's farm subsidy entitlements every few years (Paarlberg p. 100). As seen in the first chapter, farm bill policy has been influencing agriculture heavily since the 1930's. Today the farm bill has grown to include not only agricultural provisions like commodity crop subsidies and disaster payments, but health and nutrition programs for the poor, food stamps and even an organic food title. Most important for the purpose of this paper is how the farm bill policies have contributed to the rise of specialization, agribusiness and the development of new technologies, which have led to the several negative side-effects as has been alluded to. Specifically, politics and the resulting policies in the past 30 years have pursued an agenda that puts monoculture, or the focus on one species of plant in the forefront of the agricultural landscape. With several different interests rallying to be heard, it happens that in our country often the loudest voice is the one to achieve favorable policy. In this case, Agribusiness and those who support it's

existence have dominated the political rhetoric up until recently with the emergence of a counter-agricultural movements like “organic”. Before anything becomes a law, it must undergo the various steps of law making in Congress.

Bills are first drafted by agricultural committees, which are made up of House and Senate members often from “farm states” like Iowa and Wyoming. Like other types of legislation, it is important for the committee to include provisions that will satisfy “the minimum needs of both Republican and Democrat member to ensure bipartisan support” (Paarlberg p. 101). Not only must there be partisan agreement, but there needs to be provisions for different geographical regions, urban and rural communities and even titles that will appease environmentalists. This way the committee is covering all it’s bases to ensure support and passage of the bill. Once the bill is drafted and edited, it is taken to the floor to be voted upon. At this stage, member of Congress utilize the method of “vote trading”. Here, members representing farm districts convince members representing urban district or states to vote for the bill in exchange for a promised vote in the future. For instance, if a representative from a farming community in Iowa needs the farm bill to pass in order to satisfy his or her district, they will make a deal with an urban representative from New Jersey who may have no interest in the farm bill, but will vote yes upon a promise from the Iowa representative to later vote on a urban housing bill. This exchange of support has allowed farm bills to be consistently passed for several generations in America. However, there is another underlying factor to the strength of the farm bill in comparison to other types of legislation; the Iron Triangle.

The Iron Triangle is made up of House and Senate Agricultural committees, the United States Department of Agriculture(USDA), and private organizations that lobby for farms such as the National Cotton Council of America or American Farm Bureau Federation (Paarlberg p.

102). These organization help continued passage by pouring resources (money and time) into candidates for office, who are known to be farm supporters. That way, Congress is packed with enough guaranteed votes for the farm bill. In turn, House and Senate members receive substantial campaign contributions and support. Finally, the USDA helps to implement the passed bills as to maintain an important bureaucratic roll in an otherwise “post-agricultural era” (Paarlberg p. 101). Because of this, the agricultural lobby continues to this day to be a powerful influence in a sea of other policy issues.

Members of Congress are constantly worried about being re-elected. It is a well known fact that re-election requires significant funds in America. Between the years of 1995 and 2006, 43% of the farm payments allotted by Congress in farm bills went back to the districts of member of the House of Representatives that serve on the Agricultural committee. Similarly, states where their Senators served on the Agricultural Committee received 58% of the total subsidies (Lewis p. 2). Therefore, members of Congress tend to vote for or against bills that will make their constituency happy, which will aid in their re-election. The farm lobby a powerful body made up of various interest groups who want certain benefits. In recent years, this particular lobbying effort has maintained subsidies, which to many in America seemed wasteful or unnecessary. For instance, the 2008 Farm Bill has a price tag of around 286 billion dollars. President Bush, who was on his way out of the White House decided to veto the bill claiming it contained wasteful spending. This was a bold move that he certainly would not have made had he been up for reelection. However, members of Congress overrode the veto and passed the bill anyway in fear of angering the farm lobby and losing their representative positions (Paarlberg p.100).

As eluded to previously, the farm lobby is very popular in influencing favorable

legislation. Between 1990 and 2006, the farm lobby contributed \$459 million to campaigns. Out of this total, \$91 million came from commodity producers (Roberts p. 292). Following the trend of “buying the vote”, the farm lobby has certainly used financial resources to get favorable legislation passed. However it was not always this way. The earliest farm lobbyist were “alienated farmers” whose main goals included more direct power in government for farmers and better financial rewards (Browne p. 65). Today the farm lobby includes a wide range of advocates with a wider range of policy goals. For instance, the American Farm Bureau Federation (Farm Bureau) tends to lobby for larger farms and is dominated by the Republican Party. On the other side is the National Farmers Union who typically represents the interests of small farmers and consists of mostly Democrats (Paarlberg p. 102). In 2011, the president of the American Farm Bureau Federation, Bob Stallman’s agenda was to “convince the public of the benefits of modern agriculture, such as plentiful food production and federal policies that make U.S. food less expensive” (Ferguson p. 1). Not only was he advocating America policy to support “modern food production” or in other words industrial farming, but he was doing so under the guise of cheap food. This is just one example of a powerful farm lobby representative looking out for their interest.

Generally agricultural lobbies can be grouped into two main categories: multi-issue and single issue organizations. Multi-issue groups include the Farm Bureau, National Cotton Council and the corporation Cargill among many others. While these groups tend to focus on economic issues like subsidies, price controls and trade, they take on what ever issues will benefit their interests including pesticide regulation or worker safety legislation (Browne p. 60). Groups like this tend to have an advantage since they are typically large and well known among members of Congress. On the other side, there are single-issue organizations, which as their name suggests,

focus on one aspect of the industry that best fits their interests. For instance, the groups that are only concerned with soil conservation or farm wages in a particular geographical region. These groups tend to have a lesser presence in Washington and often policymakers may “not want to give access to an organization they may not know” (Browne p. 61). Despite these two categories, there is a particular type of farm lobby that contains both single and multi issue groups that has the most dominating presence in Congress; the Producer Lobby. The Producer Lobby includes organizations like the National Farmers Union, National Council for Farmers Cooperatives and National Farmers Union. These groups tend to be primarily commodity groups and are considered the “real players” in terms of their power to influence legislation (Browne p. 91). Generally these groups employ full staffs of lobbyists who specialize in different subjects like price supports, nutrition, livestock and transportation (Browne p. 99).

Agribusiness is also influential in the lobbying process. As agricultural scholar William P. Browne said “Not all of the influential economic interests of agriculture are on the farm” (Browne 1982 p. 203). Agribusiness has become a major player in the farm lobby not only by their loud voice, but their deep pockets. Between 1990 and 2006, Agribusiness as a lobbying organization contributed more than \$381 million to election campaigns (Sustainable Table). Their issues tend to revolve around pricing, and loan rates, arguing for lower target prices and low loan rates (Browne 1982 p. 206). This is because the companies normally center on commodity items that they want to buy at the lowest price to cut down their overall processing costs. Even more recently, Agribusiness lobbyists from the technology sector have played an influential role over genetically modified technology legislation. In 1996, the chemical company Monsanto began to sell “Roundup Ready” seeds that were genetically modified in order to withstand pesticides. After much debate and several lawsuits, it was decided that Monsanto has

the right to patent their seeds. In 2001, the Supreme Court Case of J.E.M. Ag Supply v. Pioneer Hi-Bred International “upheld the patenting of plants” which was in question following loose language of previous cases. With this, the agricultural system was officially changed forever, giving the power to companies like Monsanto to patent seeds (Center for Food Safety p. 12). While this is not an exact example of lobbying, it shows that companies have power and influence when it comes to government decisions. This is combined with the fact that Monsanto and other companies have infiltrated the USDA, FDA and other powerful decision making bodies. For instance, in 2001, President Bush nominated former Monsanto employee Linda Fisher for a key role in the FDA (www.corporatewatch.org).

On the opposite side of the lobbying spectrum is the American Farmland Trust. This group founded in 1980 centers on farmland protection in America. Over the course of their establishment, they have helped to save more than 3 million acres of farmland by their three key programs; farmland protection, agricultural and the environment and growing local (www.farmland.org). This organization works at the national and local level to see that their interests are taken in consideration as legislation is made. For instance, they were influential in getting the Farmland Protection Policy Act included in the 1981 Farm bill. This act mandates that federal agencies must first determine the impact of federal projects before they can convert any farmland for other purposes (Farmland Information Center p. 2). Therefore the goal of the bill was to “minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural use” (p.1). While this bill has been powerful in saving some farmland, it does not protect against private conversion of farmland. However, the American Farmland Trust releases a seasonal magazine, which details the goals of the organization pertaining to current events. In the Summer/Fall edition of 2011, the organization

outlined their goals of the upcoming 2012 Farm Bill. As expected, land conservation, environmental stewardship and the encouragement of a more diversified agricultural system were among the top goals. However, before I delve into those issues, it is important to understand how farm bills affect modern industry.

To review, there are 15 titles in the 2008 farm bill, which currently governs the agricultural, and to some extent the food industry. Today it's main importance is to determine the amount and direction the flow of government money will go. Of the titles, many are reflective of past policies including Title I, Commodities which "provides income support to growers of select commodities" (American Farmland p. 16). This portion is especially targeted for budget cuts today. However in a breakdown of Farm Bill spending in 2010, the bulk of money (\$62.9 billion) went to Food Stamps with commodities following at \$6.4 billion (American Farmland p. 14). While both of these numbers are tremendous, the difference is quite significant. Food Stamps are an important aspect of farm bill spending which I purposely neglect to cover extensively due to its complex nature and growing distance from actual agriculture and farmers. The funding that does go directly to producing farm-grown products is distributed in several different ways as outlined in Chapter One. However it is important to differentiate between what are considered subsidies today from payments. Subsidies are general government payments that go to commodity crop producers. Payments come in the form of Counter-cyclical Payments and Direct Payments, the difference being Counter-cyclical Payments come only when the eligible crop falls below the target market price and Direct Payments happen regardless of price (American Farmland p. 15). These payments, whether they be subsidies or otherwise have certainly shaped the landscape of agriculture in America being that it consists almost entirely of the eligible commodities. This is one issue that some argue is a result of monoculture. Rather, I argue that

monoculture is a result of the policies that support certain crops and the side effects are negatively influencing farming, the environment and the farmer.

The Modern Industry

As stated the three main differences between the modern farm and traditional farms of the past are specialization, agribusiness and the development of new technologies. All three of these developments are certainly interrelated and in some cases interdependent to make the system function. Some argue that the interdependence within Agribusiness can lead to several agricultural giants dominating everything from the policies to the prices and beyond. Others argue that the combination of the three has destroyed the environment and if these practices are not condemned, the fate of food production in America is grim. Finally a third group is concerned with the role of the farmer in all of this. Issues cited for this cause are, declining participation in the profession, destruction of rural life and growing agricultural debt. Organizations like the American Farmland Trust advocate “No Farms, No Food”. In the same sense one could argue “No Farmers, No Food”. With all three of these positions in consideration, the current system is certainly worrisome to many, including myself.

The development of agribusiness is most often attributed to the development of fertilizers. Once it became humanly possible to produce mass quantities using the same amount of land, it makes sense that large farms would develop. Due to the capitalist nature of our system, it also makes sense that these farms would come to be dominated by corporations which would try in the best of their ability (and within legal limits) to consolidate, integrate and make the process of farming as streamline as a factory. While this is certainly plausible, there were other strictly political influences forcing the system into that of industrial agriculture. One such influence was Earl Butz, Nixon’s second Secretary of Agriculture. He entered the system when

food prices were reaching an all time high in 1973 and took action to change the system of how food is produced. His motto was “get big or get out” and encouraged farmers to plant “fencerow to fencerow” (Pollan p. 52). While his outspoken manner certainly got him a lot of attention, he silently “dismantled” much of the new deal legislation farm programs listed in Chapter One such as supporting prices through government loans, government grain purchases and land idling. He replaced these policies with a system of direct payments that still exists today. What this meant for the farmers is that it was more reasonable to sell their crops at any price since the government would just make up the difference. This is problematic because the government went from supporting the farmer and his farm, to supporting the particular commodity that they produce, forcing the farmer to produce as much as they possible could. This resulted not only in drastic changes for farmers, but changes in the dynamic of farming. Now that the government was supporting the amount that your produced, small farmers got swallowed up by the emerging agribusiness industry. Regardless of a single factor leading to the emergence of Agribusiness, the outcome was a changed landscape of farming, depending on a monoculture of a commodity and several inputs such as fertilizers to create mass quantities of food while at the same time decreasing the total number of farms. The following Agribusiness all have two things in common; they produce monocultures of commodities and they rely on tremendous amounts of agrochemicals which in some cases they also produce.

Agribusiness thrives of off industrial farming. This is because in many instances single corporations control the entire process from fertilizers to retail, which in industrial farming is much more time and money efficient. In other instances, large companies merge with other agricultural companies to control large percentages of the products market. For instance, in 1980, the majority of grain production in the United States was under the control of only three

corporations, two of which eventually merged into one, Cargill, Continental and Archer Daniels Midland. This small number of processors, allowed the companies to control the price, which the farmers had no choice but to sell at (Able et al p.27). When farmers harvest their crop, they have to sell it to processors, who then process the commodity into a product. If the processors control the price, then the farmer can either sell at the low price or let their crop rot. In this way, the large Agribusiness companies certainly have the upper hand against the farmers.

In more modern times, Cargill and Archer Daniels Midland act as monopolies over the grain industry. Not only do the two companies combined buy around 1/3rd of all the corn grown in America, but they provide fertilizers, operate grain elevators (where the processors buy the corn from farmers), feed livestock, and process and manufacture the byproducts of corn like corn syrup (Pollan p.63). In 1997, Cargill and Archer Daniels Midland were among four companies to control 76% of soybean crushing, 62% of Flour Milling and 74% of wet corn milling (Madgoff et al p. 65). As of 2006, Cargill was the largest privately held company in the world, which is no surprise considering the companies' above mentioned influence in American agriculture.

Another example of an Agribusiness giant is ConAgra. ConAgra literally controls the most important steps of producing poultry including, distributing fertilizers and other agrichemicals, partly involved in the seed industry, producing poultry feed, owning hatcheries, and even selling it's own products under different names such as Banquet TV dinners and Country Pride (Paarlberg p. 69). Because of this, ConAgra is the largest turkey producer in the nation and second largest broiler (chicken) producer. In 1997, ConAgra was among the top 4 producers of Flour Milling, Sheep, Pork, Beef, Chicken and Turkey (Magdoff et al p. 65).

Another huge poultry distributor, Tyson might not own every aspect of producing a chicken but they have other ways too keep control of their product. Tyson maintains control and efficiency

by contracting different existing chicken growers. Upon doing this, the grower is responsible to live up to the contract, even if that means they have to change their chicken coops, or methods. This can be very profitable for some chicken growers who are willing to produce to the company's standards and regulations (Weber p. 34). However, there is much controversy over the method that Tyson imposes which often ends in people leaving their contracts, or Tyson canceling the contract. In this way, the company still holds a lot of power over the system.

Sometimes the government will take notice of mergers between giant Agribusinesses. For instance in 2006 a request was made by two Senators to the Justice department to investigate a possible anti-trust violation. The potential culprits were Smithfield Foods and Premium Standard Farms, two producers of hogs that together would own 20% of America's pork and ham. The senators were especially upset by comments made by the corporation CEO's that: "we can butcher our own stuff when prices are high, and when prices are low we can buy from farmers" (Weeks p. 3). Because agribusinesses often own the production and processing levels, they are able to have such control as the above quote demonstrates. However, these cases are rare, and normally tough lobbying and political interests allow agribusiness to continue unregulated.

The last Agribusiness falls into a category of their own due to their development and distribution of genetically modified crops. A top scientist from Cargill, Inc. Austin Cargill once said, "The impact of genetically engineered foods... will make the industrial revolution pale by comparison" (Koch p. 2). Monsanto is the primarily controller of genetically modified technology in the world. In 1995, there was not one genetically modified crop planted for commercial use. Only 3 years later in 1998, there were 65 million acres of genetically modified seeds planted, of those 1/3 being United States soy and corn crops (Koch p. 2). The technology caught on so quickly that Monsanto grew to an influential power. They got this control by first

patenting all their technology, and secondly by forcing farmers into contracts with severe penalties for breaking the patents. Traditionally, farmers would save seeds each season, which leads to the development of certain favorable qualities in the seeds. With the emergence of Monsanto along with subsequent court cases, this traditional method is almost extinct. The Center for Food Safety goes so far to say that Monsanto's emergence has

“been nothing less than an assault on the foundations of farming practices and traditions that have endured for centuries in this country and millennia around the world, including one of the oldest, the right to save and replant crop seed” (Center for Food Safety p.4).

Monsanto has control over average farmers, who even after planting the patented seed can be fined or penalized. This has ruined many farmer's livelihoods. As an agribusiness, Monsanto is prepared to deal with a whole host of legal issues with their large repertoire of law firms; sometime hiring several firms for just one case (Center for Food Safety p. 25). It also helps to have the government on their side when it comes to questioning the safety of genetically modified technology. When the technology first came out, many countries were in an uproar over the safety of the new seeds. Since America was so quick to grow and even export genetically modified food, it was necessary for the government to make statements regarding the safety of the products. The U.S. government on several occasions has declared that gm products are in fact just as safe as other methods of seed hybridization(Koch p. 2). While I don't intend on proving them wrong, I wanted to illustrate the close relationship between the government and the particular agribusiness that has held an intellectual monopoly on genetically modified sees. In fact there have been a few cases of Monsanto or other GM proponents being given jobs for the USDA. For example pro- scientist Roger Beachy is an avid believer that GM is helping to make agriculture more sustainable since it is reducing the use of pesticides and herbicides. While he does admit that more can be done in terms of helping the environment (particularly greenhouse

gas emissions), he was recently given a head role on the USDA research agency (Borell p. 4 & 6). This tight relationship has helped to launch genetically modified seeds into 80% of corn and 90% of cotton and soybeans planted in America today (Borell p. 2). While the debate over genetically modified food is endless; whether it's moral, healthy, harmful or even legal, one thing for is for sure, Monsanto is quite the Agribusiness, and Agribusiness dominates American agriculture.

The emergence of Agribusiness brought along several parallel changes to the American agricultural system. One of which is monoculture or the specialization of crops grown in mass quantities. In the 1930's there were and estimated 7 million farms in America. By the mid 90's there were only 1.8 million producing a lot more food (Magdoff et al p. 13). While there are several causes for this phenomenon, the development to monoculture, encouraged by governmental policies and technological efficiencies are certainty at the forefront. The transition to monoculture has been attributed to mechanization, improvement of crop varieties, fertilizers and other agrichemicals (Magdoff et al p. 79). However, I argue that all of these changes can be categorized under the general umbrella term of Agribusiness.

As mentioned before, one huge difference between agriculture of the past and today is the specialization of crops on farms. Farms use to be relatively self-sustainable but now are sometimes literal food deserts, growing nothing that is edible in it's raw state (Pollan p. 39). Furthermore, Agribusiness corporations tend to concentrate processing facilities for individual products (mostly commodities) into certain areas of that country where it is most profitable (Aliteri p. 62). This leads to regional specialization as in the case of Iowa and corn. Policies that have been supporting commodities for decades have morphed entire farm into single commodity production zones. Today the two big crops that are supported by the government are corn and

soybeans. These crops are valuable in today's system since they can be heavily processed to form desirable food products among other things. For instance, corn and soybeans find their way into 2/3rd of all processed food in America with that percentage only growing. Many farmers, will either specialize in either corn or soybeans or rotated between the two (Pollan p. 35). This has serious negative impacts on the farmer's crops and the environment, particularly the soil.

The first negative result of monoculture is the vulnerability of the crops themselves. When a farmer plants one crop to the maximum capacity his fields can hold, that crop becomes extremely susceptible to pest infestations. In this way, the farmer has "concentrated resources for specialized crop-eating insects and have increased the area available for immigrant pests" (Altieri p. 62). This means that if a corn-eating bug infects a field planted with only corn, that entire crop has the potential to be lost. This is combined with the lack of "ecological defense mechanisms" that are needed to prevent attacks. For instance having only one species leaves out plants that are naturally unfavorable to pests, or plants that pests would eat rather than the crop which are found on more diverse farms (Magdoff et al p.81). Furthermore, to prevent such a thing means that tons of pesticides be sprayed each year, an investment by farmers of up to 4 billion dollars, which has it's own serious environmental impacts. However even with the pesticides, 20-30 percent of crops are still lost to insects. Monoculture maintains these percentages due to the lack of natural protective plants and the constant risk of losing an entire crop (Magdoff et al p. 81).

The second and perhaps most important result of monoculture is the fact that it depletes the soil quality of the land. In nature, plants grow and use nutrients (in particular nitrogen) and then when they die, their nutrients are returned back into the soil. In agriculture, each time a crop is planted, it takes a certain amount of the naturally occurring nitrogen in the soil. The old way of

replacing this necessary nitrogen was to plant a cover-crop every so often to make the soil fertile again. In the current system of monoculture, the same crop is planted over and over again, sometimes with little break in between. This does not give the land enough time to naturally produce nitrogen and other nutrients on its own. Therefore, when chemical fertilizers emerged on the agricultural scene, it allowed farmers to plant back-to-back crops of one commodity and replace the nutrients artificially (Madgoff et al p.79). Therefore, monoculture depletes soil quality and increases the need for more fertilizer which has a whole host of negative environmental costs, not to mention the financial cost to the farmers.

On the same token, massive scale farming as well as outside influences are also depleting the amount of soil that can be farmed. For instance Iowa used to be topped by a nearly four foot thick layer of extremely productive soil left from a glacier deposit and several decades of prairie grasses (Pollan p.33). Since the beginning of farming, that layer has been plowed or blown away to a level closer to two feet. Looking back on the early policy of the United States, law makers and lobbyists certainly were right in wanting to protect soil quality and quantity. Today this is still a big issue with groups like the American Farmland Trust rallied around it. Of the organizations six main goals for the upcoming farm bill, three of them revolved around protecting the actual farm land. One goal targets the current system directly by saying “Reduce the environmental impacts caused by the current subsidy system” (American Farmland p. 20). In this way, monoculture caused by the desire to grow commodity crops to receive subsidies relates back to the negative impact on the soil quality in America. The obvious preventative measure to losing an entire crop to insects or soil quality depletion would be to utilize modern agrichemicals to protect the monoculture. However, in the long run, monoculture increases the amount of agrichemicals needed to grow the single crop as well as has lasting environmental damages.

Jonathan Swift once said “Whoever could make two ears of corn or two blades of grass grow upon ground where only one grew before, would deserve better of mankind and do more essential service to this country than the whole race of politicians put together” (Paarlberg p. 7). This statement has been achieved many times over with modern technologies and agricultural chemicals. While technology has allowed for a dramatic increase in productivity, which resulted in a drop in the average amount spent on groceries, there are several environmental concerns that are certainly negating any cost saved in the supermarket. In 1966 American’s had to spend about 18% of their income on food. In 2008 that percentage was down to less than 10% (Walsh p. 3). A huge contributor to this decline is due to modern technologies. However upon looking beyond the surface, it is estimated that \$8 billion is spent each year to clean up the environment and take care of the social costs that come with environmental destruction (Altieri p. 81).

Industrial farming inherently consumes a lot of energy. In today’s society, it is well known that and extreme usage of fossil fuels is not only expensive but a pollutant. It is estimated that it takes around 50 gallons of fossil fuel to produce on acre of corn using the modern methods. This estimate includes steps at each point in the process starting with the making of the fertilizers and pesticides and ending with transportation to the processing plant or supermarket (Pollan p. 45). Multiply this estimate by the other big commodities and you get quite a bit of fossil fuel used to grow food. Even after the food is grown, the energy needed to process it is tremendous. According to the article “The Oil We Eat”, “All together the food-processing industry in the United States used about ten calories of fossil-fuel energy for every calorie of food energy it produces” (Manning p. 4). Again, this accounts for the growing, harvesting and processing of the agricultural product but not the transportation of the food from the factory to the supermarket where it can be purchased. Those who are concerned with a future lack of oil or

other fossil fuels should certainly be concerned with the future of agriculture at our current rate. Even if fossil fuels were not in any danger of running out, the pollution produced by the usage of fossil fuels has risen with the concentration of CO₂ in the atmosphere which is known to be climate altering (Roberts p. 225). Shifting of the climate in the future would pose serious implications on global agriculture. It is estimated that agriculture and the forest industry contribute 31% to the amount of greenhouse gasses emitted globally (Borrell p. 4). Thus, the unlimited usage of fossil fuels in agricultural production poses serious risks to the future of food. Take away the cheap prices and mass quantity of food that can be produced, and one would be astonished by the inefficiency and instability of this industrial agricultural system. The extreme usage of fossil fuels is just the beginning of the environmental problems associated with industrial farming today.

Within the category of fossil fuel usage is pesticides and fertilizers which sometimes even derive from fossil fuels, not to mention are used in the production of such agricultural chemicals. According to modern corn and soybean farmer, George Naylor “Growing corn is just riding tractors and spraying” (Pollan p. 40). By spraying he means the application upon application of agricultural chemicals like pesticides and fertilizers. Of the 4.7 billion pounds of pesticides used worldwide in 1995, 1.2 billion were used in the United States (Alteri p. 81). While this has helped in ensuring a more stable food supply (farmers are less likely to experience entire crop loss due to insect infestations), the chemicals are causing long term problems for the environment and those affected. Fertilizer run-off is one of the biggest and most common environmental problems today. The start of the problem is when farmers sometimes either purposely or accidentally apply more fertilizers than is needed. For instance Naylor admitted to sometimes spraying extra chemicals “just in case” as “a form of yield insurance” (Pollan p. 46).

While this might help Naylor or other farmers rest easy in the short term, the long term affects of excess agricultural chemical use are causing serious damage. This is because the fertilizers and pesticides that are not soaked up by the land, drain into the ground water, streams and eventually the Gulf of Mexico. One of the biggest unforeseen externalities produced by the system is a dead zone in the Gulf of Mexico some estimate is the size of New Jersey (Walsh p. 4). Because of the large concentration of synthetic nitrogen in chemical fertilizers, natural ecosystems like that of the Gulf are seriously disrupted by the increase of nitrogen in the water. This has led to the loss of billions of dollars of revenue for the fishing industry. While farmers are geographically removed from this environmental catastrophe, fertilizer runoff has also hit close to home. The second place where chemical runoff can go is into the water table, affecting the drinking water in agricultural regions. In Des Moines, Iowa, there are “baby blue” alerts which means that there is a large concentration of chemicals in the drinking water to a point which is particularly unsafe for children to consume (Pollan p. 47). The last place where fertilizer runoff can go is in to the air by the process of evaporation. In this case, the nitrogen gets pulled into the air and returns in the form of acid rain, which is destructive to the natural and artificial environment since it can damage buildings and cars as well as the forests and wildlife. These environmental damages caused by industrial farming are often overlooked in the political realm. This is due to the strength of the agricultural lobby as mentioned before in combination with the power of Agribusiness to silence negativity toward to status quo of industrial agriculture.

In 2009, a bill was passed in Congress known as the Cap and Trade Agreement. This legislation mandated limits and imposed punishments on the industrial sector for producing green house gas emissions. While this bill was a celebrated among supporters, it failed to include the agricultural industry that produces plenty of environmental damage (Paarberg p. 122). In fact

Concentrated Animal Feeding Operations (CAFO's) or factory farms produce a substantial amount of pollution. In 2003 it was estimated that the "air pollution from decomposing manure, dust and gasses produce by the animals can contain up to 160 separate chemical substances" of which enter the air and contribute to increased greenhouse gas concentration (Weeks p. 10). This certainly sounds like it would be pertinent to the Cap and Trade agreement, however powerful figures in the farm lobby and Agribusiness have prevented the application to agricultural industry. Another example of legislation came from then Vice President Al Gore. He was concerned with chemical runoff from sugar farms polluting the Florida Everglades, a sensitive ecosystem to begin with. Thus he introduced a tax on the sugar plantations that would help to clean up the damage and hopefully reduce future damage. Before this could be passed, President Bill Clinton received a phone call from a powerful "Florida sugar baron" which prompted him to put the bill on hold (Paarlberg p. 122). This was done and the bill never saw the light of day.

Farmers Troubles

Despite much legislation protecting and helping farms, farmer's are still struggling, many more than ever. This is because while the aid and support is plentiful, it is often misguided causing an ever-growing income and success gap among the agricultural industry. Many of the issues that today's farmers are experiencing are either directly or indirectly related to the problems with modern industry above. Of those issues, the overwhelming majority of those farmers experiencing the issues come from small or medium sized farms. This is because our system has built in several advantages to being a large farm. The biggest is arguable the sheer fact that they produce more. The current commodity payment system rewards farmers who produce the most. In the 1990's the top 6% of farms were receiving 30% of the total government support payments for commodity programs (Magdoff et al p. 14). This statistic becomes even

more powerful when combined with the fact that in 1995, “roughly 90% of all farm commodities produced in the United States were by farmers with at least 1,800 acres of land and a net worth of at least \$600,000 (Paarlberg p. 98). To put this all together: big farms produce commodities and are then rewarded by a disproportionate amount of government support. Because big farms produce large volumes, they get the best prices for commodities, pay less for inputs since they buy in bulk and even pay less interest on borrowed money. With their profits, they can turn around and hire labor so that they can continue to make the farm more efficient and profitable (Magdoff et al p. 13). This not only perpetuates the system of monoculture, but also hurts small farmers.

All farmers share the common concern of commodity prices, one sold to the processor. Farmer’s livelihoods are dictated by the price you get for your crop combined with the debt you have accrued. In farming, there is an economic term described as the price treadmill, which describes the nature of the industry and why some farmers (especially small) struggle. In most industries, low prices of a good will trigger a decrease in production. For whatever reason, farming is an exception to this general rule. A farmer’s biggest cost is the upfront purchase of their land. Therefore, when the price per bushel of a farmer’s main commodity drops, the farmers will compensate for this cost by “spreading their fixed cost” or planting more bushels per acre. In order to do so, they must buy more technology, seeds, and machines. While this maintains income over the short term by balancing out the low commodity cost, it leaves farmers in serious debt in the long run. This creates a vicious cycle where more and more is needed to be produced in order to keep afloat (Levins & Cochrane p. 550). Larger farms are more equipped to handle a drop in price since they often own the technologies and can produce enough to make up the difference. To make matters worse, by 2000, “40% of the processing of all agricultural

commodities in the Midwest” were controlled by the 4 largest processing firms (Magdoff et al p. 65). For a Midwest farmer, this means that the processors can largely control the price. Sometimes, when the price of a crop drops, farmers can store their crops and hopefully wait for a better price. However, small or poor farmers can not afford to do this and so they sell at the low price (Mantel p. 14). Therefore small and medium farms can’t compete with large-scale industrial farms who are selling more commodities at sometimes an even better price.

As alluded to before, technologies, agrichemicals, seeds and other farm inputs can be a costly investment. To survive as a commodity producer today, farmers must buy and implement new technologies as well as expand their overall acreage (Magdoff et al p.12). This can really push farmers deep in debt to cover not only the upfront costs of land and seeds, but to keep up with the latest technologies and methods. This system is obviously sensitive to energy prices, since the price of oil and other fossil fuels affects many aspects of the modern farm; from fertilizer costs to shipping costs (Mantel p. 14). Any raise in price of an input will tend to hit the smaller farmers harder since as mentioned above, they need to work harder to compensate for their lack of size. Aside from energy costs, farmers are contently struggling to keep up with technologies. For instance, George Naylor’s neighbor Billy purchases “all the latest toys: the twelve-row planter, Roundup Ready seed, the new John Deere combine” yet he is in serious debt. This is not unlike many farmers whose debt accrues so fast that they are unable to support their family or even themselves with just a farming income. Billy for instance drives a tractor-trailer doing “long-distance hauling work to keep the farm afloat” (Pollan p. 55).

Billy is not the only farmer who needs multiple incomes to support his farm. In 1991, over 2/3rds of farming households received more income from nonfarm jobs than from their farm production (Mantel p. 11). This statistic is certainly disturbing considering farming use to

be a self-sustainable profession, supporting entire families. One theory of dwindling farm incomes is that farm people are willing to offer their labor for a low return and once they are committed to agriculture they have few good options” (Paarlberg p. 60). While this might be the case, I think it is more likely that farm incomes are decreasing as the inputs such as those listed above are increasing in price and necessity. George Naylor and his wife live off of Mrs. Naylor’s income and his annual subsidy payment from the government despite having a very productive farm (Pollan p. 34). Back in 1960, the largest 38% of farms were making 80% of their income from the farm. Today that number is even lower.

Another notable phenomena which is contributing to the decreasing income has to do with the “food dollar”. Farmers share of the food dollar is the amount a farmer receives per dollar of food they produce after paying input costs (Magdoff p. 11). This number has decreased from 40% in 1910 to only 10% in 1990. In fact, sometime farmers are selling corn at a lower price than it even took them to produce. For instance, in 2005, Iowa State University estimated that it typically costs a farmer \$2.50 a bushel to produce corn yet that same year, the grain elevators (middlemen between processors and farmers) were paying only \$1.45 (Pollan p. 55). This can help to explain the lack of substantial income, and the debt problems that farmers are facing. This is an industry with the only way to make ends meet is to produce more than before. Hypothetically, when everyone is producing more, the laws of economics say that the price will go down. Corporate control aside, this is the case for the modern commodity farmer, and the detriment to many small and medium sized farms.

While the government seems to be at the hands of these problems, there has been attempts to change the way subsidies are handed out in hopes to even out the playing (or literally planting) field. In 2008 President Bush proposed a law where subsidies would not be given out to

farms that made more than \$200,000 in profit in a year. However, the Senate and House of Representatives blocked this bill, no doubt under pressure from the powerful farm lobby. After that the cap stood at \$750,000 annual earnings (Paarlberg p. 98). Recently in this time of economic trouble, many people have questioned the legitimacy behind subsidies. In fact it is predicted that direct payments (which are regardless of market price or yield is “on the chopping block in the next farm bill” (American Farmland p. 15). During the formation of the 2010 budget proposal, President Obama proposed a similar cap to his predecessor. Obama wanted to eliminate subsidies to individual farmers making more than \$250,000 and to “phase out subsidies to farmers with gross annual retail sales of \$500,000 or more” (Lewis p. 1). Both proposals were shot down being called “stupid” by the House Agricultural Committee. As this demonstrates, it is very difficult to change agricultural policy due to the strength of the farm lobby and agricultural organizations. However, as the third chapter will detail, there are many anti-industrial agriculture organizations “cropping” up. These groups are not only lobbying for their cause, but implementing new farming methods, going back to the traditional methods, or simply advocating an alternative lifestyle and model to what is currently advocated by governmental policies.

There are also some struggles that are not directly related to government plaguing the farming profession today. The first is the average age of farmers. In general, farmers are old, and those young people getting involved lack the funds necessary to maintain or start up a farm. Specifically, farmers that are 55 years old or older “own nearly 416 million acres of farm and ranch land”. Only 5% of farmers are under 35 years old with the largest proportion coming from the 65 and older bracket (American Farmland p. 18). This is particularly disturbing given the ever-increasing world population which lends to the question; who will produce American food in the future?

While the lack of farmers is a valid concern, other are more worried about the decline in farmland. While agriculture is a big player in politics, there are obviously other interests that compete for expansion and control of America's land. According to The American Farmland Trust, over the past 25 years, 23 million acres of farmland fell victim to "sprawling development" (American Farmland p. 17). This means that private and state owned housing or industrial developers are buying up the land that was once for farming. It is interesting to note the types of farmland that is in the "path of development"; 91% of fruits, tree nuts and berries and 78% of vegetables and melons grown in the US are produced in "counties subject to urban influences" (American Farmland p. 21). Therefore these crops are particularly sensitive to the "sprawling development" that has been a trend in America. To help combat the loss of farmland, the American Farmland Trust helped to influence the Farmland Protection Policy Act. This act included first in the 1981 farm bill and later updated mandates that federal agencies must first determine the impact of their project on farmland and the environment before that can convert farmland. The intent of the Act is to "minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural use" (Farmland Information Center p. 1).

Resist and Perish?

Farming has changed dramatically from the early days of agricultural legislation. While the farm bills and policies have evolved to meet the new needs of the country, some policies stand strong and are backed by influential lobbyists including the "Producer Lobby". At the same time, new technology and new methods of farming have changed how the system works. As Earl Butz said "adapt or die, resist and perish" (Koch p. 11). In other words, if you don't expand your farm to fit the industrial model, you will probably not succeed. This has become the trend in

America. No longer do “family farm’s” provide the nation’s food. Rather, industrial farms dominated by agribusiness, plant monoculture’s of commodity crops using the most advanced chemicals and machinery. In many cases, even the seeds are high tech. The question is, in this high-tech, so-called “efficient” system, why are there so many issues. Both the environment and small to medium sized farms are at risk of destruction. In many ways, the destruction is already happening with a “dead zone” in the Mississippi River Gulf and farmers falling into debt on the price treadmill. Commodity payments as they exist today help the big farms get richer at the expense of other farmers. Some organizations and politicians have attempted change, but normally in vain to the power of the agricultural lobbyists and committees. House of Representative member from Wisconsin, Ron Kind said of the Agricultural Committee’s “They are going to try to protect the status quo and protect the programs as they exist” (Lewis p. 2). With little change happening from above, it seems as though bottom up change is necessary. While people are beginning to organize against industrial agriculture, the cheap prices at the grocery store continue to be reinforcement of this method of favoring larger farms and agribusiness. The next chapter will delve into the anti-industrial agricultural culture and determine the paths those movements are taking as well as a prediction as to the future of American agriculture.

THREE

Alternative Agriculture and the Future of Government Policy

Agribusiness' takeover of the mainstream of modern food production, has spawned an anti-industrial counter-culture in recent years. These counter-movements began as social movements, concerned with animal welfare, the environment or workers rights. However, they have evolved from marginal actors and begun to impact the every day consciousness of average food consumers. These movements were born as responses to two main issues created by agribusiness, and the specialization and new agricultural technologies it has created. The first organizing issue is monoculture, which leads to environmental damages (see Chapter Two). The second is the emergence of industrial-sized farming operations, which led to the deterioration of small farms and creation financial hardships for producers. Rallying around these two central points, the counter-culture proposes an alternative to industrial agriculture.

While several individual groups have gained attention over the years, the anti-industrial counter-culture can be roughly divided into a few sometimes-interchangeable terms. The first is a blanket term that in some ways covers all of the goals and issues of those that seek alternative farming methods. That term is sustainable, which has been a buzzword particularly in recent years. The second term, which came before sustainability but contains a similar goal set, is "organic". However, organic can be a tricky term since in recent years, its anti-chemical rhetoric has found it's way into industrial sized farms. The organic industry is one of the fastest growing industries in the nation, which lends itself to corporate expansion. This can be problematic for those "organic" purists who believe that the initial goals of the movement are lost to industrial sized organic farms. The last groups includes a variety of smaller movements that incorporate

ideals of sustainability to combat the current competitive trends in the market as well as environmental and social issues associated with industrial agricultural. These movements include the Slow Food Movement, Land Conservation Movements and Michael Pollan's "Resolarizing the farm".

This chapter outlines the counter-culture; it's goals and methods and will support my ideal that sustainability is what we should strive for. I will argue that the goals of sustainability implemented at a gradual pace can revolutionize the agricultural industry, shaping it to a more environmentally, farmer and consumer friendly system. I believe that sustainability, combined with consumer awareness and concern and government acknowledgement of the issues of industrial farming can work together to change American agricultural for the better. This chapter discusses three main aspects of the counterculture; sustainability, the organic industry and other movements that often combine the two. First I will define what I mean by alternative agriculture and it's strong and weak subsets. Next come sustainability, where it came from, how it works and it's relationship with the government organization the USDA. Then I get more specific with the term and ideals behind being "organic", how the government defines it and how it has subsequently evolved into "industrial organic" in some cases. The next section includes smaller movements that combined the already overlapping ideals of sustainability and organic to form a new wave of more specific alternative agriculture movements. Finally I mention the draw-backs of sustainability broadly and suggest ways of implementation that would allow the transition from conventional to sustainable to happen smoothly. In doing so I will show that while there are many different alternative-agriculture movement, it comes down to two min counter-cultures. The first consists of strong farming movements that counter industrial farming from both the social and environmental perspectives. The other type includes groups that are simply seeking to

profit on the popularity of alternative agriculture. In the end it is those movements that address the environmental and social wrongs of industrial agriculture that are truly sustainable and should be backed by government policy.

Strong and Weak Alternative Agriculture

According to Jeffrey Follett, all food production operates in “a food network”. These food networks include all the aspects of production including the farm, transportation, marketing, procession, etc. Some networks are more “alternative than others”(Follett p. 32). In this situation and for the purpose of this paper, alternative is broadly defined as the rejection of the “globally industrial, environmentally degrading conventional food system” (Follett p. 33). Notice in this definition, industrial agriculture is referred to as the conventional system. This is a slight departure from how it’s been defined to thus far in the paper as industrial as compared to traditional. However this chapter demonstrates the evolution of farms from traditional (without the use of chemicals and monoculture) to conventional (or industrial) to a growing anti-industrial sector noted in this paper as alternative agriculture.

In many ways, alternative agriculture is a departure from conventional and a transition back to traditional. For example, many alternative farms reject modern chemicals, genetically modified seed technology and even selling in large grocery stores. However, there are some cases, that might appear to be alternative yet are merely “market-based systems similar to the conventional food system disguised under a new name” (Follett p. 32). Despite this, there are a few general traits of alternative systems, which hit on those main issues of Agribusiness, specialization and agrichemicals with a greater focus on the producer and consumer as well as the economic conditions. For instance, one goal is to redistribute value through the network in a

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different way than the conventional commodity system (Follett p. 33). Generally this means that the farmer is selling either directly to the consumer or markets which redistributes a greater amount of wealth back to the farmer. Another goal is to re-instill trust between the farmers and consumer. This touches on the idea that the farmers should be held to the standard of what he produces. While alternative networks range in ideology and influence, Follett groups alternative food options in two main categories, strong or weak.

Essentially all of the alternative movements mentioned in this chapter will fall into one of Follett's two main categories. Weak alternative food networks are categorized as the corporate version meaning that they are generally corporately controlled and revolve around making profits (Follett p. 1). These weak networks relish the opportunity that consumers are concerned with the environment so they market their products as being produced in an environmentally friendly way. In doing so they neglect the other social issues like animal welfare, rural communities, and labor standards. Opposite weak movements are, strong food networks that are characterized as being local. This is because they not only address the environment, but the other issues above and are normally contained within a smaller, more local context (Follett p. 1). Based on research of the two types of movements, the local version is more adept to create social change since it "challenges the foundations of the convention food system" working from a bottom up approach that is more concerned with the issues as opposed to profits (Follett p. 1). This is important to keep in mind when looking at the organic movement. The organic movement was very much a bottom up process, starting at the local level and eventually reaching the national level as nationwide mandates were sought. Furthermore, strong movements tend to be more sustainable in terms of less outside farm inputs like chemical fertilizer, expensive machinery and extreme fossil fuel usage. In order to understand the evolution of alternative agriculture, first as a counter to

industrial farming and then stemming off to movements of various strengths, it's important to define the term sustainability and the ideals behind it.

Sustainability: An Umbrella Term

The introduction of the term sustainability into the American lingo came around the same time as negative feelings toward Agribusiness and industrial agriculture emerged on the public and political scene. The term sustainability first became part of the farm lingo after the 1990 farm bill. This bill attempted to tackle “organic” but in the process introduced a new and perhaps more powerful term to the alternative agricultural scene. The United States Department of Agriculture defined sustainable agriculture as “an intergraded system of plant and animal production practices having a site-specific application that will over time, satisfy human food and fiber needs” (USDA National Agricultural Library). While many industries have picked up the term ranging from clothing to household cleaning products, the term has become a staple when talking about alternative agriculture.

At face value sustainability is often referred to when talking about the method of how the food is produced. However, it also plays a role in the bigger picture of the strong food network, influencing the entire process. According to Lubell, Hillis and Hoffman, sustainability is “designed to foster integration amount economic, environmental and social goals” in agricultural research and practice (Lubell, Hillis and Hoffman p. 1). Similar to the USDA definition, the key term is “integration”. The idea behind integration is an important factor in separating sustainable farming from conventional. First, the term integration means that each of the three main categories of goals (environmental, economic and social) will be tied together in a way reflective of the strong food network described above. For instance, there might be more financial

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incentive for the farmer to grow in a more environmentally sound way, and then sell at a farmers market, giving the farmer more financial independence. This differs from a conventional farm where the main concern may lay with the economic factor and the environment and social justice are ignored. As Chapter Two describes, this is often the case in industrial agriculture where profits are high at the expense of the environment and the well being of rural towns. By integrating these factors, the goal shifts to one that is environmentally friendly while at the same time as farm input costs decrease and “economic returns” increase (Lubell, Hillis and Hoffman p. 1). This would ideally produce a better situation for the farmer and environment then would conventional farming. For instance, smaller more sustainable hog farms are known to “proportionally spend almost 50% more at local business” than large industrial counterparts. This is because they rely on the local community for their inputs rather than get them shipped from far away or produce their own as many industrial and vertically intergraded farms do (Sustainable Table).

Now that sustainability has been established as a good practice, it’s important to grasp what it means. According to the USDA, the goals of sustainable farming include, “enhancing environmental quality and the natural resource base upon which the economy depends”, using nonrenewable resources more efficiently, “enhancing the quality of life for farmers and society as a whole, and finally to “sustain economic viability of farm operations” (USDA National Agricultural Library). By this definition you would think that everyone would want to become more sustainable. This is because it is vague and idealistic. From a government perspective, defining sustainability was almost an easy way out of getting too specific with policy. The term is fairly vague as well as the goals. However there is an organization called Sustainable

Agriculture Research and Education (SARE) that is sponsored by the USDA that provides more concrete examples of how farmers can transition to more sustainable farming practices.

According to the government sponsored SARE, there are three main pillars of sustainability that fall in line with the other definitions described thus far. The pillars include, “Profit over the long term, stewardship of our nation’s land and water and quality of life for farmers, ranchers and their communities” (SARE p. 2). What makes this organization different from other sources defining sustainability is that it works to help farmers implement and achieve a sustainable reality for their farms. The organization offers grants to farmers, researcher and other people interested in sustainable agriculture to fund projects that align with the organizations goals (SARE p. 12). The organization provides several things for a farmer to do that will help them become more sustainable including: marketing, soil conservation, pesticide reduction, and farm diversity and on farm energy conservation and even energy production. In terms of marketing, SARE encourages farmers to diversify their marketing techniques. This means that if a farmer only sells to big commodity outlets and supermarkets, they should try to sell more product directly to consumers by farmers markets or roadside stands. This touches mainly on the economic goals however keeping a product local also cuts down on environmental damage since it often drastically reduces transportation pollution. Next is soil conservation, a practice that’s been lost in recent years with chemical fertilizers yet dates back to the beginning of farm bills. SARE believes that methods of soil conservation including contour tillage, reduced tillage and no-till plowing can bring many positive attributes to a farm including less soil loss due to wind and water erosion and better carbon retention in the soil. One study done by the organization found that by using a cover crop between corn plantings can lead to a \$14 per acre increase in corn yields (SARE p.4). This can have a huge impact on farmers focusing on corn as

well as benefit the surrounding environment. In Gettysburg, South Dakota, Dan Forgery is an example of such success. Around 15 years ago, he decided to switch his 8,500-acre farm over to a more sustainable plowing method of no-till. This means that he does not excessively plow between planting so that the soil stays put and further develops its fertility. Since going to a no-till method, his corn and sunflower production has increased by 30% (SARE p. 4). On top of that, he is able to use less and less fertilizer each year, which saves money. In this way, his profits rise while his outside inputs; particularly chemical fertilizer costs are decreased. Soil conservation has become such an important topic that entire movements and organizations are devoted to just that, as will be discussed later in more detail.

Another topic of sustainability is diversifying agriculture. This directly goes against conventional agriculture, which relies on monocultures of one or two commodity crops. As the previous chapter described, monoculture has become the primary way of farming for industrial sized farms in recent years. A prime example is that in 1866, 1,186 varieties of fruit and vegetables were produced in California when today only 350 commercial crops are produced (Sustainable Table). The loss of bio-diversity in agriculture is a result of a decrease in seed varieties and an outcome of policy supporting monoculture. However, sustainability seeks to combat trends like this. There are many benefits to diversifying crops but one especially popular result of polyculture is that it can reduce the amount of pesticides needed. For instance, some farmers are using the agro forestry techniques where trees are planted among the crops to “provide wildlife habitat and increase beneficial insect populations” as well as maintain the soil quality and water absorption rate (SARE p. 3). Other farmers have experimented with crops that act as a “poisoned fence” to pests. Jude Boucher is a researcher who worked to stop maggots from eating sweet bell pepper crops. Usually insect infestations like this are controlled by large

pesticide applications by the farmer indicating substantial input costs (SARE p. 11). Through his research, he found that when he planted hot cherry peppers surrounding the sweet pepper plants, the maggots didn't eat the sweet peppers. He tested this method on several farms planting various crops and found that on average, the total earnings went up \$11,000 per grower mainly due to the decreased use of pesticides (SARE p. 11). In this way, just by planting two crops (hot peppers and sweet peppers), farmers could save money and help the environment all while becoming more sustainable. Furthermore, biodiversity can help to protect species that rely on natural pollinators like bugs and birds. Of the world's most prevalent 57 crops, 39 of them require pollination (Sustainable Table). If grown in a monoculture, these crops either need to be artificially pollinated or they will cease to exist. Therefore, a monoculture that encourages different species even including pests like birds and bugs, are especially beneficial for those crops that require pollination.

Finally, SARE encourages on farm energy production and conservation. Energy consumption is a major factor leading to environmental damage and high cost of maintaining a farm. However, a 22 year study determined that organic farms, which are sustainable, use 30% less energy than conventional farms (Sustainable Table). This statistic could be for a variety of reasons but SARE's goal is to increase that percentage. The organization recommends investment in solar power and windmills to farmers who are looking to become more sustainable for any of the three main reasons. This way they are cutting costs by producing their own fuel (SARE p. 3). Again this hits on the environmental purpose of sustainability but at the same time provides financial incentive to the grower who will cut long-term costs. Don Bustos and his New Mexican farm are a real life example of how this practice can be used to become more sustainable. Mr. Bustos is in charge of 3.5 acres of land as well as 10,000 square feet of green

houses full of diversified crops. After receiving organic he sought a SARE grant to “explore innovation in solar heating networks for this greenhouses” in order to “provide cheap, year-round on farm energy production” (SARE p. 5). This has allowed him to financially prosper year round in a business that can be very seasonal. For instance with this new technology, he can net \$16,000 from his 4,000 organic asparagus plants in only 5 weeks (SARE p. 5). This is a feat that many farmers and no-farmers alike can appreciate. In general, regional and local food systems that practice sustainability produce at least 17% less CO₂ than industrial farms (Sustainable Table). These examples are all success stories based on a few key sustainable changes.

In the big picture, just knowing how sustainability works is important to understanding the other movements, particularly Organic which utilizes many of the same principles. To be sustainable is to be better to the environment, the farmer and the community. The average community only produces 5% of the food it’s citizens consumer (Roberts p. 308). This is an example of a non-sustainable trend, meaning that it can not go on forever given the limited amount of natural resources we have today. However, simply aspiring to be sustainable is a great starting point because the term does not denote any specific regulations in terms of pesticides and other agrichemicals the industry has come to rely on. Unlike being organic, as the next section will talk about, being sustainable has not yet been clearly defined by the government. This means that farmers that grow in a sustainable way do not need to follow specific guidelines to advertise as such. Therefore, farmers can do what they can to use less natural resources and connect at a local level with the community with the hope that in return they will maintain steady business and survive economically. Sustainable practices and the organizations that condone them, tend to encourage gradual change and education to produce beneficial results.

Organic and it's Evolution

Many people believe that the current American organic movement has its roots in People's Park California as a response to the growing industrial agricultural industry. People's Park was founded in 1969 during a time of political rebellion and the questioning of the status quo. The founders called themselves "agrarian reformers" (Pollan p. 141). The mission was to take a small plot of land previously owned by the University of California and create a cooperative society that grew "uncontaminated food". At the time, the US was fully involved in using a large range of agrichemicals, which were beginning to have health concerns. However the movement can be traced even earlier when Sir Albert Howard wrote *An Agricultural Testament* upon observing "organic" farms in India in the 1930's (Koch p. 11). This book served to be a model for many early American organic farmers and still serves to be an important piece of literature to the movement. While People's Park was popular amount the hippie community, it really didn't take off until Agribusiness became dominant and the attached issues became evident to a large portion of people. So in this way, the modern organic movement is a "backlash" to Agribusiness (Koch p. 11). Ironically enough, Agribusiness has caught on to the consumer organic craze, discrediting the original movement and labeling it under the government protected USDA organic label. However, more on that later.

Today, the organic industry is one of the fastest growing industries in the country. This is because consumer demand is at an all time high and "organic" is making its way into a wide range of food choices from crackers to ice cream to TV dinners. In 2005, 4.0 million acres of farm-land was devoted to organic food production (Sustainable Table). It has come a long way from the hippie communes where it began. In fact, in many ways today's organic industry is a great departure from the founding concepts, maintaining few of the original principles. At its

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start, the organic movement revolved around pesticide free farming. There it grew from selling organic at farm stands to small local health food stores to now entire supermarkets like Whole Food's. (Koch p. 12). According to Paul Roberts, the founding goal of the organic movement is to:

“Replace the under-lying system that required the synthetic inputs with a system that does not- a system modeled on nature's own method for circulation energy and nutrients, interrupting pest populations and maintaining internal balance” (Roberts p. 249).

This goal is especially important in differentiating the change that the organic industry underwent upon becoming more “industrial”. Once organics became in high demand and organic farms expanded to industrial size, many of the synthetic inputs returned becoming problematic to organic fundamentalists. The other main goal (which is especially lost to the industrial organic industry today) was to encourage community based production and consumption. So far this seems to fall nicely aligned with sustainability. However a big difference is while sustainability seeks to reduce chemical use and take gradual steps into becoming more environmentally friendly, organic founders sought to produce using zero chemicals. In fact, some may argue that intensive American chemical usage was the driving factor behind the founding of the organic movement. At the time, farmers and even average citizens were beginning to be concerned with what was used to grow their food. Some farmers lost family and friends to the cancers that were associated with the early agricultural chemicals while others were witnessing the “physical decline of their farms and soil” (Roberts p. 251). In this way, non-hippie farmers began to convert to an organic way of farming and the message spread quickly. A new generation of conventional converts and organic startups began to realize the many benefits of organic farming.

There are a few main advantages to organic farming when done in a non-industrial way. The environmental advantages associated with organic farming were certainly the initial spark that caused people to farm under such a movement. However, farmers soon found that there were even economic advantages to environmentally friendly agriculture. The first obvious advantage is a huge cut in input costs both to the farmer and the environment by decreased or zero pesticide usage. Conventional farmers use an estimated 800 million pounds of agrichemicals each year (Koch p. 8). These chemicals can lead to a variety of environmental damage, not to mention a serious cost to the farmers. According to the Department of Economics at the University of Essex, industrial farming causes \$34.7 billion of damages to the environment each year (Sustainable Table). However, with organic farming, plant-derived pesticides are used if at all. These more environmentally friendly plant based pesticides have a shorter lifespan in the environment have a miniscule affect on the environment (Koch p. 9). To sweeten the deal, farmers end up purchasing less chemical pesticides and fertilizers, saving a lot of money in the long term.

Another environmental advantage to organic farming is that the soil is maintained in a more sustainable way. This is normally the result of proper methods of soil maintenance due to the lack of chemical fertilizers. Organic soil is sustainable soil in that it retains more water, is more dense and fertile and is not subject to water or wind based erosion (Koch p. 9). Some farmers are reluctant to desert the agrichemicals they have come to rely on. However, organic farmers who farm without chemicals, “routinely achieve 80-100 percent of conventional yields in grain” (Pollan 2008 p.67). Sometimes organic farmers even exceed conventional methods since in drought years the organic soil retains more moisture.

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A non-environmental, but still substantial benefit to organic farming is the culture of local eating that can become inspired. This goes along with the ideals of sustainability in that it is environmentally and socially beneficial to eat food that has been grown and produced locally. While going completely local with agriculture is not realistic in all places of the country, small steps are being taken to produce a large impact. Some environmentalists and consumers are even forming groups devoted to this principle of organic eating. For instance, the Kansas City Food Circle whose goal is to reconnect local consumers to local family farms has the motto of “eat locally, seasonally and know your farmers personally” (Koch p. 19). Going along with this, organic food networks (that are not corporate or industrial) tend to build a strong relationship between the consumer and farmers. This is because there is a sense of transparency and trust. The producer is not able to hide behind a big name label and the food must “fulfill social and political needs because consumers can go to the farms to see for themselves” (Follett p. 39-40). For instance, if a consumer was curious if a farm was really holding to the organic ideals of non-chemical farming, they could typically take a drive to the farm if it’s local and get a first hand view. That is certainly something that is lacking in the current food industry where often food is produced behind closed gates or hundreds of miles away. Therefore, consumers who choose organic, and in particular local organic have an option to choose a “food future” (Follett p. 42). This means that there is value in consumer input and opinion since the farmer is more accountable for their product. However, as the popularity of organic products rose, some aspects of the industry were sacrificed to meet the demand as well as respond to some of the downsides of early organic agriculture.

Between 1990 and 1997 the sale of organic food quadrupled (Koch p. 3). Consumers began to demand organic products at a higher rate than were being produced according to the

original and small-scale methods. Thus began the transition from organic as a social movement and environmental solution to corporate organic, changing (and tainting according to some) the industry forever. This transition is perfectly displayed by Gene Kahn's Cascadian Farms. Gene Kahn was one of the "hippies" that took to organic farming in the 1960's. Soon after he founded Cascadian Farms where he began to process his food to increase the value by either making jam or freezing blueberries (Pollan p. 144). As consumers began to demand more and more organic products, so did his farm expand with the demand. However, this is the tricky thing about organic farming. At the beginning of the movement, organic farms had trouble keeping up with the demand. They produced inconsistent products which were concerning to consumers used to the pristine produce the conventional methods produced. For instance some critics of organic shared the feeling that "organic foods meant narghly apples and wormy turnips attractive only to live-off the land hippies and urban extremists" (Roberts p. 251). Corporations took note of this, and swooped in to transform the organic industry into a consistent product producing, moneymaking system modeled after conventional agriculture.

According to the goals, the farm should not use chemicals and it should encourage local and community based production and consumption. While the growing organic farms could maintain not using chemicals (since they could charge a high premium for their products), it was nearly impossible to keep things local. By 1990, Kahn's farm was corporately controlled and by 1999 his farm had consolidated with an organic tomato producer and became Small Planet Foods (Pollan p. 154). To many observers, Kahn "sold out". However Kahn defended himself by saying, "we tried hard to build a cooperative community and a local food system but at the end of the day it wasn't successful" (Pollan p. 153). Kahn and his corporate partners became a weak food network. Their true concern was with consumer demand and profits but it was OK since

they were being good to the environment. Some industrial sized “organic” farmers will defend their status with the fact that in the end it is about feeding consumers with a product is grown with fewer chemicals. In reality, if a product is “organic”, grown in California, processed somewhere and consumed in New York, it is hard to ignore the gallons of fossil fuels used in the process. Marion Nestle, an organic proponent once said:

“ When you choose organics, you are voting with your fork for a planet with fewer pesticides, richer soil, and cleaner water supplies-all better in the long run. When you choose locally grown produce, you are voting conservation of fuel resources and the economic viability of local communities along with freshness and better taste” (Follett p. 38).

This quote really sums up how the organic industry has changed. At first, being organic meant that you would have both a product that was produced with fewer pesticides and grown locally. Today, many organic products are simply grown with few pesticides and the other social aspects are ignored.

The organic industry today has branched off into two main categories going along with Follett’s strong and weak alternative agricultural movements; industrial organic, and local or simple organic with industrial organic being a weak alternative movement and the latter strong. According to Michael Pollan, organic has transitioned from a movement to a business (Pollan p. 138). As seen above, Gene Kahn is a perfect example of that transition. However there are several other American farms that fit into that same story. One such story comes from Earthbound Farms, which now grows about 80% of organic lettuce sold in America (Pollan p. 138). Drew and Myra Goodman left their urban life for the simplicity of growing organic raspberries and baby greens and founded Earthbound Farms. After selling their products locally for a while, they began to wash and bag mixes of the baby greens. This became an in demand products and in 1986, they began to work their business around the successful product starting

with designing a gentle wash system that made cleaning the greens manageable at a large scale (Pollan p. 163). Soon, inline with Kahn's story, the demand out grew their farm and the Goodman's entered into partnerships that expanded their land. Despite now owning 25,000 acres, they held true to their rejection of pesticides and chemical fertilizers partly due to their organic principle and partly due to the market for lettuce grown organically. Today, each type of lettuce is grown in its own monoculture surrounded by flowers that act as insecticides. The leaves are picked by a custom built harvester, washed, packaged and shipped all around the country. It was calculated by a Cornell Ecologist that once the lettuce is grown, packaged and shipped, it has consumed a total of 4,600 calories of fossil fuel energy while only containing about 80 calories of food energy (Pollan p. 167). Some critics may look at this statistic and think that purchasing Earthbound Farms lettuce is not very sustainable. However, the response is that it's technically organic and in the end better to the environment than conventional methods.

Other industrial organic producers include Horizon farms and Greenways Organic. Horizon controls half of the market for organic milk. The cows spend their time in a "grassless fenced enclosure" and are milked three times a day. While this does not seem so different from conventional milk production, the company can argue that they only use antibiotics if the cow is actually sick; the cows have access to the outdoors and are fed organic feed. Therefore the milk is labeled organic and shipped around the country. Greenways Organic is an interesting example since it is not solely an organic farm. Rather, the supplier of Small Planet Foods is a 2 thousand acre organic produce operation "tucked into a 24 thousand acre conventional farm" (Pollan p. 159). The same produce is grown side by side only using two different methods. The organic side is fertilized by compost made by the ton and sprayed with approved organic agents" while the conventional side uses chemical fertilizer and pesticides (Pollan p. 159). While the organic

produce is technically produced in a more environmentally friendly method, it's benefits are negated by the large scale conventional operation surrounding it. When you have farming like this, it calls into question the motives of Greenways Organic, which seems to be all about making a profit on a popular consumer ideology of choosing organic.

It has been said about the new wave of organic producers, mainly made up of industrial organic that the “companies do not produce organically because it fulfills the philosophy of the alternative movement, but instead because the organic niche provides large premiums and profits” (Follett p. 41). This is obvious in examples like Greenways Organic. Not only are independent organic farms growing to an industrial scale, but also big name conventional processors are buying them out. To name a few, H.J. Heinz Co. bought Earth's best Organic baby food company and General Mills bought Cascadian Farms (Pollan p. 140 & Koch p. 18). Gene Kahn was quoted as saying “ everything morphs into the way the world is” (Follett p. 41). The transition of local and small scale organic to industrial and corporate organic is a perfect example of this defeatist view. To reiterate, under the industrial model of organic farming focuses on profits at the cost of the social goals. When organic food is shipped across the country, and corporately controlled, the relationship between the farmers and consumer is lost.

While it is obvious by the information above that the industry has changed in size and driven by consumer demand, there are other changes that have threatened the original ideals behind organic farming. One large threat came with the introduction of genetically modified seeds into the agricultural market in the US. This was a particularly large concern of the organic movement in 1997 for several reasons. First, they were concerned that consumers would be not able to locate the non-genetically modified foods on packages. This would discredit the total products since if it were labeled organic but was know to have genetically modified products, the

consumer would not know how much or how little was included (Koch p. 3). Secondly, there was the environmental concern that generically modified crops would contaminate organic crops. As was described in Chapter Two, this is an easy process of cross-pollination, which can be irreversible if gone undetected. The next concern is that the introduction of gm seeds would allow plants that have been modified to be herbicide resistant to crossbreed with weedy relatives creating “monster weeds”. This would obviously pose a serious problem for organic farmers who do not use any weed killer and would leave them defenseless against the potential mutant variety (Koch p. 3). In fact a study by a Danish group discovered that this very cross-contamination was happening among canola plants (Koch p. 10). The final worry was that by creating new genetically modified seeds, it would reduce the biodiversity of the worlds seed supply. This was a valid concern since most gm seeds are what are referred to as “terminator” seeds or those that produce plants without “viable” seeds (Koch p. 4). This would be bad because it could create a market in which old varieties of seeds were replaced with the new non-fertile gm seeds. Ultimately the debate boils down to: Should products that were grown with gm seeds be considered organic? This is something that only the National Government could step in to decide.

As the organic industry grew, so to did the need for regulation. This was because at the time, to be certified organic was different for every state, which created an inconsistent product. Therefore many consumers and producers agreed that it would be better to have a national standard for organic foods. In 1990, the government passed the Organic Food’s Production Act, that established national standards for production and for the labeling of “organic” (Koch p. 12). Under this act, the National Organic Program was established within the USDA Agricultural Marketing service to oversee and enforce the standards that were necessary before a product

could be certified organic. Upon the release of this bill, there was much controversy over its content. In fact the organic industry had 66 areas that they called “objectable” (Koch p. 13). One of those areas revolved around genetically modified crops. The dilemma was that if the government included gm in the definition of organic, then there would be an issue of trade since many European countries rejected the technology. This would leave the US unable to export organic products to some of their biggest markets. On the other hand, if they outwardly went against gm in the bill, then it would look like to the outside world that the American government saw the technology as a safety concern also affecting trade (Koch p. 13). On a side note, this dilemma really demonstrates the departure from the initial goal of keeping consumption local since here the government is mainly concerned with overseas trade. In the end gm crops were not included in the definition of organic, however the bill was set up in such a way that the government now has the power to define organic.

In 2005 the 1990 bill was amended and was called the Organic Food’s Production Act or OFPA. The goals of this bill were to first “establish uniform national standards for the marketing of organic products” which means that in order to have the USDA stamp of organic approval, the product must hold to the standard. The next goal dealt with consumers, again ensuring uniform standards in quality. The final was “to facilitate interstate commerce in products that are organic” (US Environmental Protection Agency). This goal directly contradicts the second founding principle in organic, which said that organic meant local production and consumption in order to reduce fossil fuel consumption and to keep a large portion of the food dollar with the farmers. Already one can see how the government reinforced the departure from the original organic movement to one that better suits the industrial agricultural system already supported by the government. In accordance with these three main goals, the OFPA set several national standards

including the following three. First it was determined that in order to be organic, the product must be produced without the used of synthetic chemicals. Secondly the product cannot be produced on land that has previously has synthetic chemicals on for at least three years. Finally, the product must " be produced and handled in compliance with an organic plan agreed to by the producer and handler of such products and a certifying agent" (US Environmental Protection Agency). In other words, a person who grows carrots in their backyard without chemicals cannot just one day market them as certified organic. They must have a preexisting plan that lays out how they produce organically. In fact one stipulation of the bill is that the certified organic grower must keep records of organic production separate from other records and have them handy at all times for viewing by organic officials. These records must be detailed with the exact products that were applied to the field, by whom and when including the addressed of those that applies the substances. Other stipulations include the usage of appropriate physical machinery and facilities to ensure no mixing of organic and non-organic materials and that the farmers most be certified each year with the Secretary of Agriculture. In order to get certified, a farmer or rancher must submit an organic plan as discussed above showing that their farm is consistent with all the regulations including, to name a few, a livestock plan, soil fertility plan and how and if manure will be applied to the fields (US Environmental Protection Agency).

The organization created to oversee all these regulations has it's own set of standards as updated in 2011. The National Standards on Organic Agricultural Production and Handling otherwise know as the USDA Agricultural Marketing Services issued the NOP Rule in 2000. This organization outlined the standards for each particular subset of agricultural production including crops, livestock and handling. Two notable standards for crops are that they must use organic seeds, meaning that the product can't be genetically modified and farmers cannot use

sewage sludge as fertilizer. For livestock to be considered organic, it must be 100% organically fed, have access to outdoors year round and can only be given antibiotics if the animal is actual sick. While these might seem like obvious practices to an average person, the conventional agricultural system is so skewed that these standards are certainly in the minority. Finally, there is one notable exemption to organic labeling. Farms that gross sale under \$5,000 do not have to be certified to label their product as organic. However, they are not awarded the privilege of getting to apply the USDA organic seal of approval on their product.

Ironically, there is another serious exemption that cannot be overlooked. The OFPA allows that processed foods can be organic if they include at least 50% organic products. So once the farmer goes through all the trouble of organizing the paperwork, maintaining the facilities and other hoops to jump through to be labeled organic, a processed product only needs to be 50% organic to get that same label. This is seen as problematic to many however; it has certainly been to the advantage of corporations seeking to make money in the organic industry. In fact many consumers and farmers are questioning the viability of food that's labeled organic since it fails to satisfy several underlying problems with the industrial agricultural system. One concern is that being organic does not mean that livestock ever actually spends time outside; eats a natural diet and is truly free from contamination (Follett p. 35). For instance, one type of organic chicken is grown in a hen house similar to its conventional counterpart. However, due to the organic rules, there must be a small door leading out to the fresh air, which in this case, is only open for the last two weeks of the chicken's life pre-slaughter (Pollan p. 140). Therefore, while the rule is followed in a literally sense, cost-cutting and efficiency tactics have come into play such that organic is able to be produced industrially.

Another concern is that strictly defined organic does not protect rural livelihoods. Rural communities often suffer the brunt of agricultural price changes. One of the main goals of sustainability and original organic farming is to establish a relationship between the community and farmer that helps to ease the blow to rural communities in times of agricultural depression. Simply being labeled organic does not guarantee any such relationship will be established. Finally, being labeled organic does not ensure that consumers have all sufficient information to determine their “food future” (Follett p. 35). Choosing groceries can be a confusing task these days, and with the development of industrial scale organic agriculture, consumers know little about the producer of their food and where it comes from. This is a problem that several local agricultural movements are trying to address.

With this in mind, the following are two examples of farms with different statuses in relation to organic certification. The first is currently certified as an organic farm and the second was certified organic but then dropped its certification. Both do business at a small and local scale compared to the industrial organic farms mentioned above. No Label Organic started out as a large garden in which the gardener Jack Sneuce noticed that the plants could thrive without pesticides. He came to this conclusion after neglecting to apply the chemicals for a few weeks. Soon after, he expanded his garden to a farm and became certified organic in 1996. Rather than selling out or expanding to an industrial level, Sneuce decided to combat large processors by founding cooperatives which distributed local products including his own directly to consumers (Follett p. 37). He adopted a mindset of local sales and utilized the CSA system which will be discussed more in detail as an alternative agricultural movement on it’s own. In the end 90% of Jack’s sales “travel through direct sales” and through the CSA’s established by the cooperatives

(Follett p. 37). Jack's farm is an example of organic done right in that it is a strong food network that incorporates both the environmental and social goals of organic agriculture.

The second example is Potomac Vegetable Farms. This farm started off by growing beans, tomatoes, squash and corn and jumped on the certified organic band wagon in 1990 when the farm became certified organic by the State of Virginia. Later in 2003, it became certified by the government's standards, which didn't last too long. According to the farm, they decided not to continue with national certification since the process became too "arduous" with the paperwork increasing by twelve times in some cases (Follett p. 36). Despite rejecting the organic status, the farm followed a similar route as No Label Organics in that it has successfully utilized CSA's for over eight years. Potomac Vegetable Farm's took a "beyond organics" approach by declaring themselves "Ecoganic". This meant that they practiced a "sustainable agricultural process that maintains soil fertility by retaining soil organic matter and microbes" (Follett p. 36). Again that term sustainable has cropped up in an example that seems to be stronger than simply organic. The next section takes this idea of beyond organic to introduce several new movements that have emerged both as a result of industrial agriculture and more recently industrial organic agriculture.

Alternative Subsets: Slow Food, CSA's and Land Conservation

There are many other movements that supplement and even act in response to the organic movement. All of the alternative agriculture movements that are mentioned in this section would be considered sustainable in a variety of ways. For instance, the land conservation movement seeks to protect farmland from urban development with an emphasis on the livelihoods of the farmers and the environmental impacts. Other movements like the emergence of Community

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Supported Agriculture or CSA's often go hand in hand with organic agriculture and touched on the local aspect of sustainability. In the end, I argue that each of these movements is taking agriculture in a positive and more sustainable direction. While they might not be as powerful as the organic movement in terms of broad recognition and support, these smaller alternative agriculture ventures are useful in their own ways.

The first alternative agriculture movement is called the Slow Food Movement and is not as well known within the average American household as say the organic movement. The Slow Food Movement contrary to its title is not about consuming your dinner at a slower pace. Rather it is focused on preserving local and traditional cooking traditions, farming without pollution and maintaining certain breeds and varieties of seeds and livestock that would otherwise be faded out for a more generic variety. In fact, 96% of the "commercial vegetable varieties that were available in the year 1903" are now extinct (Sustainable Table). While we may think that there still are plenty of types of vegetables to go around, this is seen as a tragic injustice to members of the Slow Food Movement. The Slow Food Movement got its start out of a protest of the first McDonald's in Rome, Italy. From there it has spread to more than 140 countries (Glazer p. 1). In the US this movement is mainly concerned with saving some 63% of indigenous crop varieties that are disappearing from the continent (Glazer p. 2). This phenomenon of seed extinction is largely a result of monoculture, genetically modified seeds and the policies that support it. One influential figure of the movement is Dr. Vandana Shiva, an Indian woman with a passion for saving seeds. She is the founder of Navdanya, a sub-movement within the Slow Food Movement that is a "movement to occupy the seed" (Shiva 2012). Through this organization, 66 community seed banks have been set up worldwide saving countless varieties of seeds. The main enemy for an organization like this is Monsanto who Shiva claims wrote the World Trade Organization on

Intellectual Property, forcing countries to patent the seeds and destroying traditional seed breeding methods. Shiva and other Slow Food supporters have collectively filed several lawsuits against Monsanto and have been successful at saving polycultures of seed types.

Another goal of the movement in America is to transition from subsidies that favor monoculture to ones that benefit a wider range of crops (Glazer p. 5). One large distinguishing factor of the Slow Food Movement that sets it apart from conventional agriculture is its sustainable farming practices without pesticides and fertilizers. Also going along with a sustainable plan, the Slow Food Movement encourages the agriculture industry to be “good, clean and fair” with fair meaning that the producers get compensated fairly (Glazer p. 4). However, while these goals sound like it could fit in with the local version of organic, most slow food farmers considered themselves “beyond organic”. Many of the food types grown and produced according to the Slow Food Movement would be qualified as organic even though they do not “carry an official government organic label” (Glazer p. 6). While some farmers may do this out laziness or in spite of the industrial organics industry, other simply claim that the focus is on creating more biodiversity, which in the end does not matter if it’s “organically” or not.

While the Slow Foods Movement seeks to maintain old varieties of seeds, it has gained much popularity in the livestock industry. For instance, Kansas farmer, Frank Reese made it big when word got out about his “heritage turkey” business. Heritage turkeys, as they are referred to today, are a breed of turkeys that were popular in the 19th century. According to Slow Food chefs and consumers, these turkeys have a more complex taste and texture than the mass-produced factory bird that is so popular today (Glazer p. 1). As a result, Reese’s sales went from about 100 heritage turkeys a year when the breeding of them was nearly extinct, to over 8,000 in 2006. Other endangered plant and animal varieties in the US include, Ozzette potatoes, wild rice

“cultivated by Native Americans in Washington State and endangered oysters that are found off the coast of New Jersey (Glazer p. 3). This movement is largely driven by the emerging “foodie” culture in the US where people will spend a high premium to eat something rare yet sustainable. Despite this, the movement still holds to its environmental and social goals and qualifies as a sustainable alternative agriculture practice.

The next alternative agriculture movement focuses more on the social and community based goals of sustainability, while still finding broad support from self-proclaimed foodies and environmentalists. Community Supported Agriculture or CSA is a term used for a new system of food network distribution, which is becoming a popular alternative to industrial agriculture and big name grocery stores. The history of this movement or emergence of this practice began in Japan in the mid 1960’s by a group of women who were fed up with their choices of “pesticide-laden foods”. They decided to make a special arrangement with local farmers to be provided “natural organic local food for their tables” and in return would pay the farmer directly (Schnell p. 2). This practice spread first to Europe and then to the United States with the first CSA popping up in Massachusetts in 1985. Today there are more than 1,700 CSA’s with more than 340,000 people as members in the US(Schnell p. 3). The driving force behind this movement is to encourage local production and consuming by following “anticorporate and antiglobalization” ideals (Schnell p. 4). Generally, CSA’s are either certified organic, or practice organic farming. By combining these environmentally sound practices with direct sales between farmers and consumers, CSA’s rank high in my sustainability rating. One person involved has said “ We’re feeding people, we’re doing it in an environmentally responsible way and we’re creating ties to a local food economy” (Schnell p. 6).

CSA's range in size but are generally small in comparison to industrial farms. The average CSA farm is 18 acres with normally 3 of those acres devoted strictly to the CSA. (Schnell p.6). In the "classic" CSA model, shareholders pay up front for a share of what ever is grown which is normally delivered each week to the shareholder. In other words the shareholder assumes some of the initial risk of the farmers since if there is a bad season, they can't get their money back. Sometime the weekly share will be plentiful, and sometimes it might be meager but that is the risk of such a venture. Occasionally a CSA will have a core group of directors or shareholders who have substantial influence on the on goings of the farm. However, other CSA's are at the full discretion of the farmer (Schnell p. 5). While the involvement of consumers ranges, all shareholders can benefit from fresh produce that is typically grown in an organic or environmentally friendly fashion. Farmers on the other hand, have a wide range of benefits upon forming a CSA. CSA's provide farmers with a predetermined income due to the "share risk and season long commitment" (Schnell p. 6). In some cases this allows younger farmers to enter the field of farming who wouldn't have the funds and security otherwise. This is a big bonus to agriculture in general since the average age of farmers is so high in this country. Another obvious benefit of CSA's is the local bonds it forms not only between individuals and farmers but whole communities. One CSA's motto is to "connect to your food, community, the land and good music" as it hosts weekly folk music concerts on the farm (Schnell p. 6). While hosting a music gig on the farm does little for the environment, it spreads a positive community oriented message as well as raises awareness to the advantages of smaller scale agriculture. The one main downside of CSA's is their lack of prevalence in lower-income areas. Most shareholders are progressive, urban, and come from middle to upper class economic groups (Schnell p. 7). While there is a CSA in all 50 states, they are mainly concentrated in New England and the North East,

found in areas with mostly small farms and focus primarily on vegetable production. Of course there are always exceptions to this but in general CSA's cater to a limited portion of the population. Despite this factor, CSA's are a sustainable way to farm and distribute agricultural products. At first glance, CSA's are a great way to get organic produce but then it becomes "a broader understanding of the web of connections among local economies, food, community and the environment" (Schnell p. 7).

The next movement has a slightly different focus from the Slow Food Movement and CSA's. This is because the Land Conservation Movement and its subsets focuses less on the food that is produced but on the methods and the land it's produced on. This movement was mentioned in Chapter Two, being led mainly by the American Farmland Trust. The obvious goal of this program is to maintain productive farmland and to discourage the overtake of farmland by unnecessary urban development. One program supported by the movement is called PACE or Purchase of Agricultural Consecration Easement. PACE programs are normally funded at the state level and act as payments that essentially conserve farmland. For instance, the California Farmland Conservation program has protected 24,000 acres between 1997 and 2005 while the Maryland Agricultural Land Preservation Foundation combined with Rural Legacy has saved 281,495 acres since 1980 (Farmland Information Center p. 2). A study by the American Farmland Trust and the University of California looked at how these easements work by interviewing participants and farmers in 15 states. The main goal was to see if the easements were helpful in sustaining agricultural economies and whether they worked to "positively affect urban land use patterns (Soklow p. 10). In other words, they wanted to see if PACE programs were really helping to protect farmland from urban development, which could help farmers. Most people interviewed said that there was a "positive impact in maintaining ownership of

working farms, quality agriculture soils and other aspects of local agriculture”(Soklow p. 10). Along the same lines, a land planner in Maryland saw the PACE programs as a way to reinforce the stability of the farming community such that family farms didn’t feel like “they’re going to be forced to sell out the family farm” since there will be enough “mass of farming to keep it going” (Soklow p. 11). In this way, they were found to accomplish the social aspect of sustainability in that PACE programs helped small and family farms. Secondly, when asked if the program has been affective in preserving land, only 3 of 161 interviewees answered no (Soklow p. 56). Therefore, while PACE programs lack in stating any true environmental goals besides keeping more farmland as opposed to urban development, they help in encouraging economic sustainability for smaller farms and rural communities.

Another goal of the Land Conservation movement is to encourage soil conservation. This particular goal has encouraged several subsets and alternative methods including the “no till” farming method. Most conventional farmers will run tractors over the land to till the soil between plantings. This method has a tendency to deplete the soil of natural matter including nitrogen, which makes the soil dry and susceptible to wind, and rain erosion. In conventional farming, this loss of fertility would be replaced with tons of chemical fertilizers each year. However, farmers seeking to maintain good soil have turned to alternative farming techniques, which often work even better than chemical fertilizers. For instance, Fred Flemming is a Washington farmer who switched to the no-till method for economic reasons. Rather than plowing or “tilling” the soil, Flemming does not clean up after his crop. He leaves all the left over plant matter after harvesting, and then plant his seeds right back in the soil (Roberts p. 277). This method keeps the soil moist and fertile creating high yields without the use of fertilizer (Roberts p. 278). In this way, the no-till method is certainly sustainable in terms of the environment. Upon achieving

success with his no-till method, Flemming went on to join Shepherds grain, a co-op that sells grain directly to small stores, eliminating the middleman and costly commodity traders. While his product is not organic, it is grown without any chemical fertilizers so he can still charge a premium for his crops. Therefore, Flemming is an example of a medium sized farmer who found his economic success through sustainable methods.

The last alternative food movement is truly “beyond organic”. This movement is perhaps the smallest and least well known however it incorporates ideals of soil conservation, environmental stewardship and social and economic rights for smaller farmers. Michael Pollan is a critically acclaimed food journalist with a strong plan he calls “resolarizing the farm”. This movement is based off of the concept that we need to return to more traditional methods of farming where the sun was the basis for all production, polycultures thrive and there is no need for fertilizers and pesticides (Pollan 2008 p. 56). Pollan argues for a sun based soil fertility as opposed to fossil fuel based fertility in which crop rotations and proper soil care would maintain equal if not better soil quality. The ultimate goal is to build the infrastructure for a regional food economy such that it “can support diversified farming and by shortening the food chain, reduce the amount of fossil fuel in the American diet” (Pollan 2008 p. 71). This goal is highly reflective of the environmental concerns associated with industrial farming. For instance, Pollan mentions in his essay “Farmer in Chief”, a recent bill proposed by Senator Tom Harkin called the Conservation Stewardship Program. This program came with the 2008 farm bill and allows for each state to have some flexibility in determining it’s own resource demands. For instance, Arizona focuses on air quality, animals, energy and water quantity. Programs like this can also include voluntary conservation programs as mentioned before that give financial assistance to “eligible producers to conserve and enhance natural resources (USDA 2011). Along with his

support of bills of this nature, Pollan argues for municipal composting to be applied to fields as well as a redirecting of government payments from supporting monoculture to reflect the number of different crops farmers grow (Pollan 2008 p. 56). Finally, he sees a need for more highly skilled small farmers. By skilled he does not mean that they have the latest technologies but rather they understand the land and the nature of agriculture in such a way that their farms are productive enough to feed the whole nation while at the same time adhering to environmental and social concerns. In the end Pollan would like to see a system where “sunlight nourished the grasses and grains, the plants nourish the animals, the animals then nourish the soil which in turn nourished the next seasons grasses and grains” (Pollan 2008 p. 67).

While Pollan’s idea has been around for a few years, it has not produced a large scale following. However, Pollan’s rhetoric has found it’s way onto many farms across the country that are adopting a “beyond organic” approach only not in the name of any particular movement. The first example is Smith Meadows Meat, which has been a family farm for eight generations. In 1989, the family decided to make a change from heavy chemical usage to a more “organic” type of farming out of a concern for the environment and future of the farm. Since then, the farm has been a chemical-free operation, calling themselves “beyond organic” (Follett p. 35). At the beginning the farm continued to run business as they did when they grew conventionally, selling to supermarkets and other large food markets. However, they soon realized that it was a struggle to keep up with the agri-giants who are able to sell large quantities at a cheaper price. Now Smith Meadows Meat sells to farmers markets, health food stores and restaurants as well as owing their own farm stand (Follett p. 35). Their commitment to stay small, family owned, local and chemical free is right inline with Pollan’s movement. However, the best example of a farm utilizing the “resolarizing the farm” methods is Polyface Farm.

Polyface Farm owner, Joel Salatin is a self-proclaimed “grass-farmer” meaning the grass is what sustains his entire farming operation. His 100 acre farm is “patch worked” into 450 acres of forest, following a principle of sustainability as described above. By utilizing “pastoral ideals” of centering his farm on grass, he raises chicken, beef, turkeys, eggs, rabbits, pigs, tomatoes, sweet corn and berries (Pollan p. 125). He does all of this in a chemical-free way by utilizing traditional and natural methods of fertilization. The process occurs as follows; the pasture is grazed by the cattle and then laying hens take the field, eating bugs and dropping “a few thousand pounds of nitrogen to the pasture”. Lastly, the hay is cut to save for the winter and this process is repeated rotating the patch of land every few weeks (Pollan p. 126). Not only does Salatin practice sustainability on the farm, but also he holds a strong local commitment. In fact, when Pollan asked to be shipped a Polyface steak, he was turned down with a large lecture about sustainability. His response was “just because we can ship organic lettuce from the Salinas Valley or organic cut flowers from Peru, doesn’t mean we should do it, not it we’re really serious about energy and seasonality and bioregionalism” (Pollan p. 133). He also referred to his farm as “beyond organic” and openly criticized the industrial industry calling it “decidedly Eastern, connected holistic product, and selling it though a decidedly Western, disconnected, reductionist Wall Streetified marketing system” (Pollan p. 131). His small to medium sized farm is exactly what Pollan advocates in his sun based, chemical free alternative agriculture movement.

Factors Contributing to Successful Sustainability

According the pro-sustainable organization Sustainable Table, 85% of American’s trust smaller scale family farms to produce safe, and nutritious food (Sustainable Table). If this is the case, why then do people continue to buy food produced on industrial farms and shipped half way across the country? This is because along with of government backing, there are a few

factors necessary to implement complete sustainability, meaning smaller family farms, that have yet to be implemented at a large scale. In an ideal world, industrial farms would break down to smaller, more sustainable farms with only positive consequences. However, since that is not the case, there are some challenges to completely transferring the nation's farms to sustainable whether that means they are organic or otherwise. The most glaring problem that opponents to sustainability cite is production levels. It is certainly the case that industrial agriculture produces massive amounts of food in a "cost-effective" manner. I quote "cost-effective" since in reality there are many unaccounted for costs in agricultural production as have been discussed in Chapter Two; particularly environmental and social costs. Despite this, it is a false statement to say that alternative agriculture, done in the most sustainable way, will produce the same amount of food as the current conventional and industrial system. In fact, in order to completely rid of synthetic nitrogen in the process of producing meat, it has been estimate that America would have to replace half of our current grain acreages with "nitrogen-fixing legume crops". This would end up lowering per capita food supply by 25%, leave no food for export, and reduce American meat consumption by 1/8th of the current rate (Roberts p. 209). While some extremists are willing to make these dietary changes, even those who consider themselves alternative supporters fail to see past the numbers in this case.

Another large roadblock to wide spread sustainable practices comes from a lack of genuine government enthusiasm. In 2010, the government organization SARE co-sponsored the Sustainable Agriculture Symposium where farmers, USDA members, scientists, academics and others discussed and struggled to define sustainability. This shows a policy change in the fact that sustainability is even being discussed, however I believe the conference fell short of creating a big enough impact to see real change. The main goal of the symposium was to agree upon

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ways to accelerate sustainable programs with sustainable being a watered down version of what I have described thus far in the chapter (SARE). Melissa Ho, a member of the Congressional Research Service was the only government representative to speak at the event, which on a side note denotes an overall lack of interest and judged importance by the governing body of the US. Her half hour talk covered a range of topics but with the general message that the USDA, and other agricultural-related segments of government have a new commitment to sustainability (SARE). In her PowerPoint she quoted R. Beachy, the director of the National Institute of Food and Agriculture (NIFA):

“Our commitment to nurture and support crop and animal production will not waver. Our other longstanding commitment is to make absolutely sure that this production system is sustainable, both in terms of being able to keep supplying America’s and the world’s food, feed, fuel and fiber, and in nurturing and safeguarding the natural resources that make this production possible... Both high crop yields and safe and sustainable practices are critically important, and both deserve USDA’s continued full support” (SARE).

This quote is supposed to demonstrate a changing attitude toward sustainability, putting it on the same level of importance as production. However in reality, this is a slow change with sustainable practice support taking up the smallest amount of the USDA budget. Other so-called sustainability advocates like the EPA produce similar rhetoric without providing the money and legislation to back it up. According to the EPA’s agriculture center “Sustainable development is less of a program and more of a new multi-faced approach to managing our environmental, economic and social resources for the long term” (EPA). This is a problem since the system could actually use a program such that more “green” grants and rewards could go to the farmers who are making the sustainable switch. So while there is certainly talk of making sustainability a priority, there are few actual proposed legislations changes, especially in the form of redirected money from conventional agriculture to alternative agriculture.

In response to the lack of government action towards directing new programs away from harmful agriculture and towards more sustainable practices, there have been a few proposals. The first is a sustainability tax, that would be on certain items that have higher external costs. For instance, meat, dairy and eggs would have a higher tax placed on them since they require the most resources to be produced (Roberts p. 291). I believe that something like this is taking government intervention in the wrong direction. Rather than put a tax on the “bad” things, which could have drastic consequences for the dairy and meat industry, we should be providing more support to the good things. I believe in taking a government approach like Michael Pollan advocates in his essay “Farmer in Chief”. Rather than primarily supporting farms growing commodity crops, farm bills should expand on it’s “specialty crops” section, encouraging a more diversified farm landscape (Pollan 2008 p. 66). Furthermore, land conservation methods like planting cover-crops should be rewarded while heavy pesticide and chemical use should be discouraged. Taking into consideration the current rate of change and the influence of the agriculture lobby, this would be a long project. Pollan estimates 50 years, but I would guess even longer. However, as I will reiterate, any change toward sustainability is good change and it all starts with educating the farmers and public.

SARE is just one such program educating farmers on sustainable practices. There are several other programs in practice today. For example, there are organizations that allow grape growers in California to interact with outreach professionals who then teach them methods and practices to help them become more sustainable (Lubell, Hillis and Hoffman p. 1). Organizations like this are crucial to see a more sustainable American agricultural system. Without them, farmers would have no one to turn to for support, education and even in some cases cash grants to convert to more sustainable practices. Along these same lines, farmers have less incentive to

learn about sustainable practices, which have “high economic costs” (Lubell, Hillis and Hoffman p. 10). For many already struggling farmers, changing to a more sustainable system of farming could be too much of a burden. According to Iowa Farmer Varel Bailey, the key to convincing farmers to transition to sustainable farming is to put profits and farming economics first. He argues that while profits to the farmer is among the sustainability goals, it is not truly a priority, and until then farmers can’t make the change (SARE). This statement may seem counterintuitive to the previous idea that farmers who seek only profits will ever become a strong alternative farm. The question here is then, is a weak alternative farm better than a normal conventional farm? I argue yes, since making the switch to chemical free, smaller scale farming will only bring positive consequences and if the farmer is making profits at the same time, this is a good thing. That being said, farms following a strong alternative agriculture path are even better. However, the switch would be impossible with out the work of outreach groups and research that educate and ease the risk of transition.

While farmer concern for the environment is one major factor resulting in the adoption of sustainable practices, sometimes other factors like size play an important roll. Sustainability is more easily implemented in small to medium sized farms. According to the notable environmentalist and agricultural scholar, Wendel Berry, “Sustainable farming can’t happen unless farmers know and love their land” (Roberts p. 280). This makes sense considering the differences between large scale and very small-scale farming. A farmer who has 5 acres is much more likely to know their land, understand the soil quality in different areas, where the bugs tend to infest and where the water runs off the quickest. These little quarks help a farmer to implement sustainable practices such as pest control and no-till. However, to be productive at the scale needed in the US, it would be impossible given American’s current lifestyles to adopt

millions of 5-acre sustainable farms. In this way, researchers have determined that farms in the medium sized range (50-500 acres) are the most suitable for producing at substantial levels while maintaining sustainable practices (Roberts p. 280). This way, farms that choose to downsize, even if it's by a few hundred acres, would have a better change in implementing sustainable practices.

These glaring problems of converting to sustainability are solved with two words: gradual change. Rather than some complete government overhaul of the agricultural system, I advocate a slower more natural pace of change by implementing sustainable practices from a bottom-up approach. While government intervention is certainly necessary in some instances, I think it will not be until the farms see the positive results of sustainable farming for themselves, that change will occur. For this reason, I believe that education, downsizing and government support are the three largest contributors to implementing sustainable practices in such a way that massive food shortages are prevented.

An End to Industrial Agriculture in Sight?

Agriculture in America is changing and the government can't keep up. Whether it's organic, sustainable, grown using a no-till method or a combination of the three, farmers and consumers are rebelling against the industrial model of farming. People are no longer content to continue farming according to the status quo and are openly protesting against the wrongs of industrial farming. However, recently, this movement has taken a turn, branching out to new interests that don't have the true intentions of the alternative agricultural movement at heart. Corporations are buying out smaller farms and grass roots organic operations are selling out for profit and expansion. Some alternative agricultural movements are weakening with their neglect of the social issues and focus on profits. This has especially been the case with the organic industry since now organic farms are producing large scale, monocultures of products, shipping them across the nations and selling them at a premium. This is not a positive direction for alternative agriculture however, on the spectrum from conventional/industrial to fully sustainable and local, industrial organic is not the worst thing to happen to American agriculture. While chemical usage might be reduced, there are other issues that need to be addressed. One issue is the protection of the farmers. In some cases small farmers are not only competing with industrial giants backed by government subsidies, but are now having to compete with organic agri-giants. The solution to this and many other issues is to keep production local. While this is not always possible in areas that lack a strong agricultural base, local production and consumption can be done at a much greater rate than is done today.

This transition would certainly be assisted by government policies that allow smaller farmers to grow in a sustainable way at a price that can compete with the produce in the supermarket. Many people advocate ridding of agricultural intervention all together, however I

feel that in a system so ingrained in government policies, this will be impossible. Furthermore, it would be a poor policy choice to remove certain subsidies, which are propping up the industry at this time. Rather, I advocate gradually reorganizing the way the government distributes aid, in a way such that farmers that truly practice sustainability are rewarded. This combined with proper education of sustainability and it's methods will ensure a smooth and popular transition. It is the nature of capitalism to expand on popular trends such as the organic industry. However, I do not think it is fair to exploit a mindset, in this case an environmentally conscious mindset, to make serious profits. In this way I believe that there should be new standards based on sustainability and modeled after a strong alternative food network to replace the current watered-down policies toward organic and sustainability. In the end, there needs to be more action backing up all the talk government organization are doing regarding sustainability. Not only this, but there needs to be a focus on the "correct" form of sustainability; the strong alternative movement. This is the only way to ensure a sound agricultural future for consumers, the environment and most importantly American farmers.

Conclusion

Implementing Traditional Ideals in a Modern Society

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The agriculture industry is a unique facet of American politics. The government has been heavily involved in shaping it to the commodity based, large scale operation that has dominated the agricultural scene in the past few decades. Intervention that started as a necessity to farmers during the Great Depression has become an unequally distributed and detrimental system to the livelihoods of smaller farmers who struggle to adapt to the changing standards of farming. These changes included, the development and adoption of new agro-technologies, the transformation from poly-culture to monoculture and the emergence of Agribusiness that came to dominate the business and politics of agriculture. This paper argues that these changes not only coincided with political decisions, but also were encouraged and expanded by the strong agricultural lobby and corresponding farm bills.

The biggest change to agriculture arguably came during the Regan era under Edward Butz whose motto was to plant "fence row to fence row", a direct attack on small farms. As the farms got bigger, the policy changed to support large farms producing high yields of certain commodity crops like wheat and corn. While there are various ways that farmers can receive government aid such as disaster relief payments or optional land retirement programs, commodity payments contribute the most to the emergence of industrial agriculture. Subsidies, which use to be tied primarily to land conservation, became the common term associated with government hand-outs to commodity producers. In reality, price supports and deficiency payments have come to dictate the agricultural market. For instance the average "subsidy" between 2004 and 2007 ranged from \$25-\$100

an acre depending on the commodity and other factors. While this may seem like a dream for farmers who receive all this extra government support, the subsidies in some cases are hurting them. This is particularly the case for small farmers who can only expand to a point before either running out of land, resources or money. Commodity payments help to encourage mass production of one commodity crop, which in turn encourages monoculture, high chemical usage, and all the other negatives as discussed in Chapter 2. Specifically, monoculture creates a lack of bio-diversity, which weakens the ecosystem and makes it susceptible to various diseases. Plus, high chemical usage is expensive to the farmers and even more costly to the environment.

It is also evident that the policy is unequally weighted to favor larger farms. In recent years, only the largest 10-12 % of farms received the greater majority of government payments. This is reflective in the fact that only those farms that conformed to Butz's ~~momentous suggestions loudly~~ voiced, "get big or get out". ~~awkward and vague 'momentous suggestions' — say precisely what you mean here~~ have been able to benefit from government policy and payments. This paper suggests that the system be altered in such a way to prevent large farms that have damaging practices from receiving disproportionate government aid. It just does not make sense. ~~It is my feeling that~~ the government should not reward a farm solely on how much it can produce when the negative externalities are often the highest on such farms. ~~This feeling is one that resonates true with a~~ ~~The alternative~~ agricultural practices explored in ~~Chapter Three~~, which seeks ~~to answer this question by~~ present an alternative by rejecting industrial agriculture for a more "traditional" mode of farming.

In many ways, the alternative movements mentioned in this paper align closely with the post-American Revolution ideal of Agricultural Fundamentalism, as mentioned in the first chapter. The idea is reflected in the social motives for alternative agricultural movements. For instance, according to Agricultural Fundamentalism, farmers were of the most virtuous citizens that deserved to be their own boss and live independently from the government. Many alternative farmers such as those who deem themselves “beyond organic” would agree with this notion. Like many alternative counter-movements, the alternative organic movement started out of a disdain for began as a rejection of the status quo. Farmers and non-farmers alike organized around the detrimental environmental and social effects of industrial farming, the chemical usage, and the large-scale enterprise that was getting enriching big farms and Agribusiness richer at the expense of the smaller farms and the environment. As consumers began to jump on the bandwagon, the alternative agriculture movement, primarily the organic movement was forced to expand. It is the nature of organic and sustainable farming to operate at a small scale so as the demand grew, the integrity of the movements suffered. Government action took place in parallel with the development as consumers and growers wanted a more stringent set of regulations and policies in regard to the “new” agriculture. Once the government intervened to “define” organic, the looming fears of a changing face of the movement became a reality. An industrial organic industry was born from the policies and thus the transition for many small organic and sustainable farms went from strong and local to weak and corporate.

However, not all government intervention has negative side affects. There are several alternative movements that have been successful in influencing the government to

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~~formulate policies that foster sustainable practices~~ ~~create favorable policy that caters to the ideals of sustainability.~~ This is ~~espically~~ ~~especially~~ the case with land reform movements that seek to protect farmland and soil quality by offering government incentive to farmers who comply with such policies. Federally funded land retirement programs date back to the beginning of agricultural policy and have made a come-back in recent farm bills. During the times of the Agricultural Adjustment Act, farming was done on a sustainable scale, run by families with production kept local for the most part. We are certainly seeing a return to that mentality in the alternative agricultural movements that seek more sustainable policy taking American agriculture back to it's "roots".

~~Personally, Despite the appeal of tradiaionalist~~ ~~traditionalist~~ ~~movements,~~ I would argue that a true return to ~~[agriculture post Great Depression]~~ ~~pre-industrial, early twentieth century agriculture~~ would be a tremendous waste of the technology and resources we have today. However, ~~while turning back the clock is not a viable route,~~ ~~today's I do not believe that~~ industrial agriculture ~~is far from ideal, and in fact unsustainable. is the answer to providing the nation's food supply.~~ The negative externalities associated with chemical usage, monoculture and agribusiness are too costly to continue into the future. Our planet has only limited natural resources, and artificial methods to a natural process are too costly. ~~Rather, Given these constraints, the~~ government should invest in an agricultural system that is natural but productive; ~~a positive externality of such investments would be support for and all the while supportive~~ ~~to~~ the farmer and rural life. Specifically, subsidies and other payouts should be reduced over time for farms that practice monoculture and industrial farming and redirected to farms that are energy efficient and environmentally ~~ly~~ friendly. There is also a local

component to this puzzle that can't be overlooked. From a government perspective, agriculture is a national industry that can and should be exported and supported in such a way that encourages interstate consumption. However, ~~I believe that an agricultural system that operates on a more a local level scale, that is such that food is grown produced and consumed within a 100 mile radius when possible, is a presents a better overall system alternative.~~ This is because a more cooperative bond is formed between the grower and consumer that holds the grower accountable for the product. In turn, the consumer keeps their money flowing back into the community allowing for continued agricultural growth. While I understand that there are many places in which local farming is impossible, those places that do have strong community based farm economies should be ~~rewarded in such a given incentives that match if not outpace those given to way that is consistent with~~ large-scale, nationally distributed farms. Right now, the latter ~~is receiving receive~~ disproportionate aid from the government ~~while the former is ultimately healthier despite being detrimental to~~ rural communities, the farmer, and the environment.

In the end, it will certainly take time for the voices of alternative agriculture to be heard over the wallets of Agribusiness. However, strong alternative agricultural movements are gaining wide spread consumer support. ~~This is important because while the government has substantial pull in dictating the procedures of farming, the consumer ultimately buys the product. I think that the combination of consumers who support sustainable farmer and farmers that reject industrial agriculture what has allowed for change thus far. If the government joins this relationship by shying away from policies that encourage industrial agriculture to aid that supports poly-culture and energy efficiency the~~

transition will become that much more realistic. In this way, I advocate a bottom-up movement spurred on by some top-down intervention. I think that this combination will allow for greater consumer advocacy and farmer independence while at the same time not completely eliminating the government's roll. This will be a challenge, especially considering Agribusiness's role -and a bottom-up transition from industrial agriculture is foreseeable in the future.in policy making today. Yet if that one obstacle is overcome either by campaign finance reform or anti-trust legislation, the path to sustainable farming will be much clearer. Therefore, as average citizens we can help to make a difference by continued support to those farmers who have rejected the industrial method. The organic movement is just one example of how consumer choice can influence a government reaction. However, we as American's need to be weary of the industrial side of so-called sustainable products and for that reason, choose local when possible. We can learn a lot from our past mistakes, and I urge America to learn from industrial agriculture's negative consequences before it's too late.

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~~This is a strong conclusion to a strong thesis. I wouldn't change much. Perhaps you can reach toward a stronger and more concrete last couple lines: A couple real questions, the answers to which could perhaps replace your last sentence: what is the political face of these alternative movements?—Are they just loosely affiliated Joel Salatin's? Or are they organizing a strong lobby / interest organization? Will agriculture be changed from the bottom-up? Or will it be changed by curbing industrial agriculture? Or will it be changed by government intervention to support alternative practices? Or some combination...?~~