Small-Scale Farming Practices: An Economic Analysis and Evaluation

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Pledge

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Abstract

The conventional agricultural systems that produce and distribute food for human consumption are monolithic and functioning constantly. However, these conventional systems are not operating in a manner that is sustainable environmentally, economically, or ethically. They also do not take into consideration the social and cultural importance of food production and consumption. Alternative methods to producing food must be found, especially in light of climate change and its effects on human processes. One potential alternative is a stronger focus on small-scale farming, particularly on family farms. However, these farms have a tendency to struggle economically. This paper analyzed the economic and environmental processes of a small family farm. The family saved money, and established firm connections to their food and each other during the process of raising livestock and cultivating a garden. Small-scale farming practices can be considered a viable alternative as food systems continue to adapt to a changing global climate and market structure.

Words – 123

Introduction

Food

There are so few aspects of our world that can connect every single person, plant and organism. This sounds simplistic but becomes meaningful as one realizes the rare connections that still exist among our human community. Proponents and naysayers of globalization alike claim that our continents, countries and communities are merging into one; the differences between us, for good or for bad, melting into each other (Holthaus, 2006). However, human beings in close and even intimate relationships or proximities can frequently be incapable of deep and meaningful connections. Each person looks out from their own sphere, struggling to see into anyone else's. Brief moments of true connection to others, to our immediate environments, and to the planet on which we all revolve are invaluable. Food and all that it involves provides us with a daily opportunity to grow these moments of connection. Every organism on this planet must take something else into its body to survive. Every human has some connection with putting food into their mouths. Some have never had to think about the action of buying, preparing, and eating food while others spend their entire short lives spending every moment wondering where their next calorie will come from. Food can mean culture and religion, be about community, family and individual identity; it can be our connection to the natural world and its long history of providing life for us (Pollan, 2008).

In the United States, the life that we consume is provided by an interesting host of characters. Corporate agriculture and nutritionist science have tried, and for many years succeeded, in convincing us that food can be reduced to the nutrients and calories that it contains. They have tried to convince us that it doesn't matter that two-thirds of the agriculture that exists produces only three grains – wheat, rice, and corn – because we're advanced enough to change these basic forms of food into any brightly colored snack or meat that we desire (Manning, 2006). They have paid billions of dollars to keep the government telling us that agriculture needs to be subsidized on a massive scale because without it humanity won't survive. They use as proof the fact that people are already starving to death without acknowledging that their broken system is what keeps the food in the hands of the wealthy. People and the planet are poisoned in the name of food. Corporate agriculture and scientists have proven that they cannot be trusted with feeding the world; they have clearly already failed (Nestle, 2012). The people who realize this are turning to a variety of other sources; organic, local, community-supported agriculture,

co-ops, farmer's markets, community gardens, urban agriculture to name a few. The number of farmers markets has more than doubled in the past 10 years (Gunders, 2012). People are hungry for food that sustains their bodies, their communities, and their planet. Food is a simple word for a complex entity that has the power to bring us all to a common place, a common place from which we can spread back out and remain connected (Pollan, 2008). In order to accomplish this lofty goal, the production and distribution of food will need to be sustainable environmentally, economically, and ethically.

Environment

The negative environmental effects of conventional agriculture on the planet have been thoroughly established. Conventional agriculture fully breaks the closed-loop cycle that has sustained plant growth on the planet since the beginning of time. The byproducts of the plants are removed from the cycle and consumed by humans or animals which depletes the soil of nutrients (Pimentel). In nature the nutrients are returned to the soil through the decomposition of inedible parts of the plant or waste from the creature ingesting the food. However, conventional agriculture strips the land of all plant material, and waste from consumption is contained in the sewage system away from the food system for safety reasons. This leads to the need for inputs into the cycle which are typically manmade and damaging to the natural ecosystem.

Runoff containing nitrogen and phosphorous leads to algal blooms that kill aquatic life ("Agriculture," 2013). Agriculture is the single largest non-point source of water pollution. Hundreds of millions of pounds of pesticides, herbicides, and fungicides from every chemical class are incorporated into waterways and then into the bodies of other plants and animals leading to unintended changes in natural systems and behaviors (Gunders, 2012). These chemicals also lead to resistant strains of pests or weeds that are then uncontrollable without stronger chemicals ("Problems Associated with Conventional Farming"). High rates of water use are required for irrigation of agricultural crops; in the United States 80% of all consumed freshwater is delegated to agricultural use ("Irrigation and Water Use"). Conventional methods of agriculture require intense amounts of energy which in the United States is produced mainly through sources that have negative environmental impacts and high rates of CO_2 emissions (oil, gas, coal) which contributes to climate change (Horrigan). Transportation of food from farm to table accounts of 10% of the total energy budget in the United States (Gunders, 2012).

The acceleration in climate change to which conventional agriculture is contributing is also negatively affecting the processes of conventional agriculture. The frequency of natural disasters such as floods, droughts, and tornados is increasing and each of these types of disaster can cause millions of dollars in damage to agricultural crops. Droughts are drastically changing the types and amount of irrigation that crops are needing to survive the growing season (Peterson). The agricultural system is both a cause and a victim of climate change. The monolithic conventional agriculture system currently providing for the world is incapable of the flexibility needed to deal with a fluctuating global climate (Conway, 2012).

Economy

Economically, the conventional agriculture system of the United States is unsustainable even through it is profitable for the upper echelon of corporation owners. Here sustainable is meant in the most basic sense; able to be sustained. The agricultural system is based upon unsustainable practices and is largely dependent upon sources of money besides its own profits. This money is provided at the behest of a wealthy minority while farmers on farms of all sizes struggle to work within a system based on an artificial balance of supply and demand (Berry, 2006). The farming practices that maintain the monolithic functioning of conventional agriculture are inherently unsustainable – massive amounts of inputs flow into a system and are wasted or do not provide an equal financial return, especially to the farmers themselves. It enhances the monetary gains of the already wealthy while damaging the farming capacity of the farmer and of the planet (Berry, 2006). Therefore, the financial system built upon these practices cannot possibly be sustainable.

Beef is extremely inefficient to produce; each pound of hamburger requires approximately 24 pounds of feed grain, 208 gallons of water, and 4,144 btu of fossil fuel energy (Barclay). Unfortunately, the largest financial sector of agriculture is meat and poultry (" The United States Meat Industry at a Glance"). The large majority of plant-based agricultural products are grown as feed for animals, especially grain corn. Grain corn is the most common crop grown in the United States and is almost exclusively grown on massive conventional farms. The majority of this grain is used to raise cattle for consumption ("Major Crops Grown in the United States"). The United States is the second largest consumer of beef in the world with an average American eating 62.4 pounds of beef in a year ("What the Average American Eats in a

Year"). Corn that is not used in feed for animals is used in feed for humans; it is used to produce corn syrup or is refined in a number of different ways into hundreds of forms of processed foods (Shah).

The production of the commodity crops such as corn and soybeans is maintained only through the payment of billions of dollars in subsidies each year from the United States government to agribusiness corporations and large-scale farming operations (Edwards). The newest Farm Bill only increased the subsidization of the over production of commodity crops in the United States. The government will be paying an estimated 90 billion dollars over the next ten years under the guise of crop insurance to undisclosed recipients, primarily to the 10,000 owners who make up the richest 20 percent of farm owners in the United States (Dayen). This system takes tax payer dollars to provide additional profit to the wealthiest farm owners who are traditionally using unsustainable farming and business practices. The system also supports the overproduction of the top five commodity crops – corn, soybeans, wheat, rice, and cotton – which results in a continual decrease in the selling price for these crops therefore increasing the amount of money that the government is required to pay to defray their losses. Only recently has there been an increase in the selling price for commodity crops due to the increasing production of ethanol for cars, which is also unsustainable for a host of reasons (Dayen).

The price that agribusiness pays to produce food does not include a multitude of negative externalities that affect society in a number of explicit and subtle ways. Pesticide use, which includes herbicides, insecticides, fungicides, etc., has grown steadily over the decades even as research increasingly highlights the negative effects on human health (Gunders, 2012). Not only do pesticides damage the workers who disperse them, who are frequently underprivileged and unprotected, but they also remain on food and become incorporated into water systems. These pesticides have been linked to a number of health disorders including developmental defects, birth defects, autism spectrum disorders, reproductive defects and cancer ("The Problem with Pesticides"). The end result is society paying medical bills to cover the cost of a dangerous and unsustainable agricultural system which produces food that causes even more health problems.

Diets that are high in processed foods lead to obesity, diabetes, high blood pressure, heart disease and cancer. These processed foods are made almost entirely from different forms of corn and protein comes from animals who were raised on a diet consisting almost entirely of corn. Medical treatment for obesity alone in the United States cost more than 160 billion dollars

(Hoffman). The tax-payers and the government of the United States are paying for the negative externalities caused by the multi-billion dollar agribusiness industry; this is economically unsustainable.

Ethics

The conventional agriculture system does not treat human workers or animals with respect. Farmworkers perform more strenuous labor than many other sectors in the United States and receive menial protection. They are exposed to higher levels of pesticides in every aspect of their daily work and are not protected by the legal system or by unions. They are frequently provided with substandard levels of housing, payment, education, food and water ("Farmworkers").

Animals in conventional agricultural systems are treated as commodities and not as living, feeling creatures. The majority of animals are raised in Concentrated Animals Feeding Operations (CAFOs). This means that they are raised in tight confines with thousands of other animals and that feed is brought to the animals as opposed to the animals moving to find food through grazing or in a pasture (Drummond). These factory-like operations are run by a small percentage of companies that provide the majority of the meat for the United States. The animals are not intended to live for long periods of time therefore their care is given minimal focus while pushing their production capabilities is given the highest priority. Cattle, swine, chickens, turkeys and other animals consumed by Americans are subject to cruelty and inhumane conditions during their short lives and subsequent slaughter ("Animal Welfare"). Because these animals are raised in a manner in which their health is not a priority they are less healthy for humans to consume. Levels of fat are much higher in animals raised in an industrial manner as are levels of antibiotics and other man-made substances (Drummond).

The most unfortunate aspect of this current system is that it doesn't even manage to ensure the health and happiness of every person on the planet. On our planet 805 million people suffer from chronic undernourishment. 2.6 million children die from hunger-related causes. One-third of children in the developing world under the age of 5 are stunted from lack of food (Conway). One in six people in the United States lacks a secure supply of food on a daily basis. Meanwhile, 40% of the food produced in the United States is thrown away; most of it before it reaches the consumer (Gunders, 2012). Small-scale farmers in developing countries produce

more than sufficient amounts of food to provide for themselves and their families but watch their produce rot because they lack the means to buy into the globalized system of distribution (Johnson, 2014).

Alternatives

Many governments, non-profit groups, and general populations of countries around the world agree that a change needs to occur to our current food production and distribution systems. However, there is no clear consensus on what new system would be the most sustainable or beneficial environmentally and socially. It can be argued that some organic systems mirror the organization of conventional agriculture systems simply without adding man-made chemicals. This does not help reduce energy use or increase quality of food (Solomon). There are many small scale farming ventures that attempt to bring consumers into closer connection with their food. These include Community Supported Agriculture (CSA) in which members buy a share of a farmer's products for a growing season, local farmer's markets, and direct sale of agricultural products from small farms ("Community Supported Agriculture"). However, attempts to increase food quality perhaps require a higher level of energy use and cannot efficiently provide enough food for the entire world. One methods of food production that could greatly affect the agricultural systems in the United States positively is small-scale farming ("Trade and Environment Review 2013: Wake Up Before It's Too Late"). Small-scale farming, for the purpose of this study, means personal farms or farming practices utilized by family groups or individuals in order to provide basic goods for themselves or others in a more environmental- and consumer-friendly manner. This could entail a family that raises several chickens for eggs or has a small garden for basic produce. Small-scale farming could mean an individual living in a small apartment in the city has several pots of herbs growing in their kitchen. The beauty of small-scale food production is that it has the capacity to be adapted to any life-style.

Last year the UN Commission on Trade and Development produced a report titled "Trade and Environment Review 2013: Wake Up Before It's Too Late," which included contributions from more than 60 expert around the world. This report detailed the growing agricultural crisis around the world and amidst their call for a structural shift in food production and distribution changes, declared that small-scale organic farming is the key to "feeding the world." The report stated that the agricultural system of today produces more than enough calories to feed a global

population of 12-14 billion people but more than one billion are still currently suffering from starvation and another one billion are suffering from malnutrition ("Trade and Environment Review 2013: Wake Up Before It's Too Late"). The current system is clearly insufficient.

Small scale farming connects people to their food and to the systems of nature that allow for food to be grown. The current systems of food production and distribution cut people off from their food and allow them to imagine that the earth can simply maintain this level of production forever. However, research clearly shows that this is simply untrue. Small scale farming can create more of a closed-loop system for producing food and allows for farmers to constantly monitor and adjust the economic and environmental effects of their farm. However, in order to succeed small scale farming must be economically efficient; it cannot provide food for the world or provide for positive change if it cannot at least pay for itself.

Family farming is a unique niche within small-scale farming. The UN General Assembly declared 2014 the International Year of Family Farming in order to draw attention to the important role that family farming plays in food security. Small-scale family farms have the potential to be a critical component of achieving a sustainable food production and distribution system in the future (Asin, 2014). Family farmers have strong ties to their local economic, environmental, social and cultural systems and project a firm commitment to strengthening these systems. Small-scale family farms make up the majority of agricultural sectors in developing countries but are facing increasing pressures in developed countries as agricultural corporations consolidate farming land and lobbying power (Conway). Lack of financial and technological support are problems that small family farmers face across the globe but an increase in desire for thoughtful and meaningful food purchasing options has the potential to solidify their ability to survive.

In my senior comprehensive project I will be surveying and compiling an economic census of my family farm. My family of eight people lives on an 11 acre farm in Orrtanna, PA. We raise goats for meat and dairy, chickens for meat and eggs, turkeys for meat, and pigs for meat. We also plant a large garden with various vegetables. The farm products are currently only used to supplement the needs of my family. The census will allow for analysis of the economic inputs and outputs and the discrepancies between the two. Hopefully this can then be expanded into a plan for equalizing the inputs and outputs so that the farm is providing the funds

for its continuance. This will allow for consideration of the effects and potential problems of expansion of small scale farming as an alternative to conventional agribusiness.

Methods

1. I created an economic census evaluating all inputs and outputs of my family farm for a year beginning January 1st 2013 and ending January 1st 2014. This was done by surveying my family and using our financial records to establish the price and quantity of inputs. I established outputs of the farm monetarily by estimating money saved by my family by not purchasing goods comparable to those consumed. In many of the comparisons I compared our goods to the most expensive, the least expensive, and the most comparable in quality goods available. I did not attempt to ascertain how much of each good my family was consuming, I simply calculated how much money we would have spent on purchasing an identical portion of the goods if we hadn't provided the goods ourselves. In the course of this study assumptions were made for each breed of animal.
    a. Goats: I assumed that at the beginning of the year the herd consisted of three females of at least two years of age, two males of at least two years of age and four goats (two male, two female) who had been born the previous April. Two of the older females were milked once a day for family consumption. One of the yearling females and the non-milking older female were both bred in order to give birth in April of the study year. I assumed that they each birthed two healthy babies. After they gave birth they were milked twice a day starting at two weeks after birthing. For the first six weeks the milk was given to their babies and after this was used for family consumption. In March of the study year the two male yearlings were butchered. In the months of June to September all of the goats were put out to graze in fields during the day.
    b. Chickens: I assumed that 50 meat chicks were bought in May. This group consisted of all male chicks of various breeds. In June, 25 Speckled Sussex chicks were bought for laying. This group was split equally between male and female chicks. The chicks remain in a small pen in which they have a heating

lamp for four weeks, are then moved to a medium pen for four weeks and then are moved into various bigger pens for the remainder of their lives. Meat birds are moved into an outside field pen where they are kept for another eight weeks and then butchered in September. The birds butchered in September are all of the meat birds and the male Speckled Sussex. The female Speckled Sussex remain in an outdoor pen attached to the barn. These hens begin laying in October so they are only assumed to be laying for three months in the study year. The number of eggs produced fluctuates as the hens all become mature and then potentially slow down egg production as the weather gets colder.

c. Turkeys: Turkey chicks were purchased in May. These chicks consisted of 15 Spanish Black turkeys. These chicks also spend four weeks in a small pen, four weeks in a medium pen and the rest of their lives in the large outdoor field pen. They are butchered in November for the Thanksgiving season. We sell ten of the birds whole and keep the remaining five birds whole for family consumption.
d. Pigs: I assumed that in January we still had the three pigs that we had purchased the year before. These pigs were butchered in April. They were butchered at around 400 pounds. In August three piglets were purchased at eight weeks old; two males for 100 dollars each and one female for 70 dollars each.

Several food stores were used for the financial comparisons. These stores were selected to provide as balanced as possible of a price comparison. The stores are as follows:

a) Giant Eagle – Meadville, PA
b) Giant Food Stores – Gettysburg, PA
c) Bucher Meats – Biglerville, PA
d) Whole Foods – online shopping

Giant Food Stores is the grocery store that my family primarily uses and Giant Eagle has comparably competitive pricing. My family purchases meat from Bucher Meats and sometimes will travel to a Whole Foods in order to purchase organic products.

2. This evaluation allowed me to understand the inner workings of my family farm. I analyzed the most and least efficient and effective practices used on my farm. I also saw which products are produced most efficiently and determine future possibilities for

profits. This will allow me to make suggestions for farming decisions that my family makes in the future based on economic and environmental factors. I will also analyze the potential effects of the expansion of small scale farming as an alternative to conventional agriculture.

Results

Goats

Results show that goats are the most costly animal in terms of time and money (Fig. 1, Fig. 2). Goats required more than half of the overall time which consisted of daily care and butchering time for each animal (Fig 1). Goats also required time during birthing. Ultimately goats require 59% of yearly time and 60% of yearly monetary cost. Despite these high costs goats do yield the greatest return on investment in terms of money saved (Table 1). The predominant saving came from milk production. Goats were the only species which had a greater percentage of "profit" compared to time and money required (Fig. 1, Fig. 2, and Fig. 3).

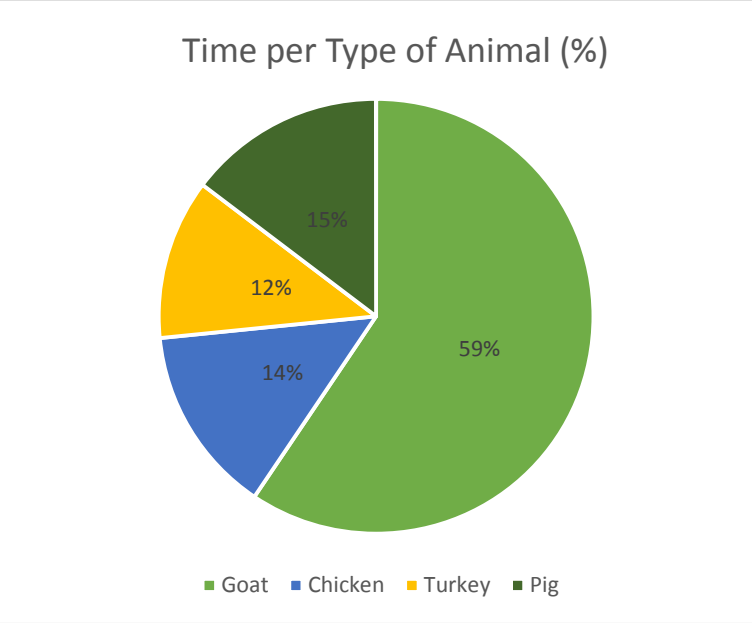

Figure 1. The percentage of time that each species of animal requires. Time included daily care and butchering for all species. Goats also required time for birthing, milking, and feeding of babies.

Table 1. The yearly amounts of money spent on each species of animal, money spent on each individual animal within the species, total amount of money saved by not purchasing the byproducts of each species, and if the year resulted in a profit or a loss for each species.

Type of Animal	Total Money Spent	Money Spent per Individual Animal	Total Money Saved	Money Saved per Individual Animal	Profit/Loss
Goats	2819.49	201.39	7841.26	603.17	5021.77
Chickens	984.68	13.13	1073.83	14.32	89.15
Turkeys	591.78	39.45	1020.00	68.00	428.22
Pigs	1040.1	173.34	1269.74	211.62	229.64
Total	5436.05	427.31	11204.83	102.80	5768.78

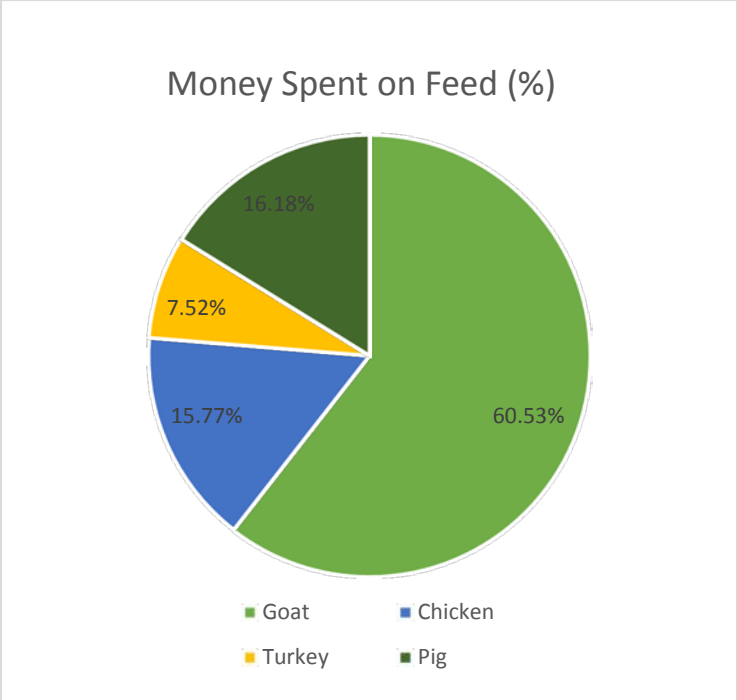

Figure 2. The percentage of money spent on feed for each species out of the total amount of money that was spent on feed for all of the animals for the study year.

Goat milk production equaled 759 gallons for the study year. The cheapest option for comparison was Dean's Whole Milk which was certified organic and produced without the use

of growth hormones and antibiotics. The option used for comparison was Horizon Organic 2% milk. Goat milk has a fat content most like 2% cow milk and our goats are raised organically. Our production resulted in a savings of 7,577.86 dollars.

Table 2. Shows money saved by producing 759 gallons of goat milk. The categories are the most expensive option, least expensive option and most comparable option.

Brand	Horizon Organic Whole Milk plus DHA	Dean's Whole Milk	Horizon Organic 2%
Price per gallon	10.62	4.09	9.98
Money saved	8063.61	3108.86	7577.86

Goat meat was compared to the prices of ground beef in various stores. My family does not purchase goat meat when we do not butcher a goat; we purchase ground beef which is supplemented with the ground goat meat when available. All numbers were calculated using ground chuck. The most expensive option available for ground beef was at Giant Eagle. The brand of the meat was Strauss and the packaging claimed that the meat came from cows who were 100% grass raised and finished in the US by family farmers who don't use feedlots. The cows were not given antibiotics or growth hormones and were raised in an agriculturally sustainable and environmentally friendly manner. The cheapest option came from Bucher Meat which is the local butcher whom which my family purchases meat. The Whole Foods option was in the mid-range of prices and according to their website was produced from cows who were pasture or range raised for at least two-thirds of their lives, given no growth hormones or antibiotics and fed a vegetarian diet. I used the Bucher Meat option for the final calculation of total money saved in order to get the most realistic calculation for my family's savings. This option results in a savings of 263.40 dollars when two goats are butchered resulting in 60 pounds of ground goat meat.

Table 3. Shows the prices of options for meat purchase to replace 93.75 pounds of pork. The categories are the most expensive option, least expensive option and most comparable option.

Brand	Giant Eagle - Strauss Brand	Bucher Meat	Whole Foods
Price per pound	11.99	4.39	8.99
Money saved per goat	359.70	131.70	269.70
Total money saved	719.40	263.40	539.40

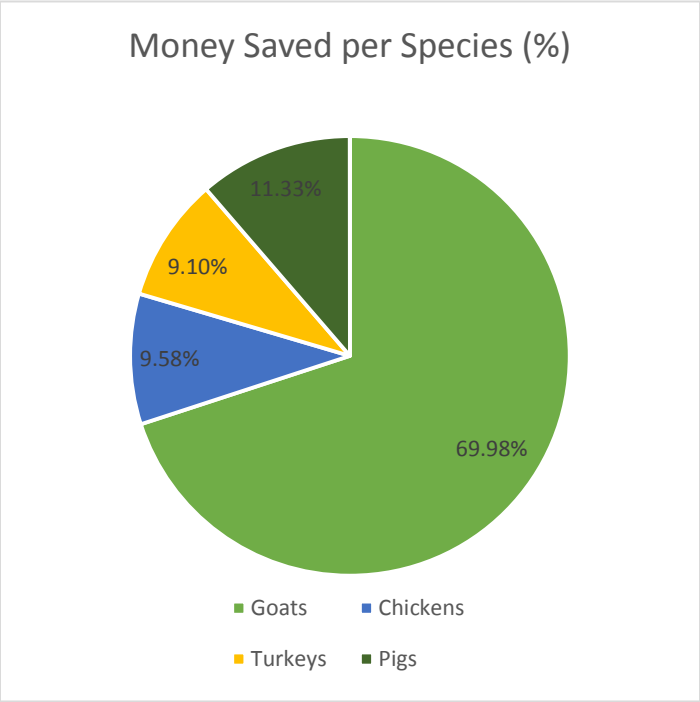

Figure 3. Shows the percentage of money saved per species out of the yearly total for the study year.

Chickens

Chickens provided the least amount of "profit" but were the least expensive per animal (Table 1). Chickens provided the most "profit" through meat production as opposed to egg production. The most expensive eggs were Organic Valley large brown eggs produced

organically from free-range chickens. The eggs used to make a comparison to my family's farm were Davidson's Safest Choice which were produced from chickens who were fed a vegetarian diet without antibiotics or growth hormones. The eggs were pasteurized in a natural warm water bath. By this comparison our egg production resulted in 236.24 dollars of savings. When calculating the chicken meat comparison the majority of the "most expensive" and "least expensive" comparison products were found at Giant Eagle. The "most comparable" products were found at Whole Foods, which is committed to producing poultry that has been fed a vegetarian diet, provided with adequate space in an environment which allows for natural foraging behaviors, and never given antibiotics. All of the meat chosen for the most comparable category were organic.

Table 4. Shows the comparison of egg prices to establish how much money was saved by the production of 767 eggs during the study year. The categories are the most expensive option, least expensive option and most comparable option.

Brand	**Hillandale Eggs**	**Organic Valley**	**Davidson's Safest Choice**
Price per egg	0.19	0.57	0.31
Money saved	143.43	433.36	236.24

Table 5. Shows the prices of options for meat purchase to replace 277.5 pounds of chicken meat. The categories are the most expensive option, least expensive option and most comparable option.

	Most expensive	**Least expensive**	**Most comparable**
Thigh	4.99	1.69	3.49
Wing	2.69	2.69	2.69
Breast	6.99	2.69	4.99
Drumstick	2.99	1.69	2.99
Whole bird	3.79	1.59	3.79
Total money saved	1287.98	551.48	1051.73

Turkeys

Turkeys required the least amount of money and time and saved approximately the same percentage of money as chickens (Table 1, Fig. 1, Fig. 2, and Fig. 3).The money saved from raising turkeys was a combination of 720 dollars raised by selling 10 birds and 300 dollars saved by not purchasing five whole turkeys.

Pigs

Pigs required slightly more time and money than the poultry but also provided a slightly higher percentage of money saved (Fig. 1, Fig. 2, and Fig. 3). Both pigs and turkeys only offered one form of byproduct as compared to chickens and goats which provided two.

The total amount of pork produced during the study year equaled 93.75 pounds. The options for pork comparisons were mixed between various stores. The most comparable options were also the most expensive options, most of which were from Whole Foods. Whole Foods commits to producing pork that has been raised without the use of gestation crates and with bedding available in their housing areas. They are fed a vegetarian diet without the addition of antibiotics and growth hormones.

Table 6. Shows the prices of options for meat purchase to replace 93.75 pounds of pork. The categories are the most expensive option, least expensive option and most comparable option.

	Most expensive	**Least expensive**	**Most comparable**
Picnic shoulder	2.39	2.39	2.39
Boston butt	3.89	3.69	3.89
Ham hock	3.29	3.29	3.29
Chops	6.99	2.29	6.99
Center loin roast	7.99	4.49	7.99
Bacon	7.99	0.30	7.99
Ribs	5.99	2.29	5.99
Ham	7.99	2.39	7.99
Sausage (lbs)	6.99	2.99	6.99
Total money saved	588.31	272.35	588.31

Garden

In total the garden saved my family 1,297.11 dollars in the course of the study year. Net "profit" was 1,096.16 dollars. Tomatoes provided the most "profit" while spinach provided the least. Spinach had the highest price for the most comparable good and onions had the lowest price. All of the "most comparable" prices came from Whole Foods. Whole Foods is committed to providing produce that follows a "responsibly grown" rating system. Their system takes into account a farmer's impact on soil health, air, energy, climate change, waste reduction, farmworker welfare, water conservation and production, ecosystems and biodiversity, and pest management.

Table 7. Price comparison for produce from garden. Options shown are the most expensive, least expensive and most comparable. Total money saved includes all produce.

Vegetable	**Most expensive**	**Least expensive**	**Most comparable**	**Money saved**
Tomatoes	5.00	2.49	3.98	398
Onions	3.99	0.99	1.84	276
Lettuce	15.96	2.49	2.99	149.5
Potatoes	3.98	0.50	2.00	120
Cucumbers	2.99	0.99	2.50	100
Kale/Chard	0.99	2.99	2.75	55
Cherry tomatoes	5.58	2.49	4.99	49.9
Celery	3.49	2.19	2.49	49.8
Bell peppers	9.98	1.99	3.99	39.9
Hot peppers	10.00	3.99	3.99	39.9
Spinach	12.77	2.49	6.37	19.11
Total money saved				**1297.11**

Table 8. Money saved and spent for garden during study year resulted in "profit."

Garden	
Total money saved	1297.11

Total money spent	200.95
Profit/loss	1096.16

General

In total, 3,867.93 dollars were spent on 319 bags of grain for all of the animals for the study year. Overall, grain for pigs cost 625.82 dollars and grain for goats cost 2,341.26 dollars for the study year. Per individual animal, grain cost 104.30 dollars per pig and 180.10 dollars per goat. These two species were by far the most expensive with a chicken only costing 8.14 dollars of grain and a turkey costing 19.38 dollars of grain.

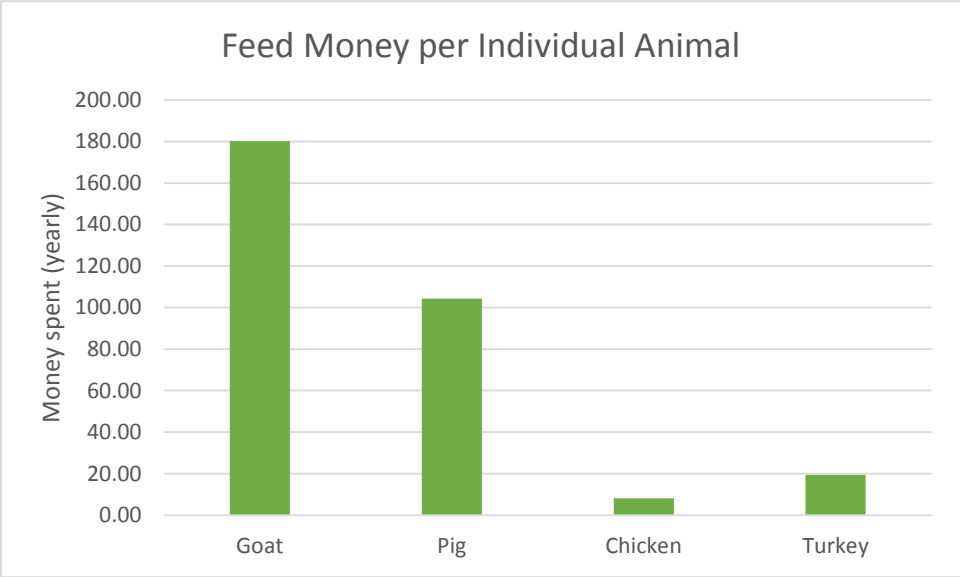

Figure 4. Money spent on grain for one animals from each species.

1107.07 hours were spent in farm-related activities during the study year. 150 of these were spent in garden-related activities and 957.07 were spent in animal-related activities.

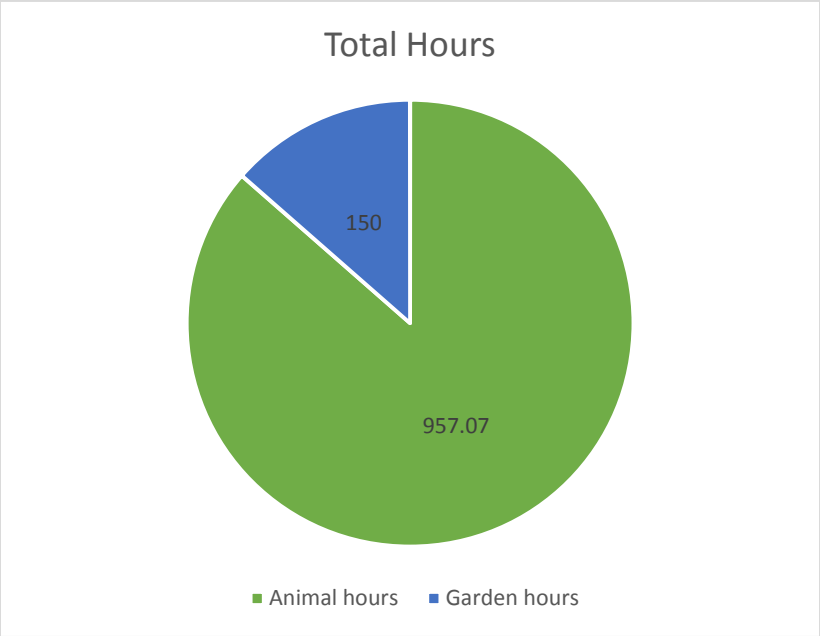

Figure 5. Total hours spent on farm-related activities

Discussion

It is clear that the goats are the most “profitable” species of animal that we have; both in terms of amount of money and percentage of money. They are a beneficial investment to make on our farm. I was, in fact, surprised to see this. I was surprised to see that each species of animal and the garden are actually saving us a fairly large amount of money. The pigs, chickens and turkeys are currently giving back less than the time and money that we put in but not a large amount. My family is not in the business of farming for money, we are in the business of farming for the farming experience and to leave a positive impact on our immediate and larger environments.

Perhaps because eggs aren’t as “profitable” as chicken meat one would suggest that we stop buying egg birds and use the money to buy more meat birds. We could then use the increased money to buy organic, cage-free, farm-fresh eggs from someone who can more efficiently and profitably produce eggs. However, that suggestion does not take into account the feeling of carefully sliding your hand under a hen sitting on her nest in the egg box that your dad built and pulling out a perfectly smooth, perfectly warm brown egg. This egg gets added to the basket full of other eggs that you helped the chicken to create. The suggestion, while sensible, does not make up for the feeling of standing in an egg cleaning assembly line at the kitchen counter with your siblings which results in a pyramid of those smooth brown eggs and then cartons carefully filled and carried with pride to the fridge. Paring down the processes of our farm would not result in an enhanced life for my family; in fact, quite the opposite.

The total amount of money that my family’s farm saves us in a year of typical production is 5,768 dollars. However, this is of secondary concern in regard to the benefits that my family receives from the farming lifestyle in which we participate. In my calculations, I did not take into account any monetary offset for the 1,107.07 hours of work that the farm required for the study year. If we paid a farmworker 10 dollars an hour, which is competitive with what the USDA claims farmworkers are paid, our expenses would have risen by 11,070 dollars ("USDA ERS - Farm Labor: Background"). This clearly would not be effective for my family farm. Family farms have the added benefit of built in labor. One could argue that members of my family could be out working at a job and making money that we could then use to pay a farmer who can produce eggs and milk and meat more efficiently. However, then we would not getting

the benefit of being a family who works on a farm together. When my family is working for 12 hours a weekend outside in the cold to butcher chickens we are working together to accomplish a very achievable and, to us, worthwhile goal. If that time together was sacrificed in order to be able to afford farm products that perhaps cost a few less dollars to create my family would be on the losing end of that exchange.

The environmental benefits of my farm are clear in that they take away from the monolithic entity that is corporate agriculture. The meat, eggs, milk and produce that my family consumes have not contributed to the suffering of farmworkers and livestock whom we will never meet. Our produce has not added to the pesticide contamination of our waterways. Our food has not put money in the pockets of those who need it least. What is unclear about our environmental benefits is our carbon footprint and if it would be beneficial for as many families as possible to have a farm our size or smaller. It would be important to ensure that many small carbon footprints wouldn't actually be less efficient than one large one. Currently, when taking into account emissions for fuel use, fertilizer production, and land use change, agricultural activities account for 30% of generated global greenhouse emissions (Conway). This number could almost certainly be decreased by a more thoughtful and deliberate agricultural process that would take place in small-scale farming.

In an ideal world, a majority of families and individuals in the United States could begin producing a portion of their food intake. This would increase the meaningful connections that our society can have with food and its production while also saving money. This money could then be utilized on increasing thoughtful purchasing of food that cannot be grown in certain environments. For instance, bananas will never be efficiently grown in Meadville, Pennsylvania. However, in southeast Costa Rica a group of indigenous farmers has formed the Talmanca Small Farmers Association and is growing bananas without pesticides (Johnson, 2014). If the general population has become aware of the benefits of purchasing food from small-scale farmers, this gives the Talmanca farmers a niche in the market which was previously unavailable to them. Hopefully, as the massive power of corporate agriculture fades people in Meadville will be able to afford and enjoy a banana that is benefiting the Talmanca farmers which will benefit their community and strengthen their economic systems.

Increasing society's awareness of food production systems and bringing them closer to home will reduce the major problems associated with food waste in the United States. Over 40% of food produced in the United States goes uneaten which wastes 165 billion dollars every year. In the farming section of the process approximately 7% of planted field in the United States goes unharvest and is plowed back into the ground (Gunders, 2012). While this is beneficial for the nutrient cycle of those fields it doesn't undo the damage caused by the pesticides, herbicides, and fungicides already applied to the plants. It doesn't replenish waterways with the hundreds of gallons of water that were used to irrigate those fields. And it doesn't benefit the millions of starving people in the world. During distribution, food, primarily produce, is wasted due to lack of ideal transportation methods. Also, markets will frequently misestimate the amount of food that they will need to restock. Therefore, food sits in distribution holding areas until it rots. At the retail level, store managers consider it a failure if a store isn't producing high levels of food waster. They consider waste a sign of quality control and full shelf standards and worry that the customer experience will suffer if the ideal image of food isn't maintained in their displays (Gunders, 2012). Imagine how much less food would go to waste if each member of our society could grow their own basic produce. Perhaps consumers would become less fixated on the sell-by date or the ideal image of a tomato and simply become concerned with the health benefits and enjoyable aspects of food production instead. Once a consumer can grow a tomato for themselves perhaps they will realize that there is something unnatural about the uniform size, shape and color of the tomatoes at the supermarket.

Increasing stable small-scale farming will only benefit developing and developed countries. In developing countries, small-scale agriculture typically accounts for over 80% of the work force and 50% of GDP. Additionally, it has been shown that for a one percent gain in GDP due to agricultural gains generates a six percent increase in overall expenditure of the poorest 10% of the population. When a one percent gain occurs but does originates from a non-agricultural sector there is a zero percent increase in expenditures for the poorest 10% of the population. Generally, the majority of the agricultural work force consists of women who have exhibited greater commitments to sustaining their families, communities and the planet through environmentally friendly practices (Conway). Increasing the ability of these types of farmers to thrive will only serve to benefit the future of our planet. Ideally, the small-scale model of

farming can take root in one place, and increase the strength of small-scale farming across the globe by decreasing the customer base and power of corporate agriculture.

In future research on this I would like to calculate the exact amount of money that my family is saving and the exact amount of byproducts that we are consuming. However, this would require a much more in-depth data collection of my family's consumption habits. I would also like to investigate and analyze the largest contributors to the carbon footprint of our farm. This information would be crucial to evaluating if small-scale family farms can efficiently counter all of the negative environmental impacts of corporate agriculture.

Food is more important than the nutrients it contains or the amount of money which it costs. The food that my family creates is worth something more than money. When we as a family can sit down to a Thanksgiving meal where more than half of the food on the table came from our farm we are impacting our own lives, the life of our farm and the lives of those who will never even see our farm. We are creating food in a sustainable manner economically, environmentally, and ethically. We will leave our soil healthier than it was when we began farming and we will create healthier lifestyles for our family throughout the years. We will continue farming for the love of watching plants grow, for the love of eating a sun-warmed tomato from the garden, and for the love of the planet which will hopefully continue to be patient with our society.

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Appendix 1: Store prices of animal products

Beef							
Store	Brand	Animal	Cut	Price/quantity	Quantity	Total price	Labels
Giant Eagle	Nature's Basket	Beef	Boneless cube steak	7.89	.74 lb	5.84	No hormones or antibiotics, no artificial ingredients, minimally processed, traceable to birth, 100% vegetarian diet
Giant Eagle	Giant Eagle	Beef	Chuck chuck spencer roast	3.99	1.76 lb	7.02	
Giant Eagle	Giant Eagle	Beef	Chuck tender steak	6.79	1.69 lb	11.48	
Giant Eagle	Giant Eagle	Beef	Chuck tenderloin steak	7.29	0.68 lb	4.96	
Giant Eagle	Giant Eagle's Market District	Beef	Eye of round roast	5.99	2.54 lb	15.21	The best Angus beef available
Giant Eagle	Giant Eagle's Market District	Beef	Eye of round steak	6.19	.77 lb	4.77	The best Angus beef available
Giant Eagle	Nature's Basket	Beef	Eye of round steak	7.49	.84 lb	6.29	No hormones or antibiotics, no artificial ingredients, minimally processed, traceable to birth, 100% vegetarian diet
Giant Eagle	Giant Eagle's Market District	Beef	Filet mignon steak	20.99	.79 lb	16.58	The best Angus beef available
Giant Eagle	Giant Eagle's Market District	Beef	Flank steak	9.99	.90 lb	8.99	The best Angus beef available
Giant Eagle	Giant Eagle	Beef	Ground beef	4.69	.84 lb	3.94	
Giant Eagle	Strauss	Beef	Ground beef 85% lean 15% fat	11.99	1.09 lb	13.07	100% grass fed and grass finished, no feedlots, only pastures, no antibiotics or hormones, agriculturally sustainable and environmentally friendly, born and raised in the USA by family farmers
Whole Foods		Beef	Ground beef 85/15	5.49			
Whole Foods		Beef	Ground beef 85/15	8.99			grass fed
Whole Foods		Beef	Ground beef 85/15	7.99			
Whole Foods		Beef	Ground beef 85/15	8.99			grass fed, organic
Whole Foods		Beef	Ground beef 85/15	6.99			grass fed, organic
Giant Eagle	Giant Eagle's Nature's Basket	Beef	Ground beef 90% lean 10% fat	7.29	.75 lb	5.47	No hormones or antibiotics, no artificial ingredients, minimally processed, traceable to birth, 100% vegetarian diet
Bucher Meat	Bucher	Beef	Ground chuck	4.39			
Giant Eagle	Giant Eagle	Beef	Loin boneless strip steak	13.49	1.52 lb	20.5	Born, raised and harvested in the USA
Giant Eagle	Giant Eagle	Beef	Loin strip steak	14.49	0.56 lb	8.11	
Giant Eagle	Giant Eagle	Beef	Ribeye value pack delmonico steak	13.99	1.82 lb	25.46	
Giant Eagle	Giant Eagle	Beef	Ribeye value pack semi bnl rib steak	11.99	1.87 lb	22.42	
Giant Eagle	Giant Eagle's Market District	Beef	Ribeye VP delmonico steak	15.29	1.59 lb	24.31	The best Angus beef available
Giant Eagle	Giant Eagle	Beef	Round bottom round steak	7.29	1.40 lb	10.21	
Giant Eagle	Giant Eagle	Beef	Round eye of round steak	7.29	.57 lb	4.16	
Giant Eagle	Giant Eagle	Beef	Round london broil	6.59	1.50 lb	9.89	
Giant Eagle	Giant Eagle	Beef	Sirloin tip steak	6.79	1.33 lb	9.03	
Giant Eagle	Giant Eagle	Beef	Value pack chuck tender steak	6.79	1.40 lb	9.51	
Giant Eagle	Giant Eagle	Beef	Value pack ground chuck 80% lean 20% fat	4.59	2.00 lb	9.18	
Giant Eagle	Giant Eagle's Market District	Beef	VP boneless strip steak	11.79	1.96 lb	23.11	The best Angus beef available
Giant Eagle	Giant Eagle	Beef	VP ground round 85% lean 15% fat	5.49	1.90 lb	10.43	
Giant Eagle	Giant Eagle	Beef	VP lean ground 93% lean 7%fat	6.29	2.12 lb	13.33	
Giant Eagle	Giant Eagle's Market District	Beef	VP T-bone steak	13.79	2.00 lb	27.58	The best Angus beef available

Milk						
Store	Brand	Product	Price/oz	Quantity	Total price	Label
Giant Eagle	Dean's	Whole milk	0.032	128 oz	4.04	certified organic, without antibiotics or artifical growth hormones, ultra pasteurized
Giant Eagle	Giant Eagle	Vitamin D Milk	0.033	64 oz	2.09	certified organic, without antibiotics or artifical growth hormones, ultra pasteurized
Giant Eagle	Giant Eagle Nature's Basket	Organic reduced fat milk, 2%	0.055	128 oz	6.99	
Giant Eagle	Nature's Basket	Organic whole milk	0.055	128 oz	6.99	
Giant Eagle	Organic Valley	Whole milk	0.077	64 oz	4.89	
Giant Eagle	Horizon	Organic 2% milk	0.078	64 oz	5.29	no rBST or rBGH
Giant Eagle	Horizon	Organic whole milk	0.078	64 oz	5.29	no artificial growth hormones
Giant Eagle	Horizon	Organic whole milk plus DHA	0.083	64 oz	5.59	

Chicken							
Store	Brand	Animal	Cut	Price/quantity	Quantity	Total price	Labels
Giant Eagle	Giant Eagle	Chicken	Leg quarters	1.39	4.36 lb	6.06	
Giant Eagle	Giant Eagle	Chicken	Whole chicken	1.59	6.77 lb	10.76	fresh young chicken, all natural, minimally processed, no artificial ingredients, no preservatives, may contain up to 6 percent retained water
Giant Eagle	Giant Eagle	Chicken	Thighs	1.69	4.18 lb	7.06	minimally processed, no artificial ingredients, no hormones, fresh never frozen, all natural, may contain up to 3 percent retained water
Giant Eagle	Giant Eagle	Chicken	Drumsticks	1.69	2.76 lb	4.66	USA
Whole Foods		Chicken	Family value pack drumsticks	1.99			
Giant Eagle	Giant Eagle	Chicken	Bone in thighs	1.99	2.80 lb	5.57	
Giant Eagle	Giant Eagle	Chicken	Drumstick	1.99	2.64 lb	5.25	
Giant Eagle	Giant Eagle	Chicken	Country cut-up (whole chicken cut up with giblets)	1.99	4.25 lb	8.46	all natural, minimally processed, no artififical ingredients, no hormones, fresh never frozen, may contain up to two percent retained water, USA
Giant Eagle	Giant Eagle	Chicken	Wings	2.69	1.26 lb	3.39	
Giant Eagle	Giant Eagle	Chicken	Boneless breasts	2.69	3.74 lb	10.06	enhanced with up to 15% chicken broth, skinless with rib meat, young chicken, USA
Whole Foods		Chicken	Skinless drumsticks	2.79			
Whole Foods		Chicken	Whole chicken	2.79			
Whole Foods		Chicken	Boneless skinless thighs	2.8			
Whole Foods		Chicken	Air chilled cut up chicken	2.99			
Whole Foods		Chicken	Whole cut up chicken	2.99			
Whole Foods		Chicken	Drumsticks	2.99			organic
Whole Foods		Chicken	Boneless skinless air chilled thighs	3.29			
Giant Eagle	Giant Eagle	Chicken	Split breasts	3.29	2.03 lb	6.68	
Whole Foods		Chicken	Bone in skin on thighs	3.49			organic
Giant Eagle	Nature's Basket	Chicken	Boneless thighs	3.69	1.88 lb	6.94	antibiotic free, may contain up to 5% retained wate
Whole Foods		Chicken	Air chilled whole chicken	3.79			organic
Whole Foods		Chicken	Split breast	3.99			
Whole Foods		Chicken	Family value pack boneless skinless thighs	4.49			
Whole Foods		Chicken	Boneless skinless thighs	4.99			
Whole Foods		Chicken	Split breast	4.99			organic
Whole Foods		Chicken	Boneless thighs value pack	4.99			organic
Giant Eagle	Giant Eagle	Chicken	Breast	4.99	1.06 lb	5.29	
Giant Eagle	Giant Eagle	Chicken	Boneless skinless breasts with rib meat	4.99	2.24 lb	11.18	all natural, minimally processed, no artififical ingredients, no hormones, fresh never frozen, may contain up to one percent retained water, USA
Whole Foods		Chicken	Air chilled boneless skinless thighs	5.99			organic
Giant Eagle	Nature's Basket	Chicken	Thin sliced breast	5.99	1.36 lb	8.15	antibiotic free, may contain up to 5% retained water
Giant Eagle	Nature's Basket	Chicken	Boneless breast	5.99	1.90 lb	11.38	antibiotic free, may contain up to 5% retained water
Whole Foods		Chicken	Boneless skinless breast value pack	6.49			organic
Whole Foods		Chicken	Conventional boneless breast	6.99			

Pork							
Store	Brand	Animal	Cut	Price/quantity	Quantity	Total price	Labels
Whole Foods		Pork	Loin boneless chop center cut	7.99			
Whole Foods		Pork	Mild Italian sausage	6.99			
Whole Foods		Pork	Pork belly	5.99			local
Whole Foods		Pork	Loin boneless roast	7.99			
Whole Foods		Pork	Thin cut boneless chops	6.99			
Whole Foods		Pork	Uncured applewood smoked center cut bacon	7.99			
Whole Foods		Pork	Low sodium bacon	9.98			organic
Giant Eagle	Giant Eagle	Pork	Original sliced bacon	.3/oz	16 oz	4.79	
Giant Eagle	Oscar Mayer	Pork	Bacon thick sliced	.50/oz	12 oz	5.99	naturally hardwood smoked
Giant Eagle	Giant Eagle	Pork	Loin assorted chops	2.29	3.71 lb	8.5	
Giant Eagle	Giant Eagle	Pork	Value pack country style ribs	2.29	4.71 lb	10.79	
Giant Eagle	Sugardale	Pork	Semi boneless whole ham	2.39	13.66 lb	32.65	
Bucher Meat	Bucher	Pork	Picnic shoulder	2.39			
Giant Eagle	Giant Eagle	Pork	Fresh sweet sausage griller	2.99	2.56 lb	7.65	
Giant Eagle	Giant Eagle	Pork	Center cut pork loin rib eye chop value pack	3.29	2.16 lb	7.11	
Giant Eagle	Giant Eagle	Pork	Center cut pork loin porterhouse chop value pack	3.29	2.94 lb	9.67	
Giant Eagle	Giant Eagle	Pork	Smoked hocks	3.29	1.18 lb	3.88	
Giant Eagle	Giant Eagle	Pork	Butt value pack boneless western riblets	3.69	2.73 lb	10.07	
Giant Eagle	Giant Eagle	Pork	Butt blade steaks	3.89	1.26 lb	4.9	
Giant Eagle	Giant Eagle	Pork	Loin value pack boneless sirloin chops	4.49	1.75 lb	7.86	
Giant Eagle	Giant Eagle	Pork	Loin boneless sirloin roast	4.49	4.00 lb	17.96	
Giant Eagle	Giant Eagle	Pork	Boneless ham whole	4.49	7.79 lb	34.98	water added
Giant Eagle	Giant Eagle	Pork	Loin value pack boneless country ribs	5.19	1.94 lb	10.07	
Giant Eagle	Giant Eagle	Pork	Center cut loin rib eye chop	5.49	.94 lb	5.16	
Giant Eagle	Giant Eagle	Pork	Loin boneless country ribs	5.69	.93 lb	5.29	
Giant Eagle	Giant Eagle	Pork	Loin boneless top loin center roast	5.99	2.58 lb	15.45	
Giant Eagle	Giant Eagle	Pork	Top loin value pack America's cut	5.99	2.77 lb	16.59	
Giant Eagle	Giant Eagle	Pork	Loin back ribs	5.99	1.08 lb	6.47	
Giant Eagle	Giant Eagle	Pork	Loin value pack thin boneless center cut chops	6.19	1.41 lb	8.73	
Giant Eagle	Giant Eagle	Pork	Loin boneless center cut chops	6.49	.71 lb	4.61	
Giant Eagle	Giant Eagle	Pork	Loin boneless center cut chops	6.49	1.65 lb	10.71	
Giant Eagle	Giant Eagle	Pork	Loin thin boneless center cut chops	6.69	0.86 lb	5.75	

Appendix 2: Store prices of garden products and final comparison

Cucumbers				
Store	Vegetable	Price/quantity	Quantity	Labels
Whole Food	American cucumber	0.99	each	
Giant Eagle	Cucumber	0.99	each	
Giant Eagle	Seedless cucumber	2.00	each	
Whole Food	Cucumber	2	each	
Whole Food	Seedless cucumber	2.5	each	organic
Giant	Hot house cucumber	2.99	each	organic
Giant Eagle	Pickling cucumber	2.99	lb	

Spinach				
Store	Vegetable	Price/quantity	Quantity	Labels
Whole Foods	Spinach	2.49	bunch	
Giant Eagle	Spinach	2.99	lb	
Whole Foods	Baby spinach	6.37	lb	organic
Giant	Baby spinach	11.41	lb	organic
Whole Foods	Spinach	12.77	lb	organic

Potatoes				
Store	Vegetable	Price/quantity	Quantity	Labels
Giant Eagle	Idaho	0.50	lb	
Giant Eagle	White	0.70	lb	
Whole Foods	Russet	0.99	lb	
Giant Eagle	Red potato	1.00	lb	
Giant Eagle	Restaurant	1.00	lb	
Giant Eagle	Golden Delite	1.00	lb	
Giant Eagle	Russet	1.16	lb	organic
Whole Foods	Gold	1.20	lb	organic
Giant	Yukon	1.20	lb	organic
Whole Foods	Yukon	1.29	each	
Giant Eagle	Yellow	1.33	lb	organic
Giant Eagle	Red potato	1.66	lb	organic
Whole Foods	Yukon Gold	2.00	lb	organic
Whole Foods	Red potato	2.00	lb	organic
Whole Foods	Gourmet Red	2.66	lb	
Whole Foods	Russet	3.98	lb	organic

Celery				
Store	Vegetable	Price/quantity	Quantity	Labels
Whole Foods	Celery	2.49	bunch	organic
Giant Eagle	Celery	3.49	each	organic
Giant Eagle	Celery	2.19	each	

Hot peppers

Store	Vegetable	Price/quantity	Quantity	Labels
Whole Foods	Habanero	10	lb	
Whole Foods	Long hot	4.99	lb	
Whole Foods	Mama's Lil Hungarian Goathorn pepper	9.99	lb	
Giant Eagle	Jalepeno	3.99	lb	
Giant Eagle	Habanero	3.99	lb	
Giant Eagle	Banana	3.99	lb	
Giant Eagle	Anaheim	3.99	lb	

Cherry tomatoes

Store	Vegetable	Price/quantity	Quantity	Labels
Whole Foods	Del cabo cherry gold	2.49	each	
Giant Eagle	Sweet grape	2.50	pt	
Giant Eagle	Grape	2.99	pt	
Giant Eagle	Grape tomatoes	3.99	pt	organic
Whole Foods	Sungold cherry tom	4.99	each	organic
Giant	Grape tomatoes	5.58	pt	organic

Tomatoes

Store	Vegetable	Price/quantity	Quantity	Labels
Giant Eagle	Hydroponic	2.49	lb	
Giant Eagle	Plum	2.49	lb	
Giant Eagle	Stem tomato	2.49	lb	
Whole Foods	Roma	2.50	lb	
Whole Foods	Large greenhouse	3.00	lb	
Whole Foods	Large hydroponic	3.00	lb	
Whole Foods	Red vine tomato	3.00	lb	
Whole Foods	Slicer	3.98	lb	organic
Giant	Tomatoes on the vine	3.99	lb	organic
Giant Eagle	Stem tomato	3.99	lb	organic
Whole Foods	Tomato	5.00	lb	organic

Lettuce

Store	Vegetable	Price/quantity	Quantity	Labels
Giant Eagle	Romaine	2.49	lb	
Giant Eagle	Red leaf	2.49	lb	
Whole Foods	Romaine	2.50	bunch	organic
Whole Foods	Romaine	2.50	4 oz	organic
Whole Foods	Red leaf	2.50	bunch	organic
Whole Foods	Green leaf	2.50		organic
Whole Foods	Boston butter	2.69	each	organic
Whole Foods	Romaine	2.99	each	
Giant	Iceberg	2.99	each	organic
Giant Eagle	Iceberg	2.99	each	organic
Whole Foods	Spring mix	15.96	lb	organic

Bell peppers				
Store	Vegetable	Price/quantity	Quantity	Labels
Giant Eagle	Green pepper	1.99	lb	
Whole Foods	Green pepper	2.00	lb	
Whole Foods	Orange bell	2.00	each	organic
Whole Foods	Red peppers	2.98	lb	
Whole Foods	Red peppers	3.00	lb	
Whole Foods	Green pepper	3.00	lb	organic
Whole Foods	Yellow bell	3.98	lb	
Giant Eagle	Red peppers	3.99	lb	
Whole Foods	Red peppers	4.98	lb	organic
Whole Foods	Rainbow peppers	4.99	each	
Whole Foods	Yellow bell	5.98	lb	organic
Giant Eagle	Red peppers	5.99	lb	organic
Giant	Green pepper	7.98	lb	organic
Giant	Red peppers	9.98	lb	organic

Onions				
Store	Vegetable	Price/quantity	Quantity	Labels
Whole Foods	Spanish	0.99	lb	
Whole Foods	Bag of yellow	1.00	lb	
Giant Eagle	Onions	1.29	lb	
Whole Foods	Yellow onion bag	1.33	lb	organic
Giant	Yellow	1.33	lb	organic
Giant Eagle	Yellow onions	1.33	lb	organic
Whole Foods	Sweet onion	1.49	lb	
Whole Foods	Vidalia	1.49	each	organic
Whole Foods	Yellow onion	1.69	lb	organic
Whole Foods	Red onion	1.99	lb	organic
Whole Foods	Yellow onion	1.99	each	
Giant Eagle	White onion	1.99	lb	
Giant Eagle	Red onion	1.99	lb	
Giant Eagle	Red onion	2.00	lb	
Giant Eagle	White onion	2.00	lb	
Giant Eagle	Peeled onions	2.49	lb	
Whole Foods	Yellow onion	3.99	lb	organic

Kale/Chard				
Store	Vegetable	Price/quantity	Quantity	Labels
Giant Eagle	Kale	0.99	lb	
Giant	Red swiss chard	2.49	lb	organic
Whole Foods	Kale	2.50	bunch	organic
Whole Foods	Red swiss chard	2.50	bunch	organic
Whole Foods	Michigan kale	2.50	bunch	organic
Whole Foods	Lacinto kale	2.99	bunch	organic
Whole Foods	Kale	2.99	bunch	
Whole Foods	Red kale	2.99	bunch	organic
Giant	Kale	2.99	lb	organic
Giant Eagle	Red swiss chard	2.99	each	organic
Giant Eagle	Kale	2.99	lb	organic

Money saved							
Vegetable	**Most expensive**	**Least expensive**	**Most comparable**	**Total money saved**		Total produced	
Tomatoes	5.00	2.49	3.98	398		Lettuce	50
Onions	3.99	0.99	1.84	276		Onions	150
Lettuce	15.96	2.49	2.99	149.5		Celery	20
Potatoes	3.98	0.50	2.00	120		Kale/chard	20
Cucumbers	2.99	0.99	2.50	100		Spinach	3
Kale/Chard	0.99	2.99	2.75	55		Potatoes	60
Cherry tomatoes	5.58	2.49	4.99	49.9		Cucumbers	40
Celery	3.49	2.19	2.49	49.8		Tomatoes	100
Bell peppers	9.98	1.99	3.99	39.9		Cherry tomatoes	10
Hot peppers	10.00	3.99	3.99	39.9		Bell peppers	10
Spinach	12.77	2.49	6.37	19.11		Hot peppers	10
Total money saved				**1297.11**			

Garden	
Total money saved	1297.11
Total money spent	200.95
Profit/loss	1096.16

Appendix 3: Animal product comparisons

Egg comparison

October				November				December					
Cheapest - Hillendale Eggs													
Price/egg	Quantity	total		Price/egg	Quantity	total		Price/egg	Quantity	total		Total money saved	Total eggs
0.19	250.00	46.67		0.19	300.00	56.00		0.19	217.00	40.51		143.17	767.00
Most expensive - Organic valley													
Price/egg	Quantity	total		Price/egg	Quantity	total		Price/egg	Quantity	total			
0.57	250.00	141.25		0.57	300.00	169.50		0.57	217.00	122.61		433.36	
Davidson's Safest Choice													
Price/egg	Quantity	total		Price/egg	Quantity	total		Price/egg	Quantity	total			
0.31	250.00	76.88		0.31	300.00	92.25		0.31	217.00	66.73		235.85	

Goat meat comparison

Most expensive	Price per pound	Money saved per goat	Money saved total
	11.99	359.70	719.40
Cheapest	4.39	131.70	263.40
Most comparable	8.99	269.70	539.40

Turkey comparison

Whole birds	15.00		sell 10	4 dollars per pound		
			18 pound bird			
			180 lbs of meat	180 * $4 = $720	720+(60*5) = 1020	
				Sold	Not purchased	
			Money saved	720	300	
						We pay 60 dollars for whole bird for Thanksgiving

Pork comparison

Cut	Quantity	Weight	Total weight
Picnic shoulder	2.00	6	12
Boston butt	4.00	2.5	10
Ham hock	4.00	1	4
Chops	15.00	0.25	3.75
Center loin roast	1.00	6	6
Bacon	1.00	6	6
Ribs	2.00	5	10
Ham	4.00	8	32
Sausage (lbs)	1.00	10	10
Total			93.75

Most expensive	Price/lb	Lbs	Total money saved
Picnic shoulder	2.39	12.00	28.68
Boston butt	3.89	10.00	38.90
Ham hock	3.29	4.00	13.16
Chops	6.99	3.75	26.21
Center loin roast	7.99	6.00	47.94
Bacon	7.99	6.00	47.94
Ribs	5.99	10.00	59.90
Ham	7.99	32.00	255.68
Sausage (lbs)	6.99	10.00	69.90
Total			588.31

Most comparable	Price/lb	Lbs	Total money saved
Picnic shoulder	2.39	12.00	28.68
Boston butt	3.89	10.00	38.90
Ham hock	3.29	4.00	13.16
Chops	6.99	3.75	26.21
Center loin roast	7.99	6.00	47.94
Bacon	7.99	6.00	47.94
Ribs	5.99	10.00	59.90
Ham	7.99	32.00	255.68
Sausage (lbs)	6.99	10.00	69.90
Total			588.31

Cheapest	Price/lb	Lbs	Total money saved
Picnic shoulder	2.39	12.00	28.68
Boston butt	3.69	10.00	36.90
Ham hock	3.29	4.00	13.16
Chops	2.29	3.75	8.59
Center loin roast	4.49	6.00	26.94
Bacon	0.30	96.00	28.80
Ribs	2.29	10.00	22.90
Ham	2.39	32.00	76.48
Sausage (lbs)	2.99	10.00	29.90
Total			272.35

Milk comparison

Total gallons produced
759.00

Most expensive	Price per oz	Price per gallon	Total money saved
	0.083	10.62	8063.62
Least expensive	0.032	4.1	3108.86
Most comparable	0.078	9.98	7577.86

Chicken meat comparison						
Most expensive	Price/lb	Number of parts	Weight of parts (lbs)	Total if calculated with weight		
Thigh	4.99	90	67.5	336.83		
Wing	2.69	90	22.5	60.53		Thigh
Breast	6.99	90	67.5	471.83		Breast
Drumstick	2.99	90	45	134.55		Leg
Whole bird	3.79	15	75	284.25		Wing
Total money saved				1287.98		Total pounds of chicken meat
Cheapest						
Thigh	1.69	90	67.5	114.08		
Wing	2.69	90	22.5	60.53		
Breast	2.69	90	67.5	181.58		
Drumstick	1.69	90	45	76.05		
Whole bird	1.59	15	75	119.25		
Total money saved				551.48		
Most comparable						
Thigh	3.49	90	67.5	235.58		
Wing	2.69	90	22.5	60.53		
Breast	4.99	90	67.5	336.83		
Drumstick	2.99	90	45	134.55		
Whole bird	3.79	15	75	284.25		
Total money saved				1051.73		

Appendix 4: Time and total money saved for garden and animals

Time						
Chickens		Goat	59.44%		Animal hours	Garden hours
133.63		Chicken	13.96%		957.17	150
		Turkey	11.92%			
Goats		Pig	14.68%		Total time	1107.07
568.92						
Turkeys						
114.05						
Pigs						
140.47						
Total						
957.07						

Total money					
Type of Animal	**Total Money Spent**	**Money Spent per Individual Animal**	**Total Money Saved**	**Money Saved per Individual Animal**	**Profit/Loss**
Goats	2819.49	201.39	7841.26	603.17	5021.77
Chickens	984.68	13.13	1073.83	14.32	89.15
Turkeys	591.78	39.45	1020.00	68.00	428.22
Pigs	1040.1	173.34	1269.74	211.62	229.64
Total	5436.05	427.31	11204.83	102.80	5768.78
Goat milk	7577.86		Chicken meat	837.98	
Goat meat	263.40		Chicken eggs	235.85	
Total	7841.26		Total	1073.83	
Goats	69.98%				
Chickens	9.58%				
Turkeys	9.10%				
Pigs	11.33%				

Appendix 5: Animal and garden inputs and outputs

Garden

	January			February			March			April			May			June		
Inputs	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month
Seeds	2.75	35.00	96.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potatoes	11.75	6.00	70.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	2.00	6.60	3.45	2.00	6.90	3.42	1.00	3.42
Time	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	3.00	0.00	0.00	10.00	0.00	0.00	10.00	0.00
Total			166.75			0.00			0.00			6.60			6.90			3.42
Outputs																		
Vegetables																		
Celery	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spinach	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potatoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell peppers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry tomatoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tomatoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cucumbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00
Hot peppers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kale/Chard	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Onions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lettuce	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Garden cont.

	July			August			September			October			November			December			
Inputs	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month	Cost/unit	Quantity	Total cost/month	
Seeds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Potatoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Manure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Gas	3.50	1.00	3.50	3.53	1.00	3.53	3.59	1.00	3.59	3.33	2.00	6.66	0.00	0.00	0.00	0.00	0.00	0.00	
Time	0.00	30.00	0.00	0.00	30.00	0.00	0.00	30.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Overall total
Total			3.50			3.53			3.59			6.66			0.00			0.00	200.95
Outputs																			
Vegetables																			
Celery	0.00	0.00	0.00	0.00	10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Spinach	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Potatoes	0.00	10.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bell peppers	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Cherry tomatoes	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tomatoes	0.00	0.00	0.00	0.00	20.00	0.00	0.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Cucumbers	0.00	20.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Hot peppers	0.00	0.00	0.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Kale/Chard	0.00	5.00	0.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Onions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Lettuce	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Goats

	January			February			March			April			May			June		
Inputs	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month
Grain (50lb bag)																		
Dairy pellets	12.69	5.00	63.45	12.69	5.00	63.45	12.69	5.00	63.45	12.69	5.00	63.45	12.69	5.00	63.45	12.69	5.00	63.45
Coarse 16	11.79	13.00	153.27	11.79	12.00	141.48	11.79	10.00	117.90	11.79	6.00	70.74	11.79	6.00	70.74	11.79	6.00	70.74
Hay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water (gal)	0.00	217.00	0.00	0.00	217.00	0.00	0.00	217.00	0.00	0.00	217.00	0.00	0.00	217.00	0.00	0.00	217.00	0.00
Bedding (bale)	4.00	2.00	8.00	4.00	2.00	8.00	4.00	3.00	12.00	4.00	4.00	16.00	4.00	3.00	12.00	4.00	3.00	12.00
Gas (gal)	3.50	1.24	4.34	3.60	2.47	8.89	3.55	1.24	4.40	3.30	2.47	8.15	3.45	1.49	5.14	3.42	1.24	4.24
Energy (kWh)																		
Outside lights	0.08	20.93	1.71	0.08	20.93	1.71	0.08	20.93	1.71	0.08	27.00	2.21	0.08	27.00	2.21	0.08	13.50	1.10
Garage lights	0.08	9.07	0.74	0.08	9.07	0.74	0.08	9.07	0.74	0.08	11.70	0.96	0.08	11.70	0.94	0.08	5.85	0.48
Time (hr)	0.00	31.00	0.00	0.00	28.00	0.00	0.00	46.00	0.00	0.00	34.00	0.00	0.00	105.92	0.00	0.00	62.00	0.00
Total			231.51			224.27			200.20			161.50			154.47			152.00
Outputs																		
Milk (gal)	0.00	37.00	0.00	0.00	33.00	0.00	0.00	37.00	0.00	0.00	36.00	0.00	0.00	37.00	0.00		130.00	0.00
Meat																		
Legs								2.00										
Ground meat (lbs)								30.00										
Ribs								2.00										

Goats cont.

	July			August			September			October			November			December			
Inputs	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	
Grain (50lb bag)																			
Dairy pellets	12.69	5.00	63.45	12.69	5.00	63.45	12.69	5.00	63.45	12.69	5.00	63.45	12.69	5.00	63.45	12.69	5.00	63.45	
Coarse 16	11.79	11.00	129.69	11.79	14.00	165.06	11.79	14.00	165.06	11.79	14.00	165.06	11.79	14.00	165.06	11.79	14.00	165.06	
Hay	0.00	0.00	0.00	0.00	0.00	0.00	5.00	50.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Water (gal)	0.00	217.00	0.00	0.00	217.00	0.00	0.00	217.00	0.00	0.00	217.00	0.00	0.00	217.00	0.00	0.00	217.00	0.00	
Bedding (bale)	4.00	2.00	8.00	4.00	2.00	8.00	4.00	3.00	12.00	4.00	2.00	8.00	4.00	2.00	8.00	4.00	2.00	8.00	
Gas (gal)	3.50	2.47	8.65	3.53	1.24	4.36	3.59	2.47	8.87	3.33	1.24	4.12	3.28	2.47	8.11	3.40	1.24	4.20	
Energy (kWh)																			
Outside lights	0.08	22.50	1.84	0.08	22.50	1.84	0.08	33.75	2.76	0.08	27.00	2.21	0.08	31.50	2.57	0.08	31.50	2.57	
Garage lights	0.08	9.75	0.80	0.08	9.75	0.80	0.08	11.70	0.96	0.08	11.70	0.96	0.08	13.65	1.12	0.08	13.65	1.12	
Time (hr)	0.00	60.00	0.00	0.00	62.00	0.00	0.00	48.00	0.00	0.00	31.00	0.00	0.00	30.00	0.00	0.00	31.00	0.00	Overall total
Total			212.43			243.51			503.10			243.79			248.31			244.40	2819.49
Outputs																			
Milk (gal)		93.00	0.00		62.00	0.00		60.00	0.00		62.00	0.00		60.00	0.00		62.00	0.00	
Meat																			
Legs																			
Ground meat (lbs)																			
Ribs																			

Chickens

	May			June			July			August			September			October			November			December			
Inputs	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	Cost/unit	Quantity	Total cost /month	
Grain (50lb bag)																									
Medicated chick	15.79	2.00	31.58	15.79	2.00	31.58	15.79	2.00	31.58	15.79	0.00	0.00	15.79	0.00	0.00	15.79	0.00	0.00	15.79	0.00	0.00	15.79	0.00	0.00	
Fat and finish	14.49	0.00	0.00	14.49	0.00	0.00	14.49	7.00	101.43	14.49	7.00	101.43	14.49	4.00	57.96	14.49	0.00	0.00	14.49	0.00	0.00	14.49	0.00	0.00	
Layer pellets	12.79	0.00	0.00	12.79	0.00	0.00	12.79	2.00	25.58	12.79	4.00	51.16	12.79	4.00	51.16	12.79	4.00	51.16	12.79	4.00	51.16	12.79	4.00	51.16	
Scratch	10.19	0.00	0.00	10.19	0.00	0.00	10.19	0.00	0.00	10.19	1.00	10.19	10.19	1.00	10.19	10.19	1.00	10.19	10.19	1.00	10.19	10.19	1.00	10.19	
Water (gal)	0.00	31.00	0.00	0.00	75.00	0.00	0.00	386.00	0.00	0.00	303.00	0.00	0.00	1225.00	0.00	0.00	155.00	0.00	0.00	75.00	0.00	0.00	52.00	0.00	
Bedding (bale)	6.49	2.00	12.98	6.49	4.00	25.96	6.49	2.00	12.98	6.49	1.00	6.49	6.49	1.00	6.49	6.49	1.00	6.49	6.49	1.00	6.49	6.49	1.00	6.49	
Chicks	1.49	50.00	70.00	2.99	15.00	44.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Shipping			20.74			17.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Gas (gal)	3.45	1.49	5.14	3.42	1.24	4.23	3.50	2.47	8.65	3.53	1.24	4.36	3.59	2.47	8.87	3.33	1.24	4.12	3.28	2.47	8.11	3.40	1.24	4.20	
Energy (kWh)																									
Outside lights	0.08	27.00	2.21	0.08	13.50	1.10	0.08	22.50	1.84	0.08	22.50	1.84	0.08	33.75	2.76	0.08	27.00	2.21	0.08	31.50	2.57	0.08	31.50	2.57	
Heating lamps	0.08	234.00	19.12	0.08	234.00	19.12	0.08	0.00	0.00	0.08	0.00	0.00	0.08	0.00	0.00	0.08	0.00	0.00	0.08	0.00	0.00	0.08	0.00	0.00	
Garage lights	0.08	11.70	0.96	0.08	5.85	0.48	0.08	9.75	0.80	0.08	11.70	0.96	0.08	11.70	0.96	0.08	11.70	0.96	0.08	13.65	1.12	0.08		0.00	
Time (hour)	0.00	14.91	0.00	0.00	12.50	0.00	0.00	13.16	0.00	0.00	16.91	0.00	0.00	16.50	0.00	0.00	12.91	0.00	0.00	12.50	0.00	0.00	12.91	0.00	Overall total
Total			168.72			140.24			397.28			150.69			138.39			75.12			79.64			74.62	984.68
Outputs																									
Eggs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250	0	0	300	0	0	217	0	
Meat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thigh	0	0	0	0	0	0	0	0	0	0	0	0	0	90	0	0	0	0	0	0	0	0	0	0	
Wing	0	0	0	0	0	0	0	0	0	0	0	0	0	90	0	0	0	0	0	0	0	0	0	0	
Breast	0	0	0	0	0	0	0	0	0	0	0	0	0	90	0	0	0	0	0	0	0	0	0	0	
Drumstick	0	0	0	0	0	0	0	0	0	0	0	0	0	90	0	0	0	0	0	0	0	0	0	0	
Whole bird	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	0	0	0	0	0	0	0	0	0	

Turkeys

	May			June			July			August		
Inputs	**Cost/unit**	**Quantity**	**Total cost/ month**	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month
Grain (50lb bag)												
Non-medicated chick feed	14.79	1.00	14.79	14.79	2.00	20.58	14.79	0.00	0.00	14.79	0.00	0.00
Fat and finish	14.49	0.00	0.00	14.49	0.00	0.00	14.49	3.00	43.47	14.49	3.00	43.47
Water (gal)	0.00	15.50	0.00	0.00	30.00	0.00	0.00	77.50	0.00	0.00	77.50	0.00
Bedding	6.49	1.00	6.49	6.49	1.00	6.49	6.49	0.00	0.00	6.49	0.00	0.00
Chicks	10.49	15.00	157.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shipping	0.00	0.00	20.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas	3.45	1.49	5.14	3.42	1.24	4.23	3.50	2.47	8.65	3.53	1.24	4.36
Energy												
Outside lights	0.08	27.00	2.21	0.08	13.50	1.10	0.08	22.50	1.84	0.08	22.50	1.84
Heating lamps	0.08	234.00	19.12	0.08	234.00	19.12	0.08	0.00	0.00	0.08	0.00	0.00
Garage lights	0.08	11.70	0.96	0.08	5.85	0.48	0.08	9.75	0.80	0.08	9.75	0.80
Time	0.00	14.91	0.00	0.00	12.50	0.00	0.00	12.91	0.00	0.00	12.91	0.00
Total			226.62			61.00			54.76			50.47
Outputs												
Meat												
Whole birds												
Wings												
Thighs												
Breasts												
Drumsticks												

Turkeys cont.													
	September			October			November			December			
Inputs	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month	
Grain (50lb bag)													
Non-medicated chick feed	14.79	0.00	0.00	14.79	0.00	0.00	14.79	0.00	0.00	14.79	0.00	0.00	
Fat and finish	14.49	4.00	57.96	14.49	5.00	72.45	14.49	2.00	28.98	14.49	0.00	0.00	
Water (gal)	0.00	77.50	0.00	0.00	77.50	0.00	0.00	39.00	0.00	0.00	0.00	0.00	
Bedding	6.49	0.00	0.00	6.49	0.00	0.00	6.49	0.00	0.00	6.49	0.00	0.00	
Chicks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Shipping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Gas	3.59	2.47	8.87	3.33	1.24	4.12	3.28	2.47	8.11	3.40	1.24	4.20	
Energy													
Outside lights	0.08	33.75	2.76	0.08	27.00	2.21	0.08	31.50	2.57	0.08	31.50	2.57	
Heating lamps	0.08	0.00	0.00	0.08	0.00	0.00	0.08	0.00	0.00	0.08	0.00	0.00	
Garage lights	0.08	11.70	0.96	0.08	11.70	0.96	0.08	13.65	1.12	0.08	13.65	1.12	
Time	0.00	12.50	0.00	0.00	12.91	0.00	0.00	22.50	0.00	0.00	12.91	0.00	Overall total
Total			70.55			79.73			40.78			7.89	591.78
Outputs													
Meat													
Whole birds								13.00					
Wings								4.00					
Thighs								4.00					
Breasts								8.00					
Drumsticks								4.00					

Pigs															
	January			February			March			April			August		
Inputs	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month
Grain															
Starter mash	13.89	0.00	0.00	13.89	0.00	0.00	13.89	0.00	0.00	13.89	0.00	0.00	13.89	6.00	83.34
Pig and Sow	11.09	4.00	44.36	11.09	4.00	44.36	11.09	4.00	44.36	11.09	4.00	44.36	11.09	0.00	0.00
Corn	8.59	2.00	17.18	8.59	2.00	17.18	8.59	2.00	17.18	8.59	2.00	17.18	9.79	2.00	19.58
Water	0.00	620.00	0.00	0.00	560.00	0.00	0.00	620.00	0.00	0.00	900.00	0.00	0.00	620.00	0.00
Bedding	6.49	0.00	0.00	6.49		0.00	6.49		0.00	6.49		0.00	6.49	0.00	0.00
Piglets															
Male	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	100.00	200.00
Female	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	70.00	70.00
Gas (gal)	3.50	1.24	4.34	3.60	2.47	8.89	3.55	1.24	4.40	3.30	5.86	19.33	3.53	14.57	51.42
Energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Outside lights	0.08	31.50	2.57	0.08	31.50	2.57	0.08	27.00	2.21	0.08	27.00	2.21	0.08	22.50	1.84
Garage lights	0.08	13.65	1.12	0.08	13.65	1.12	0.08	11.70	0.96	0.08	11.70	0.96	0.08	9.75	0.80
Time	0.00	12.91	0.00	0.00	11.67	0.00	0.00	12.91	0.00	0.00	37.25	0.00	0.00	14.91	0.00
Total			69.57			74.12			69.10			84.03			426.97
Outputs															0.00
Meat															0.00
Picnic shoulder											2.00				
Boston butt											4.00				
Ham hock											4.00				
Chops											15.00				
Center loin roast											1.00				
Bacon											1.00				
Ribs											2.00				
Ham											4.00				
Sausage (lbs)											10.00				

Pigs cont.														
	September			October			November			December				
Inputs	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month	Cost/unit	Quantity	Total cost/ month		
Grain														
Starter mash	13.89	3.00	41.67	13.89	0.00	0.00	13.89	0.00	0.00	13.89	0.00	0.00		
Pig and Sow	11.09	3.00	33.27	11.09	4.00	44.36	11.09	4.00	44.36	11.09	4.00	44.36		
Corn	8.59	2.00	17.18	8.59	2.00	17.18	8.59	2.00	17.18	8.59	2.00	17.18		
Water	0.00	600.00	0.00	0.00	620.00	0.00	0.00	600.00	0.00	0.00	620.00	0.00		
Bedding	6.49	0.00	0.00	6.49	0.00	0.00	6.49	0.00	0.00	6.49	0.00	0.00		
Piglets														
Male	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Female	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Gas (gal)	3.59	2.47	8.87	3.33	1.24	4.12	3.28	2.47	8.11	3.40	1.24	4.20		
Energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Outside lights	0.08	33.75	2.76	0.08	27.00	2.21	0.08	31.50	2.57	0.08	31.50	2.57		
Garage lights	0.08	11.70	0.96	0.08	11.70	0.96	0.08	13.65	1.12	0.08	13.65	1.12		
Time	0.00	12.50	0.00	0.00	12.91	0.00	0.00	12.50	0.00	0.00	12.91	0.00	Overall Total	
Total			104.71			68.82			73.34			69.43	1040.09	
Outputs														
Meat														
Picnic shoulder														
Boston butt														
Ham hock														
Chops														
Center loin roast														
Bacon														
Ribs														
Ham														
Sausage (lbs)														