

**The Economic Benefits of Organic Farming
on a Dairy Farm in Thurston County, Washington**

by

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This Thesis for the Master of Environmental Studies Degree

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ABSTRACT

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The new millennium has brought a growing, global interest in the consumption of organically grown food accompanied by an increasing demand for growers to shift from traditional crop production to certified organic crop production. Many factors have contributed to these growing interests, including changing attitudes about food, new trends in the marketing and merchandising of food products, an explosion in media attention paid to more natural diets and lifestyles, mounting costs for treating illness and disease, and even increasing incidents of congenital conditions in newborns and young children. But can growers meet these new demands? How do they go about making those shifts, and, once they do, will they enjoy economic benefits from the changes they've implemented?

This thesis begins with an historical overview of chemical-free food production, with specific references to increasing public awareness and market opportunities. It also provides a basic introduction to resources, agricultural organizations, and regulatory bodies that provide a structural framework for the organic growing community. A discussion of the organic certification process follows, with a step-by-step 'road map' for obtaining certification, specifically in the state of Washington. It continues with an in-depth, transitional template that can be followed by growers who wish to shift from traditional crop production to certified organic farming. It emphasizes the importance of planning, goal-setting, and self-educating in making the transition a successful one.

The thesis then presents a detailed case study involving a family dairy farm, located in Thurston County, Washington, which follows the transitional template to introduce organic farming methods, and then shares its results. Based on the case study, the work concludes that there can be distinct economic benefits to growing organic crops. It also makes specific recommendations to those who are committed to reducing and/or eliminating the use of chemicals in their food production, for both today's world and as we move into the future.

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Heart-filled thanks to my great-grandparents, Joseph and Magdalena Wickie, who immigrated to Washington State from Switzerland more than a century ago and worked tirelessly each day to manage dairy

animals, recycle dairy by-products, and be good stewards of the land. Their practices on the farm inspired me to continue those practices, and adapt additional methods of recycling and soil management to help ensure sustainability and encourage environmentally friendly practices.

A very special thanks to Carla O'Neill, my wife and business partner, for constantly making me think, for always challenging me to set the bar higher, and for her patience in allowing me to take time out of our lives to pursue a graduate degree and write this document. I also appreciate the inspiration that our three children have provided with the questions they've asked and ideas they've offered as they have grown in knowledge, wisdom and understanding. Stephanie, Melissa and Joseph, you are my three best reasons to remain healthy and protect the planet.

This paper has benefited me in countless ways, and it is my personal hope that others will benefit from the work and enjoy the many potential benefits of organic farming. Please read, enjoy, learn and live healthy!

INTRODUCTION

A family dairy farm, a one hundred-year tradition of sustainable farming practices, and a keen personal interest in improving the health of people and the planet have been the major inspiration for this thesis about growing crops for human and animal consumption using organic practices. This work was conceived as, and is intended to be, a digestible, reader-friendly introduction to the history, basic principles, regulatory guidelines, and environmental benefits associated with organic farming. It is also designed to serve as a template for conventional growers who may be considering making the transition to organic crop production. Its primary purpose is to demonstrate that organic crops, when grown using a methodical and well-planned approach, can produce definite economic benefits.

While the resulting profitability is a sound reason for growing crops using organic methods, it is of course not the only reason. People and the environment have much to gain if more of our foods are grown using methods that do not threaten our health and well-being but instead, promote and enhance it.

It is true: To grow organic crops, there is need for more intense management and labor, thus raising production costs. However, in this

thesis, I will demonstrate the economic advantages of growing and marketing organic products.

We will begin on a personal note in the Preface and Family History section, with a bit of background regarding my own family members, whose use of natural growing techniques and recycling practices made them somewhat ahead of their time.

Chapter One will explore the origins and growth of organic crop production. We will meet the pioneers whose early research studies and experiments shaped today's culture of organic farming. We also will become familiar with the growing global awareness of organic farming and its benefits, and the organizations and regulatory bodies which serve to ensure the integrity of organic growing.

Chapter Two will describe in detail the process of obtaining organic certification in the state of Washington. Included will be the various steps required as well as specific contact information for growers interested in pursuing certification.

In Chapter Three, we will present a comprehensive 'road map' to making a transition from conventional to organic crop production. We will be introduced to today's leading organic growers and learn their specific recommendations for making the transition a successful one.

Finally, Chapter Four will take us through an actual case study involving a transition implemented on a dairy farm located in Thurston

County, Washington. A detailed business plan will compare the expenses and revenues that can be anticipated in making the transition.

It is my goal—and my hope—that the following pages will demonstrate that there are definite economic, social, and health benefits to growing organic crops, and will further inspire others to do the same.

PREFACE AND FAMILY HISTORY

My interest in farming and agricultural by-product management is rooted in the history of my father's family, beginning with my great-grandparents, Joseph and Magdalena Wickie, who were immigrant dairy farmers from Switzerland. Shortly after arriving in this country in 1893, Joseph and Magdalena set to work, building a small dairy farm off Yelm Highway in what is now the city of Tumwater in Thurston County, Washington. They would own and operate that farm from 1896 until 1958, receiving the 1955 Dairy Farmer of the Year Award from the Washington State Dairy Products Commission (Knight, 1955).

Primary activities on the Wickies' farm centered around the raising and milking of Jersey cows. They grew and harvested oats, grass, and corn for animal feed as well as vegetables, poultry, and additional grains for family consumption. They fertilized their crops with by-products (manure) from the dairy cows. Ahead of their time, the Wickies were demonstrating how by-product management and recycling not only made optimal use of their resources and greatly reduced waste but also enabled a family farm to be self-sustaining.

Soon after starting their farm, Joseph and Magdalena made the acquaintance of Leopold Schmidt, a German immigrant who had brought his knowledge and interest in beer making to this country. The

artesian water in southwestern Washington had attracted Leopold to this region, and he had built the Capital Brewing Company in Tumwater in the same year the Wickies began farming. Joseph Wickie had long ago learned that a by-product of the beer manufacturing process known as brewer's grain or "malt" could be fed to dairy cows, and he approached Leopold Schmidt with his idea. He would, in essence, help Leopold by removing these materials from the brewery and taking them to his farm. As the newly-named Olympia Brewing Company expanded and increased its beer production, it produced more malt, which was eagerly hauled away and utilized by the Wickie family. They fed it to their own animals and even began distributing it to other dairy farmers in Washington State.

When Prohibition came to Washington State in 1916 and temporarily forced the Schmidt family to abandon brewing operations, the Wickie family, whose own farm had expanded considerably, needed to replace the brewing by-products they had been using with alternate and additional sources of nutritious feed for their dairy cows. Increasing corn and grass production was the answer.

Meanwhile, the Wickies' daughter, Marie, had married William "Bill" O'Neill, a grower of animal feed who had been cultivating his family's land not far from the Wickie farm. With the repeal of

Prohibition in April, 1933, when brewery by-products were once again available, Leopold Schmidt's son, Peter, asked Joseph Wickie if he could again make use of the malt. The family also had learned by that time that hop leaves, another by-product of the beer manufacturing process, was an effective material to be used for amending, or improving the growing capabilities of the sandy soils in Thurston County. Wanting to support his son-in-law's efforts, Joseph instead offered the opportunity to Bill O'Neill. Continuing his father-in-law's service to the brewery by removing its by-products, O'Neill launched the next generation of by-product utilization and resource conservation.

Throughout the next fifty years, Bill O'Neill and, eventually, his son Charles—my father—would remove malt and hops from a number of other northwest breweries and distribute them to dairy farms throughout Washington and Oregon. Some of those farms had excess manure available, which my dad gladly removed and brought to Thurston County to amend soil. It was at that time that home gardening enthusiasts began amending their soils with manure and hops, giving my family an opportunity to market those materials on a wholesale *and* retail level.

In 1958, my father purchased the Wickie farm for the purpose of continuing its dairy operations and the raising of crops for dairy feed. He also continued using the brewery's malt to feed his cows and the hops and dairy manure to amend the soils for crop production. He would eventually sell the farm in 1968 and focus his business on transport, re-use, and recycling.

Having been schooled by my father through dinner table conversations about land conservation and by-product utilization, it was no surprise that when the time came for me to participate in the family business, I continued to implement these practices of reuse, recycling, and responsible land stewardship with fresh enthusiasm.

After graduating with an accounting degree from the University of Portland in 1972, I had served in the United States Air Force and then pursued a career in transportation. I had seen this as a natural extension of the agricultural by-products distribution and delivery business by which my family was still making a living. Five years had passed, during which I primarily worked in the shipping industry in the San Francisco/Oakland area. However, a deep-rooted interest in agriculture and by-product recycling coupled with a desire to be a part of my family's business led me back to Thurston County in 1978.

My initial role was to expand the by-product transportation, re-use, and recycling services we were offering. An additional challenge was to find a substitute material when the Olympia Brewing Company eliminated the hop leaves from their beer recipe. We found it in mushroom compost from Ostrom's mushroom plant in Lacey, Washington, and used it in much the same way we had previously utilized the hops. We began to find several additional uses for our manure and compost mixtures, including landscaping in lawns and gardens. Now, we had another material we could market to *residential* consumers.

In 1980, while still in the transport business, I established a new landscape supply company which would bring these soil amendments and mixes to the public. Great Western Supply also sold rock and bark products. Customers came from Thurston, Pierce, Grays Harbor, and Lewis counties. Additionally, staff at Great Western Supply offered information to its customers regarding the various regional soil types and amendments available for gardeners and landscapers.

As luck would have it, our business property included an abandoned barn, which stood 500 feet down the road from Great Western Supply. Now running the businesses on my own but joined by my wife, Carla, I had a physical space from which we could sell

wholesale and retail plant material to our customers as well. The Barn Nursery began in 1987, complementing the services we provided at Great Western Supply.

Throughout these years, we had continued serving the brewery by removing their malt by-product. The brewing business and facility were now owned by the Miller Brewing Company. However, in January of 2003, Miller announced that the entire operation was shutting down, and a chapter closed in the history of the Olympia community. The end of the brewery also marked the end of my family's service to the facility.

We now embarked on identifying new sources of feed for dairy cows in place of the malt. Furthermore, my interest in recycling and re-using by-products had not diminished. As environmental issues had become a critical global concern, we were committed more than ever to encouraging sustainability and demonstrating quality stewardship of our soil.

By this time, I had been leasing some cropland on the Black River Ranch, a dairy farm in south Thurston County. The dairy and land provided a variety of feed for its dairy animals plus many of the necessary components for the next phase of recycling and by-product management.

After many years of service to the Tumwater brewing facility and providing malt by-products to more than seventy local dairy farms, my family had built a network of customers interested in crops grown in an *organic* manner, specifically those which have been raised in soil amended by natural products as opposed to chemical additives. Seeing a growing trend and increasing demand, we began to educate ourselves in organic growing methods, learning the procedures required by the Washington State Department of Agriculture in order to label and sell our crops as 'certified organic.'

Meanwhile, back at Great Western Supply, we were now blending soils and marketing a variety of soil mixes including a certified organic soil mix. We decided our next logical step would be to bring organic nursery stock to the public consumer at The Barn Nursery located next door. We also sold landscape supplies, tools, and educational materials. Gardeners and landscapers now had a reliable, local source of organic soils, with an adjacent retail and wholesale plant business. Those complementary businesses continue to thrive today.

I set out on the research for this document in order to determine whether or not large scale growers can enjoy economic benefits from raising certified organic crops in the state of Washington. My other

objective has been to enhance and share my own knowledge of organic crop production in order to encourage good stewardship of the land and provide healthy food sources for both human and animal consumption. This work has excited me and I hope that readers will become as enthusiastic about the raising of organic crops and nursery stock as I have as a result of this research.

CHAPTER ONE

THE ORIGINS AND GROWTH OF ORGANIC AGRICULTURE

Introduction

There is a growing global awareness of the harmful effects of chemicals used in food production for both human and animal consumption. According to the United States Environmental Protection Agency (2011), food growers in the U.S. spend billions of dollars annually on chemical pesticides, insecticides, herbicides, and fungicides on their crops and in their pastures to boost growth, reduce or eliminate insect infestation, decrease unwanted vegetation, and even enhance appearance for marketability. But more and more, as people are becoming aware that these chemicals are harmful to humans, animals, and the environment, they are questioning what they're eating. Increasing food allergies, for example, are prompting people to reconsider their diets and seek foods that have been grown without chemicals and are safer for themselves and their families.

At the same time, new lifestyle trends are leading us away from a culture of high fat, high sugar, and artificial preservatives toward a healthier attitude regarding the products we consume. Concerning food specifically, we are seeing an increase in the availability of whole

and natural foods, particularly among younger populations who are concerned about the future of the environment, as well as health-conscious, aging baby boomers who are seeking new ways to remain youthful. In their 2011 publication *Farming Systems Trial*, the Rodale Institute reported that organic food and beverage sales, which were less than \$1 billion in 1990, had reached nearly \$27 billion by 2010. Today's popular 'slow food' movement, which promotes a safer, more mindful, and more participatory approach to food consumption, is an example of a trend which avoids overly processed foods in favor of foods that are prepared more naturally, do not harm the environment, and are healthy for the consumer.

Organic food production addresses both of these issues. By definition, it is the raising of crops and livestock using natural techniques such as amending soil, composting, and rotating crops. It limits or excludes the use of any synthetic or chemical pesticides, fertilizers, or additives. It is internationally regulated and based primarily on the standards established by the International Federation of Organic Agriculture Movements (IFOAM), which defines the objective of organic farming as follows:

Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to

local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved (Definition of Organic Farming, www.ifoam.org/growing_organic/definitions/doa/index.html).

Organic agriculture was conceived in the early part of the twentieth century as a philosophical framework linking healthy soils and natural farming methods with healthier eating and a better quality of life. It has steadily risen in popularity, with increasing demands around the world for organically raised food products. In 1954, Jerome Irving Rodale, organic farming pioneer and advocate who had founded the Rodale Institute in 1947, predicted the eventual rediscovery of and return to more natural farming methods and the growing social movement toward healthier diets (The History of Rodale Institute, http://rodaleinstitute.org/about_us). He could not have been more astute. Over the past decade, organic products have become the fastest growing sector of agriculture, with an annual increase of at least 20 percent (Duram, 2005).

An Historical Context

In order to gain an understanding of today's increasing significance of organic food production, we will first examine its history and development and meet some key pioneers in organic farming practices.

Since time began, farmers have sought the most effective ways to generate the greatest possible yield of their food products.

Throughout most of history, harmful chemicals were not used to enhance crop production, and crops were grown successfully following the same naturally-based, tried-and-true methods used by our ancient ancestors. In other words, the entire concept of organic farming, or the raising of crops without the use of chemicals, is nothing new. Instead, it is a basic return to simple crop management without the potential dangers associated with the use of chemicals.

It was not until the Industrial Revolution of the eighteenth and nineteenth centuries that scientific discoveries began to reshape agricultural practices and allow those yields to multiply substantially. The introduction of gasoline-powered engines gave farmers new methods with which to till their soil, spread seeds, and harvest their crops. Tractors could do what oxen and horses had done but in far fewer hours and requiring far less human labor. At the same time, scientists began developing the earliest nitrogen fertilizers which would

reduce insect damage and increase crop volume per acre. Together, tractors and chemical fertilizers changed the entire landscape of crop production. When farmers used their tractors and other mechanized equipment to apply chemical fertilizers, they could substantially boost their production levels.

The twentieth century brought further increases in the use of chemicals. Advances in mechanization as well as fertilizer and pesticide development impacted the farming industry worldwide. Irrigation systems and water management combined with more advanced farm machinery and newer uses of chemicals improved work efficiency and boosted production capacity.

During this time, however, research being done by a handful of forward-thinking environmentalists gave cause for many to begin to question the direction in which the agricultural industry was heading. One of the earliest of these pioneers was Lord Northbourne of Kent, England. An agriculturist, educator, author, and visionary thinker, he was educated at Oxford and was for many years Provost of Wye College, the agricultural college of London University. In 1940, Lord Northbourne wrote his significant book, *Look to the Land*, in which he coined the term "organic farming." His book describes his personal, spiritual philosophy regarding the essential connection between nature, soil, man, and God, as well as the idea of managing a farm as

an organic whole (Lord Northbourne, www.sophiaperennis.com/books/spiritual-ecology/look-to-the-land/).

Another British aristocrat, Sir Albert Howard, was considered by many to be the founder, or father, of the organic movement. An accomplished English botanist and son of a farmer, Sir Howard was sent to India from 1905 to 1924 to be an agricultural advisor and teach Western farming methods to Indian food growers. He soon found that it was *their* methods he wanted to study. He began to favor traditional Indian farming methods over conventional agricultural when he saw the connections between healthy, compost-amended soil and healthy crops, livestock, and people. After further improving traditional Indian composting techniques into what is now known as the Indore method, Sir Howard came to be thought of as the father of modern composting. Today, he is known for his quote, "The health of soil, plant, animal and man is one and indivisible" (Sir Albert Howard, Founder of the Organic Farming Movement, www.ifoam.org/growing_organic/definitions/pioneers/sir_albert_howard.php).

Keith Addison, noted journalist and founder of the Journey to Forever Project, wrote this about Sir Albert Howard for the Journey to Forever online library:

He adopted the best teachers: nature—"the supreme farmer"
—India's peasants (whom he regarded as his prime

customers) and the pests and weeds the scientists were committed to fighting with an ever-widening array of poisons, but which Howard called his 'Professors of Agriculture.' He saw pests in the context of nature's use for them as censors of soil fertility levels and unsuitable crops growing in unsuitable conditions. He found that when the unsuitable conditions were corrected, the pests departed. His crops were virtually immune to pest attacks, and so was his livestock (Addison, Journey to Forever).

Another early pioneer in organic agriculture who was inspired by Sir Howard's work in India was Lady Eve Balfour, a British-born student of farming methods who conducted significant research in compost-based farming and other organic agricultural concepts. At a 1977 international conference of organic growers in Switzerland, Lady Balfour described her initial interest and involvement:

Although I started farming in Suffolk in 1919, my own interest in the ecological approach only began in the early 1930s. By that time local societies had been formed in more than one country to promote organic husbandry and whole food, though I was not aware of this until 1945 when plans were underway for forming the Soil Association, the first society in the movement aiming at a world membership, and with research high on its list of priorities (Balfour, 1977).

In 1939, as part of her own research, Lady Balfour initiated the first known study comparing organic farming methods with conventional, chemical-based farming in a controlled setting. Her Haughley Experiment was conducted on two adjoining English farms

where topography, weather patterns, and management were the same but the specific farming methods used were different (Balfour, 1977).

At the conference in Switzerland, she described the experiment:

This pioneering experiment was the first ecologically designed agricultural research project, on a full farm scale. It was set up to fill a gap in the evidence on which the claims for the benefits of organic [growing] were based. The purpose [was] to assess what effect, if any, the different soil treatments had on the biological quality of the produce grown thereon, including its nutritive value as revealed through its animal consumers. This had never been done before. ... Side-by-side units of land were established, each large enough to operate a full farm rotation, so that the food-chains involved—soil—plant—animal and back to the soil—could be studied as they functioned through successive rotational cycles, involving many generations of plants and animals, in order that interdependences between soil, plant and animal, and also any cumulative effects could manifest (Balfour, 1977).

In 1943, in large part based on the Haughley Experiment, Lady Balfour published *The Living Soil*, considered by many to be the definitive work in organic agriculture and the organic movement. In 1946, she co-founded and became the first president of the Soil Association, an international organization dedicated to promoting sustainable agriculture (Lady Eve Balfour, www.ifoam.org/growing_organic/definitions/pioneers/lady_eve_balfour.php).

One of Lady Balfour's most important contributions was inspiring other innovative thinkers to reconsider their approaches to

food production. In the same address, she described other leaders in early organic research:

These pioneers had one thing in common—they were what we should now call ecologists. They all succeeded in breaking away from the narrow confines of the pre-conceived ideas that dominated the scientific thinking of their day. They looked at the living world from a new perspective—they also asked new questions. Instead of the contemporary obsession with disease and its causes, they set out to discover the causes of health. This led inevitably to an awareness of wholeness (the two words after all, have the same origin) and to a gradual understanding that all life is one” (Balfour, 1977).

The innovative research being done by Lady Balfour and Sir Howard paralleled the discoveries of a Japanese scientist, farmer, and philosopher, Massanobu Fukuoka. After recovering from a serious illness at the age of 25, Fukuoka experienced a spiritual awakening that led to his questioning of traditional, Western farming methods. He began to study his father’s citrus orchard and developed a new belief in the simplicity and healing benefits of nature. “I just emptied my mind and tried to absorb what I could from nature,” he later wrote. (Massanobu Fukuoka, www.onestrawrevolution.net/One_Straw_Revolution/Massanobu_Fukuoka.html).

Today, Massanobu Fukuoka is credited for creating a method of farming commonly referred to as *Natural Farming* or *Do-Nothing*

Farming, in which he advised farmers not *what* to do, but what *not* to do. (Massanobu Fukuoka, www.onestrawrevolution.net/One_Straw_Revolution/Massanobu_Fukuoka.html). Inspiring many within the natural food and lifestyle movements, Fukuoka published his first book in 1975 entitled *One Straw Revolution* that emphasized a meticulous balance of the local farming ecosystem and a minimum of human interference and labor. He broke his approach down into four primary principles of natural farming: (1) no plowing or turning of the soil, (2) no chemical fertilizers or prepared compost, (3) no weeding by tillage or by herbicides, and (4) no dependence on chemical pesticides. "The earth cultivates itself," he wrote. "There is no need for man to do what roots, worms, and micro-organisms do better" (Massanobu Fukuoka, www.onestrawrevolution.net/One_Straw_Revolution/Massanobu_Fukuoka.html).

In 1947, organic pioneer Jerome Irving Rodale established the Rodale Institute in rural Pennsylvania to explore and develop methods of rebuilding natural soil fertility. He had already established himself as a writer and publisher of several books and magazines on topics related to health, most notably *Prevention Magazine*. (Our Mission, http://rodaleinstitute.org/about_us). Before founding the Institute, Rodale had become keenly interested in farming. He had learned about new food-growing concepts being pioneered by Lady Eve Balfour and

Sir Albert Howard. Rather than working on reducing insect damage and increasing crop output, he began to study farming methods which focused on making people healthy. He made the connection between healthy soils and healthy people, popularizing Lord Northbourne's term "organic" as a reference to its being grown without pesticides. (J. I. Rodale Dead, June 8, 1971, <http://select.nytimes.com/gst/abstract.html?res=F70615F83D5A1A7493CAA9178DD85F458785F9>). As Rodale communicated the idea of creating soil rich in nutrients and free of contaminants, people began to listen and acceptance grew. "Organics is not a fad," he wrote in 1954. "It has been a long-established practice—much more firmly grounded than the current chemical flair. Present agricultural practices are leading us downhill" (Moyer, 2011, p. xiii).

The Rodale Institute launched a comparative study in 1981 under the leadership of farm manager Jeff Moyer to research organic growing methods versus conventional growing methods over the long term. The focus of the *Farming Systems Trial* was "to study what happens during the transition from chemical to organic agriculture." The results "surprised a food community that still scoffed at organic practices. After an initial decline in yields during the first few years of transition, the organic system soon rebounded to match or surpass the conventional system" (Rodale Institute, 2011, *Farming Systems Trial*, p. 5).

To this day, under Jeff Moyer's management, that study continues, and the Rodale Institute also maintains its other pioneering research in organic agriculture, advocating for policies that support farmers, and educating people about how organic methods are the safest, healthiest option for people and the planet. Jeff Moyer is an expert in organic crop production systems including weed management, cover crops, crop rotations, equipment modification and use, and facilities design. He has helped countless farmers make the transition from conventional, chemical-based farming to organic or sustainable methods. Throughout his more than thirty years at the Rodale Institute, Moyer has brought a farmer's practical perspective to numerous issues in organic agriculture. He is a past chair of the National Organic Standards Board, which assists the USDA Secretary of Agriculture in developing standards for materials to be used in organic production as well as advising on other aspects of implementing the National Organic Program. He is also a member of the Leonardo Academy's committee on sustainability, and a founding board member of Pennsylvania Certified Organic (Moyer, 2011, back cover).

In his on-line article, *Making the Transition to Organic Farming, It May be Easier than You Think*, Jeff Moyer writes,

As a farmer, I am happy to report that organic farming can deliver many rewards. To begin, organic farming makes good economic sense. Using organic management practices, I have minimized my input, increased my market opportunities, and most importantly, increased my control over prices (Moyer, 2005).

Following in the footsteps of earlier innovators, today's leaders in the organic movement deal with the challenges we face as a society that recognizes the critical need for change. These challenges of change include persuading growers to make the transition to certified organic farming methods as well as the stringent steps they must follow in order to become certified. One of today's organic agriculture leaders is Leslie Duram, PhD, a professor of geography and environmental resources at Southern Illinois University in Carbondale, Illinois. Dr. Duram is an expert in the social and ecological aspects of organic farming and local food and a strong advocate for education. In her paper *Organic Farmers in the US: Opportunities, Realities, and Barriers*, she points out that in addition to the challenges farmers face in shifting from conventional to organic farming, there also are plentiful opportunities—and financial rewards. "Organic farmers need research and information," she wrote. "They need to be informed so that they can make good choices for their production and marketing activities" (Duram, 2006).

Like Leslie Duram, Eliot Coleman is a leader and advocate in today's organic growing movement. He is a self-taught farmer from New England who is well known for developing successful techniques for cold-weather growing. He developed his own farm into a center of learning for people who are interested in organic and sustainable farming practices. He has been active in the International Federation of Organic Agricultural Movements, serving as its executive director for two years, and he has been an advisor to the U.S. Department of Agriculture (Eliot Coleman, http://en.wikipedia.org/wiki/Eliot_Coleman). He wrote *The New Organic Grower* in 1989 and published its revised edition in 1995. The book is considered the 'go-to' document for anyone interested in organic growing, from commercial farmers to beginning home gardeners. The 1995 revised text and appendix provide a wide variety of answers on topics ranging from soils, seeds, manures, tools, seasonal growing, weed and pest control, and marketing techniques (Coleman, 1995).

Organizations, Advocacy, Regulation, and Promotion

As organic agriculture has developed, there has been a need for an organizational framework uniting its leaders, providing education, promoting information sharing, and regulating its methods. From a

global to a local level, growers and advocates rely on these organizations for information, guidance, and structure.

The International Federation of Organic Agricultural Movements (IFOAM) was established in 1972 in Versailles, France, under the leadership of Lady Eve Balfour and four other international pioneers in organic farming. Its mission, as stated in its preamble, is “leading, uniting and assisting the organic movement in its full diversity” (Mission and Goals, www.ifoam.org/about_ifoam/inside_ifoam/mission.html). The goal of this international umbrella organization is “the worldwide adoption of ecologically, socially and economically sound systems that are based on the principles of organic agriculture” (Mission and Goals, www.ifoam.org/about_ifoam/inside_ifoam/mission.html). Through annual conferences and other well-attended gatherings that take place around the world, IFOAM actively ensures an ongoing exchange of ideas concerning the status and advancement of organic agriculture (Mission and Goals, www.ifoam.org/about_ifoam/inside_ifoam/mission.html).

In order to fulfill its mission, IFOAM follows five main objectives: (1) building a worldwide voice for the organic movement; (2) developing, communicating and defending the principles of organic growing; (3) advocating and facilitating the implementation of organic agriculture; (4) promoting the development of markets for organic

food products; and (5) ensuring an effectively managed organization with sufficient and sustainable resources (Mission and Goals, http://www.ifoam.org/about_ifoam/inside_ifoam/mission.html).

The most significant contribution IFOAM has made, and the one for which it is best known, is its Four Principles of Organic Agriculture. These standards provide a basic philosophical approach in the four areas of health, ecology, fairness, and care, as follows:

- The Principle of Health: Organic Agriculture should sustain and enhance the health of soil, plants, animal, human and planet as one and indivisible;
- The Principle of Ecology: Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them;
- The Principle of Fairness: Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities; and
- The Principle of Care: Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment (The Principles of Organic Agriculture, http://www.ifoam.org/about_ifoam/principles/index.html).

The National Organic Program (NOP) works on a national level to ensure the integrity of USDA organic products in the United States. It is "a regulatory program responsible for developing national standards for organically-produced agricultural products. It requires all organic food products to meet the same standards and be certified under the

same certification process. These standards assure consumers that products with the USDA organic seal meet consistent, uniform standards” (Organic Certification, http://www.usda.gov/wps/portal/usda/usdahome?navid=ORGANIC_CERTIFICATIO). Among the key activities of the NOP are: (1) developing guidelines on organic standards; (2) maintaining a list of acceptable and unacceptable substances; (3) accrediting and certifying organic producers and staff; (4) providing international import and export policies; (5) training USDA certifying agents and staff; and (6) investigating violations and complaints in organic production and distribution (National Organic Program, www.ams.usda.gov/AMSV1.0/nop).

Within the National Organic Program is the National Organic Standards Board (NOSB), which was organized in 2000 using the tools set forth in the Organic Food Production Act that had been passed earlier that year. The NOSB is composed of growers, environmentalists, consumers, distributors, retailers, and USDA certifying agents. Their role is to make recommendations to the USDA on a wide variety of issues relating to organic food production, distribution, and marketing (National Organic Standards Board, www.ams.usda.gov/AMSV1.0/NOSB).

One of the first in the nation to establish an organic certification program, the state of Washington is considered a leader in the modern organic movement. The Organic Food Program of the Washington

State Department of Agriculture (WSDA) ensures and upholds the integrity of the statewide organic food label by educating growers and consumers and regulating standards for growing. They also certify and inspect organic crop and livestock producers, distributors and retailers (WSDA Organic Food Program, <http://agr.wa.gov/foodanimal/organic/#WSDAOrganic>).

On a local level, according to WSDA Organic Food Program specialist Christa Bemis, Thurston County, Washington does not have its own regulatory body regarding organic food production or labeling. Instead, it follows the guidelines issued and maintained by the WSDA Organic Food Program (C. Bemis, personal communication, January 21, 2005).

CHAPTER TWO

ORGANIC CERTIFICATION IN WASHINGTON STATE

Introduction

As explained in Chapter One, organic agriculture refers to an ecological production management system that promotes and utilizes bio-diversity, biological cycles, and biological soil activity (Washington State Department of Agriculture, *Organic Crop Production*, AGR PUB 420-175). It minimizes the use of potentially harmful farming management practices and emphasizes practices that restore, maintain, and enhance ecological harmony. Accordingly, when used in the context of the National Organic Standards Board, the word 'organic' is a labeling term that indicates that crops have been produced using the systems described above and in compliance with the approved certification standards of the United States Department of Agriculture Organic Foods Production Act of 1990 (WSDA, *Organic Crop Production*, AGR PUB 420-175). WSDA Organic Food Program specialist Christa Bemis explained that the National Organic Program, which oversees the National Organic Standards Board, sets the standard to which all food and crops intended to be sold in the United States as 'organic' must be produced. Organic certification, then, designates and assures the consumer that an independent third party has verified that all

requirements of organic crop production, processing and handling have been met (C. Bemis, Personal communication, 2005). The only growers who are exempt from meeting these certification requirements are those who annually sell \$5,000 or less of organic products. Within the framework of the National Organic Program, each state has its own specific certification process and requirements (C. Bemis, Personal communication, 2005).

The Certification Process

In order to be certified 'organic' in Washington State, organic growers are required to complete an application process that can take anywhere from three and a half months to three years. Applicants who have never farmed their land before and/or those whose land has never been treated with substances prohibited by the National Organic Program can expect to receive 100% organic certification for their crops in as little as three or four months. However, conventional growers—those whose land has been treated with prohibited materials—who now wish to switch over to organic growing must undergo a 36-month, transitional waiting period prior to the planting and harvesting of their first '100% certified organic' crops. For those applicants, the WSDA offers a Transitional Certification Program, which is explained in more detail below.

The basic application process involves written forms, inspections, reports, and recommendations. The process is set forth by the Washington State Department of Agriculture (WSDA) in seven basic steps which are listed in two WSDA documents: (1) *Guide to Organic Certification* [AGR PUB 420-237, p. 8]; and (2) *Organic Crop Production* [AGR PUB 420-175]. By following the details provided in these steps, an applicant will be assured that the application is complete and the inspection of the organic growing business is successful. These basic seven steps are:

- Step 1: Applicant contacts the WSDA Organic Food Program and requests application materials and resources.
- Step 2: Applicant reads the WSDA's *Guide to Organic Certification* and *Organic Rules and Regulations*.
- Step 3: Applicant completes the WSDA application materials and submits appropriate fees.
- Step 4: WSDA reviews and approves application packet.
- Step 5: WSDA Organic Field Specialist inspects applicant's farmlands for previous treatment using prohibited materials. Also examined are the applicant's growing practices, business plan, and written records.
- Step 6: Field Specialist submits report; WSDA Certification Specialist reviews report, requests additional information or makes recommendations, if necessary, and makes final certification decision.
- Step 7: WSDA issues Organic Certificate to applicant (WSDA, *Organic Crop Production*, AGR PUB 420-175).

WSDA Transitional Certification Program

Not all applicants will be eligible for 100% organic certification in their first year. As explained above, growers whose land has been treated with prohibited synthetic materials in previous years will need to transition their land over a period of 36 months before they can label their crops as 100% organic. (A definitive list of those prohibited materials can be found in the WSDA's publication *Organic Rules and Regulations* [AGR PUB 420-209, pp. 46-48], a helpful resource which is discussed in more detail below.) It is at Step 5, listed previously, that a determination will be made by an Organic Field Specialist whether or not the application may proceed or be delayed and considered 'transitional.' Should the application be deemed transitional, the waiting period will be 36 months during which the applicants must refrain from applying any of the prohibited substances to their land and crops (WSDA, *Organic Crop Production*, AGR PUB 420-175).

The WSDA offers the option of a unique transitional certification level. It allows a grower to use a "Certified Transitional" label after the first twelve months of growing crops during which no prohibited materials have been applied. Requirements for transitional labeling are listed on page 25 of *A Guide to Organic Certification*, also described in more detail below (WSDA, *Guide to Organic Certification*, AGR PUB 420-237, p. 25).

Helpful Resources

The *Guide to Organic Certification* described in Step 2 above is an excellent resource for crop producers who wish to apply for organic certification in Washington State (WSDA, *Guide to Organic Certification*, AGR PUB 420-237). It provides answers to a number of questions regarding soil preparation, fertilizer application, weed control, and crop transplantation. It also offers guidelines to record-keeping requirements as well as a detailed description of the process of transitioning from conventional farming practices to organic growing. Finally, the guide describes the labeling requirements of the National Organic Program and explains the differences between various labeling claims, e.g., “100% Organic,” “95-100% Organic Ingredients,” “Made with 70-95% Organic Ingredients,” and “Less than 70% Organic Ingredients” (WSDA, *Guide to Organic Certification*, AGR PUB 420-237, p. 20-21). Also, as described above, the WSDA Transitional Certification Program allows growers to use “Certified Transitional” labels after their first twelve months during which no prohibited materials have been applied (WSDA, *Guide to Organic Certification*, AGR PUB 420-237, p. 25).

Another invaluable resource for potential organic certification applicants is a booklet, also published by the WSDA Organic Food Program, entitled *Organic Rules and Regulations*. In a straightforward

manner, it begins by presenting the National Organic Program's certification and accreditation standards regarding the production, handling, labeling, and overall administration of an organic growing operation. Section Two provides WSDA organic regulations concerning specific products, registration, labeling, marketing, and required fees (WSDA, *Organic Rules and Regulations*, AGR PUB 420-209, pp. 62-87).

One of the most critical components in *Organic Rules and Regulations* covers record-keeping and documentation. It should be noted by any grower about to transition from conventional farming to organic growing that the record-keeping practices are different. In order to maintain the status of certified organic, each business must possess and maintain records indicating compliance with the regulations set forth by the National Organic Program and the WSDA. Such records, which must be maintained for a period of no less than five years, should detail production, harvesting, and handling of agricultural products that are intended to be sold, labeled or represented as organic. They also must fully disclose all activities and transactions while adequately demonstrating compliance with the Organic Foods Production Act of 1990. Growers must make records available for inspection and copying during regular business hours (WSDA, *Organic Rules and Regulations*, AGR PUB 420-209, p. 12).

WSDA's Christa Bemis advises aspiring organic growers that accurate and complete applications will expedite the permit process for staff at the WSDA (C. Bemis, personal communication, 2005). Applicants will find that the WSDA publishes a helpful guide, *Tips on Completing Your Application Forms for Organic Certification*, which is available by contacting the WSDA Organic Food Program.

Ms. Bemis also emphasizes the point that the staff of the WSDA Organic Food Program are readily available to address specific questions or concerns regarding either the application process or actual practices in organic food production (C. Bemis, personal communication, 2005).

CHAPTER THREE

HOW TO TRANSITION FROM CONVENTIONAL TO ORGANIC CROP PRODUCTION

After thirty years of a rigorous side-by-side comparison, the Rodale Institute confidently concludes organic methods are improving the quality of our food, improving the health of our soils and water, and improving our nation's rural areas. Organic agriculture is creating more jobs, providing a livable income for farmers, and restoring America's confidence in our farming community and food system (Rodale Institute, Farming Systems Trial, 2011).

Introduction

Those of us who have made the choice to change the way we grow crops have based that decision on our personal ideals. We value people, health, and the environment, and we seek ways we can contribute to our shared wellbeing. If you have made the decision to begin this conversion, there is no question: You have a long road ahead of you. But your beliefs and ideals will provide the fuel you will need, and the benefits will prove to be immeasurable, and vastly rewarding.

The challenge in making the transition from conventional to organic farming might at first seem overwhelming. Jeff Moyer, the Rodale Institute farm manager, recognizes that. On the Rodale

Institute website, he wrote, “The idea of having to change your farming practices and then wait three years for certification may seem rather intimidating” (Moyer, http://www.rodaleinstitute.org/transition_fact_sheet). But he also assures his readers that the transition *can* be accomplished—as long as it includes plenty of careful forethought, information gathering, and planning. “A transition to organic farming is not as hard as you might think,” he writes (Moyer, http://www.rodaleinstitute.org/transition_fact_sheet).

While thousands of growers have made successful transitions to organic crop production, it is Jeff Moyer’s work with the Rodale Institute and its research farm that positions them as the continuing leader in the field. Therefore, for the purposes of this thesis, we will focus on Moyer’s own experience. In the same newsletter article referenced above, Moyer describes the transition to organic agriculture as a five-step process that can be both profitable and rewarding, and can, most likely, be followed when beginning *any* transition or new program. Specifically, Moyer’s five steps as taken directly from this article are (1) visualize, (2) evaluate, (3) educate, (4) plan, and (5) act (Moyer, http://www.rodaleinstitute.org/transition_fact_sheet).

Visualization

The secret to productive goal setting is in establishing clearly defined goals, writing them down and then focusing on them several times a day with words, pictures and emotions as if we've already achieved them. —Denis Waitley, American writer, speaker and consultant

(S. Hartmann, 2003, <http://silviahartmann.com/essay-goal-setting.php>).

The visualization process—perhaps the most individual and personal of the steps—allows the grower to use his or her imagination, to come up with a picture in one's mind of the endless possibilities of this new venture before writing any plans or taking any action. The visualization process is one that shouldn't be limited. It should be a creative and expansive exercise that includes not only the knowledge you now have and the ways you plan to apply that knowledge, but also the vast potential of new ideas and opportunities that may present themselves along the way. Visualization can begin with some basic questions: What is your ultimate goal in this transition? What new crops might you want to introduce? What variables will you need to consider in bringing about changes? What markets for organic products might you now be able to access? How much of your space is not currently being used that could be? What additional capacity might be available?

“Envision the ways in which you want your farming business to grow and change, including a clear idea of your ideal future, and possible one, five, and ten-year goals to help you along the way,” Moyer writes (Moyer, http://www.rodaleinstitute.org/transition_fact_sheet).

Evaluation

People must be realistic when evaluating their business. A company with no sales can still have value, but it depends on the intellectual property the company has ... It is not the idea, it's the execution, and in the product world, you can't just license an idea.

—Kevin Harrington, American entrepreneur
(Forbes, www.forbes.com/sites/danschawbel/2012/06/08/shark-tank-roundtable-how-to-evaluate-your-business/)

Before any business can be launched or major change introduced, one must always take inventory of the factors that might influence the outcome of the project and then determine whether it is prudent to continue, or whether specific conditions must first be adjusted. “Take inventory of all your current resources and practices,” Jeff Moyer says. “You may be surprised to discover the real value of your machinery and operation, and you may find that some of your current practices meet, or can be easily modified to meet the organic standards” (Moyer, http://www.rodaleinstitute.org/transition_fact_sheet). Moreover,

to ensure success, the evaluation process should become a continuing part of the overall project. The data you gather from thorough record keeping and from ongoing evaluations will inform other decisions being made throughout the entire project. This is especially true in crop production due to the many variables that must be considered, such as soil composition, weather conditions, and market demands. Perhaps most importantly, Moyer also reminds us, "As you evaluate your position and begin your transition toward organic practices, it is important to take your time" (Moyer, http://www.rodaleinstitute.org/transition_fact_sheet).

The evaluation process can begin with an overview and assessment of current crop production including the condition of the soil and equipment being used, and the knowledge and availability of existing staff. Jeff Swotek of the Natural Resources Conservation Service states that the testing of the soil is prudent for nutrient management, best return of farming efforts, and the gaining of knowledge of soil types and possible amendment alternatives (J. Swotek, personal communication, March 25, 2005). Current operating expenses, recorded weather patterns, recent market performance, and the level of revenues now being generated are other aspects that need to be assessed (R. Hastie, CPA, personal communication, March 20 2005).

Crop rotation should be considered as part of the ongoing evaluation process in order to maintain production levels and meet evolving market demands (Coleman, 1995, pp.50-53). Crop rotation may require changes in your planting and harvesting operation. A former manager of the Barn Nursery, Chuck Pavlich, suggested that it may become evident that exploring the market for alternative crops would also be of economic benefit (C. Pavlich, personal communication, February 26, 2005).

Subsequent evaluation could address the need for additional equipment to make the transition, and even some innovative ways in which that equipment could be used to generate extra income. For example, Robert Wallace, an expert in farm and equipment management in the Thurston County area, suggests that your equipment can be used *off* site when it is not being used *on* site.

With the appropriate tractor, a trained and knowledgeable staff person can provide tilling or weeding services to other nearby farm operations and generate revenues in so doing. Just be sure that tractor is never too far from your own farm should it be needed there (R. Wallace, personal communication, March 2, 2005).

Even at the completion of harvest, a thorough evaluation of the entire process may reveal various changes that are needed to improve the planting, production, and security of the crop in future years of production.

Eliot Coleman, a national figure in the modern organic movement who is described in detail in Chapter One, cautions growers to base the evaluation process on clear, accurate, representative data. Whether it concerns weather patterns or market fluctuations, being realistic will increase the chances that the transition to certified organic farming will be a successful one (E. Coleman, personal communication, February 25, 2005). "Organic growing is not complicated. Nor is it difficult," he wrote in his book, *The New Organic Grower*. "It is the most straightforward way of raising plants. Difficulties usually arise from a misunderstanding of how it works" (Coleman, 1995, p. xii).

Education

Leadership and learning are indispensable to each other.

—John F. Kennedy, 35th President of the United States
(www.quoteworld.org/quotes/12210)

While much of a grower's experience and body of knowledge will carry over from traditional to organic farming methods, there will be much new information to learn as well. "Begin by learning the basics about organic practices and guidelines," Moyer recommends, "and compile a list of contacts and resources (other farmers, extension agents,

organizations, and books) that can continue to provide help to you as you progress toward your goals” (Moyer, www.rodaleinstitute.org/transition_fact_sheet).

Aspiring organic growers in Washington State are fortunate to have access to a strong statewide community of individuals, farms, businesses, schools, state organizations and professional growers’ associations. You will find that organic farming is an industry that is not only about profits but also about the intangibles of organic farming: making improvements to the environment and to personal and public health. As a result, it is a community characterized by an eager willingness to share knowledge and support (J. Gordon, personal communication, August 22, 2012). In addition to establishing these types of contacts, an individual seeking to establish a new organic farm or convert an existing farm to an organic one will benefit from the wealth of information available in print and on the Internet.

Among the most helpful websites are those maintained by:

- The Rodale Institute (www.rodaleinstitute.org)
- *The U.S. Environmental Protection Agency* (www.epa.gov/oecaagct/torg.html)
- The Organic Consumers Association (www.organicconsumers.org)

- The Oregon State University, Organic Agriculture Program, Department of Horticulture (<http://horticulture.oregonstate.edu/group/organic-agriculture-program>)
- The Washington State University Organic Agriculture Program (<http://csanr.wsu.edu/Organic>)

Some of the most helpful publications are Eliot Coleman's *The New Organic Grower*, Jeff Moyer's *Organic No-Till Farming*, and Ron Macher's *Making Your Small Farm Profitable*.

The New Organic Grower was first printed in 1989, then revised and reprinted in 1995. It is a clear, comprehensive, and straightforward guide to all aspects of the successful organic farm, regardless of its size, location, climate, soil composition, or crop output. In this book, Eliot Coleman, a well-known author and a recognized leader in the modern organic movement, shares his vast, practical knowledge about how to grow top-quality organic vegetables and fruits, how to harvest and market crops, and how to keep an operation sustainable and profitable. He also offers a wide range of recommendations to the grower on a month-to-month, crop-by-crop, and region-by-region basis, as well as a lengthy list of resources for equipment, seeds, building materials, tools, livestock, and more. Coleman endorses a production model that simplifies production techniques, uses the most efficient machinery and tools, reduces expenditures on purchased

supplies, and markets produce for maximum profitability. "From my experience, these four areas represent the basic information needed for small-scale, economically successful, biologically based food production" (Coleman, 1995, p. 3).

Jeff Moyer's book, *Organic No-Till Farming* focuses on the specifics related to reducing or eliminating tillage while improving the organic matter in soil. The information in his book is based on the research Moyer has conducted in his more than thirty years as farm manager at the Rodale Institute in Kutztown, Pennsylvania, and can be applied equally well on conventional and certified organic farms. It reflects the Rodale Institute's well-known founding theme and trademark phrase: "Healthy Soil, Healthy Food, Healthy People" (Rodale Institute, Anthony Rodale, Chairman Emeritus, www.rodaleinstitute.org/boardofdirectors). The book provides a logical approach to making the transition to organic no-till growing with an emphasis on the importance of cover crops in this type of operation. It also covers the key areas of erosion control, pests and diseases, weed management, water management, nutrient management, and financial planning. A glossary, an inclusive list of resources, and a catalog of Moyer's own contributions to the Rodale Institute's Web site rounds out this very worthwhile publication (Moyer, 2011).

As its title suggests, *Making Your Small Farm Profitable* by Ron Macher is focused on the fiscal side of running a successful farm. Macher offers a list of twenty-five guiding principles to help a grower produce new crops and cultivate new markets while ensuring and maximizing per-acre profits (Macher, 1999, pp. 43-49). He takes the reader through the entire building process, beginning with the basic concepts of sustainable farming and ending with his proven agricultural management practices. Macher's book concludes with extensive, comprehensive resource lists which will be invaluable to any grower who wants to make his or her operation profitable (Macher, 1999, pp. 244-268).

Planning

Developing the plan is actually laying out the sequence of events that have to occur for you to achieve your goal.

—George Morrissey, Strategic and Tactical Planning Expert
(www.iwise.com/goKDq)

Anyone who has gone through the steps of envisioning an organic farm, evaluating available and potential resources, and learning what makes an organic farm successful will be wise to follow the advice of D. E. McFarland, author of the 1958 university-level textbook,

Management Principles and Practices, who wrote, "Planning must be planned for" (McFarland, 1958, p. 84). In other words, you must allow yourself the time that will be needed to develop a sound, realistic business and management plan.

Regarding the value of the business plan for implementing a transition to organic farming, Rodale's Jeff Moyer explains it this way: "Organize a 'road map' of practical steps that you plan to follow to achieve your goals and vision. Be certain to commit this plan to paper so it is clear for you, and be prepared for some of the steps to change as your work progresses" (Moyer, http://www.rodaleinstitute.org/transition_fact_sheet).

In *The New Organic Grower*, Eliot Coleman shares his approach to planning.

I soon learned to plan ahead much more efficiently than I ever had — to set out the whole year's work on paper during the winter months and thus have a good grasp well in advance of what resources I would need, where they would come from, how I would acquire them, and how much time I could allot to each task" (Coleman, 1995, p. 33).

The planning process also includes the marketing of your proposed crops, which may not all be for food or agricultural consumption. Some of the crops may be planted and marketed to retail nurseries, garden centers, and farmers' markets as organic nursery stock (C. Pavlich, personal communication, February 26, 2005).

The management or business plan is critical for a number of reasons. First, your plan will serve as an inclusive and comprehensive blueprint of what you can expect, from the initial stages of visualization and goal setting, through each subsequent benchmark and milestone, to the final steps of harvesting your crops and taking them to market. Your plan will allow for the correct and timely flow of the different action steps you will take in the areas of production planning, financial planning, manpower planning, and product planning, ensuring that you keep your focus, remain true to your vision, and follow a logical progression of your planned process (McFarland, 1958, pp. 86-89).

Thorough, advance planning will also give you the opportunity to take what you read and learn about other organic operations, and then tailor your own plan to incorporate the knowledge you've gained and apply it to your own land, conditions, and goals. Because *all* farming is impacted by external factors over which you have no control—temperatures, rainfall, staffing issues, mechanical breakdowns, market fluctuations—a well thought-out plan can help to ensure that you are prepared at every step—and for the unexpected. In addition, the plan you develop and follow this year will serve you well next year when you want to look back, recall what you did,

evaluate what worked and what didn't, and determine what you need to change and what should remain the same.

Another purpose of the business plan relates to obtaining your organic certification. In Chapter Two (pages 30-36), we outlined the seven steps that must be taken in order to become a certified organic grower in the state of Washington, as recommended by the Washington State Department of Agriculture. After contacting the WSDA Organic Food Program, reading both their *Guide to Organic Certification* (AGR PUB 420-237) and *Organic Rules and Regulations* (AGR PUB 420-209), and then completing the necessary application forms, an applicant will be contacted by a WSDA representative who will conduct an inspection of the prospective farm and determine the viability and qualifications of the operation. The applicant's business plan and record-keeping practices will be two of the most critical components of that inspection. From them you will have an ongoing journal of daily operations that will demonstrate to the inspector that the applicant is in full compliance with all required documentation. Without the business plan, the inspection will be incomplete (C. Bemis, personal communication, January 21, 2005).

There is one more reason why a business plan is crucial to your success as an organic farmer. Unless you have adequate funds and are

able to make a substantial investment, you may need the assistance and support of a financial institution for either long or short-term borrowing. Should that be the case, your business plan, with an accompanying financial pro forma, will be required by the prospective lender to demonstrate that you have thought through your goals, anticipated your expenses and revenues, built an infrastructure to support the business, and will be a strong candidate for lending.

Any effective business plan—regardless of the type of business—will include some main components. On the following pages, an outline for a suggested plan lists and explains those components. The outline is based on a composite of plans as found in two different business resources: (a) *The Complete Book of Business Plans* [Covello & Hazelgren, 1995, pp. 88-116] and (b) *The Suitcase Entrepreneur* [Sisson, www.suitcaseentrepreneur.com/tag/one-page-business-plan/]. This outline contains each of the main components of a business plan followed by a brief explanation of each component. A fully developed sample business plan for transitioning to organic farming can be found in Appendix B.

SUGGESTED OUTLINE FOR A BUSINESS PLAN

I. Executive Summary – an introduction and overview of the entire business plan condensing project goals and objectives, anticipated operations, staff and equipment requirements, revenue and expense projections, and opportunities for growth.

II. Mission Statement – a brief statement that explains the *primary purpose* of the business. Every activity that takes place in the business must directly or indirectly contribute to the realization of the purpose described in the mission statement.

III. Main Goals – a list of three to five main objectives for the business, i.e., what you want most to accomplish. These goals should be specific, realistic, positive, and both short- and long-term.

IV. Strategies for Achieving Goals – a detailed list of the activities that must take place in order to accomplish your objectives.

V. Strengths and Challenges – an inclusive list that outlines both your assets and the possible obstacles that will impact your ability to reach your goals.

VI. Anticipated Customer Base – the potential consumer markets for all your products and services.

VII. Estimate of Anticipated Expenses – a comprehensive list of all operating costs you will need to consider in planning the business. See Tables 1 through 4 on pages 71-74 for a sample annual breakdown of anticipated expenses.

VIII. Estimate of Anticipated Gross Income – a list of revenues you expect will be generated by your products and services. See Tables 5 through 8 on pages 75-78 for a sample analysis of total annual revenue, expenses, and net profit.

IX. Areas of Potential Diversification/Growth – essentially, a vision of future possibilities, i.e., how you can expand and grow your business beyond the objectives described in the initial business plan.

X. Staffing Needs – a detailed list of needed personnel and their qualifications, roles, responsibilities, and wages/benefits.

(END OF BUSINESS PLAN OUTLINE)

Action Plan

*Take your first practical step, as outlined on your road map,
and then continue along your planned path
with patience and deliberation.*

—Jeff Moyer, Rodale Institute Farm Manager
(Moyer, http://www.rodaleinstitute.org/transition_fact_sheet)

As you prepare to make the transition from conventional to organic farming, it will be helpful to keep some key ideas in mind. First, Jeff Moyer recommends that if you break the process down into manageable steps, the transition can be both profitable and rewarding. He adds, “Many farmers who have made this transition have told me that their organic management practices have brought them a sense of fun and satisfaction to their work, and to their lives as a whole” (Moyer, http://www.rodaleinstitute.org/transition_fact_sheet).

Second, it will help to remind yourself frequently *why* you are taking on this challenging project. Continually touch base with your value system and reflect on the long list of benefits of what you are doing, on both a small and broad scale: improved soil health, reduced damage and decreased toxicity in the environment, and healthier children, families, and communities.

It will also be helpful to make and maintain connections with others who share these basic values, from small local growers’ associations to nationally recognized educational institutions. You are

not alone in your decision to find a better way to grow crops. The experience and knowledge that others have accumulated will inspire and encourage you, while at the same time, your own enthusiasm may inspire yet others to follow a similar path.

Together, Jeff Moyer's five-step transition process and the suggested business plan outlined in this chapter form the basis of the transition plan provided in the following chapter. It is a case study of an actual transition from conventional to organic farming that took place on 350 acres at the Black River Ranch in Thurston County, Washington.

CHAPTER FOUR

BLACK RIVER RANCH: A CASE STUDY

Introduction

The following case study describes an actual plan to make a profitable transition from traditional farming methods to certified organic farming methods on a dairy farm in Thurston County, Washington. This plan was originally conceived and written in 2005. At that time, I was a lessee of some cropland on the Black River Ranch located in southwest Washington, where I was growing corn silage (animal feed) during the main growing season and a variety of cover crops in the off season. When I wrote this plan, I anticipated implementing the entire transition as described on the following pages, and although the complete transition was never fully implemented due to unforeseen changes in land and business ownership, the plan does cover all aspects of a projected transition and ultimately demonstrates the profitability of growing certified organic crops in this region.

The Black River Ranch is a successful, 700-acre commercial dairy farm that has been in operation for approximately forty years. Activities on the farm have consisted primarily of (1) raising, feeding and milking dairy cows, (2) growing feed crops for the dairy cows, (3)

managing dairy by-products to be used as soil amendments, and (4) maintaining the land in a purposeful and responsible manner.

The Black River Ranch and its land and business operation are described in detail in a Conservation Plan that was approved and published in 2002 by the United States Department of Agriculture Natural Resources Conservation Service (NRCS) in cooperation with the Thurston Conservation District. The Conservation Plan, which is written in compliance with state permit requirements, is a tool designed to help a grower be a responsible steward of the land. It evaluates the soil, water, air, and plant and animal resources on a farm property and provides the land owner with options for effectively managing and protecting resources. Copies of a conservation plan are typically kept at two sites: the farm operations office and the NRCS office. The Black River Ranch Conservation Plan was written by Jeff Swotek of the USDA NRCS (Thurston County Conservation District Farm Plan, 2002).

The Vision

Like Jeff Moyer's system of transitioning to organic farming, which is described in detail in the previous chapter, this plan began with the visualization process (Moyer, http://www.rodaleinstitute.org/transition_fact_sheet).

In the early winter of 2004, having become keenly aware of the growing popularity and healthy benefits of organic foods, I had begun to consider using the land I was already farming (using traditional methods) to try growing organic crops instead. As stated above, I had been leasing 350 acres of farmland on the Black River Ranch. I was using 330 of those acres to grow corn and sell it to dairy farmers for cattle feed. The additional twenty acres, which were adjacent to the larger portion, had been inactive for more than three years. While working the fields, I would analyze the possibilities of a transition to organic farming methods and consider what some of my options and advantages would be if I were to make this transition. I concluded that my vision had potential, and I decided to go about it in a logical manner, learning what I needed to know, meeting other growers whose experiences could guide me, and farming the land using the approach and specific practices that would ensure a successful transition.

One of the first things I learned was that Washington State requires farmland to be free of non-approved chemical and pesticide use for a period of three full years before crops grown on it can be marketed and sold as certified organic crops. I had previously used chemicals on my 330 acres of corn crop to control weed growth, but it had been more than three years since I had applied chemicals to the

smaller, twenty-acre area. I learned that crops grown on the those twenty acres could be sold as *certified organic* in the first year, but that it would be *three* years before the larger section of land would be considered chemical-free and corn grown on it could be certified and sold as organic. (See Appendix C, page 102-103, for Black River Ranch Site Maps.)

Based on those built-in timeframes, I envisioned further. Because I had been successful both growing and selling corn silage in the past, I decided to continue, but now I would be using an all-organic (chemical-free) approach. In my first season I would plant corn seed on the entire 350 acres. After the harvest, the majority of corn would continue to be sold as it had been in previous years. However, the corn grown on the smaller section would now be certified organic by the state, and I could market and sell it as such and expect it to yield higher prices as a result.

Even further ahead, I envisioned using a portion of the land to eventually grow a variety of nursery stock (primarily fruit trees) which I could sell at The Barn Nursery—my family business—for additional revenues. My vision also included growing organic vegetables to sell at The Barn as well as at local farmers markets.

I knew I needed to educate myself, which would provide me with the tools and skill sets I would need as well as a broader picture of

what all my options were. With these visions and concepts, I was initiating the journey Jeff Moyer had written about—although I didn't realize it at the time.

Evaluation

My early research on organic farming provided my next big reality check. As described above, I had been growing corn silage at the Black River Ranch for several years. I planted the corn in early spring, and by the fall harvest, each acre was producing between 23 and 30 tons of corn. Now, I learned that increased weed competition (from not using chemical herbicides) would result in a per-acre yield of 33 percent *less* than before. Instead of 23 to 30 tons of corn per acre, I should now expect a yield of only 18 tons per acre.

Also in previous years, I had grown off-season cover crops such as winter wheat, rye, and triticale, which also were used for feeding dairy animals. Each acre produced between four and eight tons of cover crop. While making my transition, I could continue to plant winter cover crops after the conclusion of each corn season and harvest them in the spring. I figured that with a yield of four tons per acre on each of the twenty acres considered certified organic, I would add 80 more tons of organic dairy feed to what I could market and sell as certified organic.

Before proceeding further, an important next step was to test the condition of the soil on the farmland, just as it had been tested at least once each year per the Thurston County Conservation Plan. In previous years, to enrich the soil with additional nitrogen prior to planting, I had always applied liquid manure from the dairy operation, and then repeated the process shortly after planting. A final liquid manure application was put on immediately following the harvest. Now, as a result of those efforts, my soil tests revealed that the soil was rich and fertile, and—as expected—the small portion of twenty acres was also chemical-free.

The next step in the evaluation process was to consider any large expenses I might have to be prepared for. Since I had been harvesting crops for several years already on the Black River Ranch, I already had the necessary tractors, disks, seeder, chopper, harvester, and transportation equipment that would allow us to make the transition. I also had an irrigation system in place for both water and liquid manure applications. Because I would not be using chemicals to control the weeds and would now be weeding more frequently, the only new pieces of equipment I needed to purchase were special weeding attachments. (In fact, I would be saving money by no longer purchasing herbicides and pesticides, although those savings would be offset by increased

labor, additional fuel, and equipment wear and tear that would all be related to controlling weeds.) Finally, I would need to order certified organic corn seeds, similar to the variety I had planted in years past but somewhat more costly.

My existing farm staff, consisting of four full-time workers during the growing season and two in the off-season, would all be participating in the transition process. When I introduced my idea, each responded with interest, eagerness to learn, and a willingness to meet the additional demands of organic growing.

We had previously been selling conventionally grown corn silage for \$32 per ton, but market reports and personal contacts indicated we would now be able to sell organically grown corn for \$58 per ton. (C. Schmid, personal communication, May 26, 2005). Although revenues from the cover crops, which were grown less for their sale value and more for their soil amendment qualities, were low (even after the transition), they would still be considered as part of our business model.

The overall evaluation, which considered each component individually as well as a part of the larger picture, showed that our anticipated transition would be a viable project.

Becoming Educated

Not surprisingly, learning the basics and transitioning to organic growing came easy to my team and me, because we understood that we were basically going to do the same tasks as before, without applying pesticides. Still, I was determined to learn as much as possible, so I began researching and reaching out to find new sources of information. While reading Eliot Coleman's 1995 revised *The New Organic Grower*, which had been given to me as a gift, I found other book titles and became familiar with the names of other pioneers in the organic growing field. It wasn't long before I was also reading publications from nearby educational institutions as well as articles on the Internet, and learning about the Rodale Institute, for example.

Numerous other local resources were available to me, including the State of Washington Department of Agriculture, located—conveniently—in Thurston County. Being invested themselves in my ultimate success, the staff there were (and are) a wealth of information. I found them to be extremely accommodating in supporting my vision, answering my questions, and directing me to other resources. They gave me publications to read and websites to visit, all of which led to further opportunities for learning. At their suggestion, I also became connected with the Washington State Dairy Federation and the Western Organic Dairy Producers Alliance, attending conferences and trade shows and

meeting dairy farmers who also were producing organic milk. Through those contacts, and learning from their experiences, I became further aware of effective new methods of soil preparation, planting, and harvesting. The value of these contacts extended far beyond the countless tips I picked up; by meeting people who had done what I wanted to do gave me a deeper level of insight, comprehension and confidence I could not have come by any other way.

Business Plan

With my vision in place, an evaluation completed, and my learning process well on its way, I then set out to develop my business plan for the transition to organic growing at Black River Ranch. My plan, which followed the business plan template that is outlined in Chapter Three on pages 52-53, is on the following pages.

I. Executive Summary

The purpose of this plan is to develop a strategy to transition from conventional farming techniques to organic growing in a profitable manner. Over a four-year period, the project will be implemented on a 350-acre parcel of land that is a leased portion of a dairy farm in Thurston County, Washington. This plan is a response to the growing interest in, and importance of, foods that are grown without the use of potentially harmful chemicals and synthetic substances. Along with

learning the techniques, marketing our products, and making a profit, this plan is also intended to educate and raise awareness in the community of the benefits of growing organic produce.

As stated above, this transition will take place over four consecutive years. This will include the three-year timeframe required to earn organic certification status from the Washington State Department of Agriculture for the entire 350 acres, plus one year following certification status. Currently, 330 acres are producing corn silage (feed for dairy cows), which we want to continue during and after the transition. We also will explore the potential of eventually growing nursery stock on our land to sell for additional revenues.

Although I currently produce between 23 and 30 tons of corn silage per acre, I expect that yield to drop to 18 tons per acre, a 33 percent decrease, due to changes in weed competition and fertilizer application. I also anticipate that my expenses will increase 30 percent because of the additional labor that will be required, the added fuel needed for weed control, and expenses related to equipment upkeep. I expect that after four years, my sales revenues will go up approximately 75 percent based on the higher prices I will get for certified, organically grown animal feed.

Finally, I have the equipment, staff, and knowledge of basic farming techniques, all of which I can use and apply as I make this transition.

II. Mission Statement

The mission of this project is to make the transition from the conventional production of crops to an organic production practice in a profitable manner.

III. Main Project Goals

- A. To educate myself and my staff in the field of organic growing.
- B. To obtain organic certification in Washington State.
- C. To plant and harvest crops and plants that conform to certified organic growing principles and practices.
- D. To make organic animal feed available to local dairy farmers.
- E. To increase local awareness of the health and environmental benefits derived from organic crops.
- F. To make the transition successful and profitable.

IV. Strategies for Achieving Goals

- A. Conduct research, join local and regional organic farming associations, and establish relationships with others in the local organic community.
- B. Learn, follow, and complete the certification requirements of the WSDA.
- C. Implement operational procedures for growing organic corn silage: prepare soil, select seeds, apply manure (dairy farm by-products), plant seeds, water and weed plantings to optimize growing and nutrient uptake, evaluate maturity of corn crop, harvest and store crops, perform annual evaluation of operational procedures, market and distribute corn silage to local dairy farms.
- D. Implement similar, applicable operational procedures for planting, growing, harvesting, and selling organic plant material (for nursery stock); increase acreage for nursery stock from two acres in Year 2 to ten acres in Year 4.
- E. Implement similar, applicable operational procedures for planting, growing, harvesting and selling a winter cover crop, e.g., winter wheat, rye, and/or triticale. This will enrich the soil, discourage or eliminate weed growth, and generate additional revenue after it is harvested in the spring.

- F. Develop an overall communication plan including a website and printed handouts designed to let other growers learn about the methods and benefits of organic farming.

V. Strengths and Challenges

A. Strengths

1. My own five-plus years of experience growing corn silage, as well as a four-person staff of experienced growers.
2. Personal desire to learn and implement healthier growing techniques and to promote the benefits of organic farming.
3. Availability of land offering fertile soil and water.
4. Well-established reputation for providing competitively priced feed to local dairy farmers.
5. Well-established local nursery with existing customer base for sales of nursery stock.
6. Availability of existing equipment, tools, and staff.
7. Supportive community of organic growers and resources.
8. Increasing trends toward organic food production and supporting local growers.

B. Challenges

1. Inability to predict temperature, rainfall, and other conditions critical to successful growing.
2. Uncertain market conditions for purchasing fuel and seeds, as well as a globally influenced commodities market for selling animal feed.

VI. Anticipated Customer Base

- A. Local dairy farmers
- B. Local and regional nurseries and garden centers (for nursery stock and vegetables)
- C. Farmers' markets for nursery stock
- D. Other growers of animal feed

VII. Description of Anticipated Expenses

- A. Field preparation: The price per acre is based on expenses related to all labor, vehicles, attachments, fuel, and maintenance needed to plow, turn, loosen, and level each field in preparation for amending and planting.
- B. Corn and Cover Crop: The price per acre includes the purchase of corn seed, cover crop seed, and the vehicles, equipment, and labor required to plant them.

- C. Manure application: This price includes the cost of labor, vehicles, equipment, fuel, and associated maintenance costs related to manure application. These costs must also include the electricity needed to operate manure pumps.
- D. Water management: This includes the cost of electric well operations and the labor, equipment, fuel, and maintenance needed to irrigate fields.
- E. Weed Control: The price includes the costs associated with weeding each corn field at least three times between planting and harvesting.
- F. Costs of chemical herbicides and pesticides: There will not be any cost for chemicals.
- G. Harvesting of corn and cover crop: Costs include labor, supplies, vehicles, maintenance, and fuel for the harvesting machine, transporting, and storage of corn.
- H. Nursery stock (after Year 1): The price per acre includes the purchase of organic nursery stock from certified vendors, and the labor and equipment needed to plant the stock in rows that will allow for proper weed control and digging.

(See tables of anticipated expenses on the following pages.)

Table 1: Anticipated Expenses/Corn & Cover Crop, YEAR 1

Operating Costs	330 acres corn & cover crop, organically grown, <i>non-certified</i>	20 acres corn & cover crop, organically grown, <i>certified</i>
Field preparation @ \$80/acre	\$ 26,400	\$ 1,600
Purchase corn & cover crop seed; plant seeds @ \$63/acre	\$ 20,790	\$ 1,260
Manure applications @ \$23/acre	\$ 7,590	\$ 460
Water management @ \$115/acre	\$ 37,950	\$ 2,300
Weed control @ \$115/acre	\$ 37,950	\$ 2,300
Chemicals & associated costs	\$ 0	\$ 0
Harvesting costs @ \$200/acre	\$ 66,000	\$ 4,000
Total Anticipated Expenses, Year 1	\$ 196,680	\$ 11,920

Table 2: Anticipated Expenses/Corn, Cover Crop, Nursery Stock, YEAR 2

Operating Costs	330 acres corn & cover crop, organically grown, <i>non-certified</i>	18 acres corn & cover crop, organically grown, <i>certified</i>	2 acres nursery stock, organically grown, <i>certified</i>
Field preparation @ \$80/acre	\$ 26,400	\$ 1,440	\$ 160
Purchase corn & cover crop seed & plant @ \$63/acre	\$ 20,790	\$ 1,134	n/a
Manure applications @ \$23/acre	\$ 7,590	\$ 414	\$ 46
Water management @ \$115/acre	\$ 37,950	\$ 2,070	\$230
Weed control @ \$115/acre (corn silage)	\$ 37,950	\$ 2,070	n/a
Purchase, plant, & maintain nursery stock @ \$2,900/acre	n/a	n/a	\$5,800
Weed control @ \$200/acre (nursery stock)	n/a	n/a	\$ 400
Chemicals & associated costs	\$ 0	\$ 0	\$ 0
Harvesting costs @ \$200/acre	\$ 66,000	\$3,600	n/a
Total Anticipated Expenses Year 2	\$ 196,680	\$ 10,728	\$6,636

Table 3: Anticipated Expenses/Corn, Cover Crop, Nursery Stock, YEAR 3

Operating Costs	330 acres corn & cover crop, organically grown, non-certified	18 acres corn & cover crop, organically grown, certified	2 acres nursery stock, organically grown, certified
Field preparation @ \$80/acre	\$ 26,400	\$ 1,440	\$ 160
Purchase corn & cover crop seed & plant @ \$63/acre	\$ 20,790	\$ 1,134	n/a
Manure applications @ \$23/acre	\$ 7,590	\$ 414	\$ 46
Water management @ 115/acre	\$ 37,950	\$ 2,070	\$230
Weed control @ \$115/acre (corn silage)	\$ 37,950	\$ 2,070	n/a
Purchase, plant, & maintain nursery stock @ \$2,900/acre	n/a	n/a	\$5,800
Weed control @ \$200/acre (nursery stock)	n/a	n/a	\$ 400
Chemicals & associated costs	\$ 0	\$ 0	\$ 0
Harvesting corn & cover crop @ \$200/acre	\$ 66,000	\$3,600	n/a
Harvesting nursery stock @ \$500/acre	n/a	n/a	\$1,000
Total Anticipated Expenses Year 3	\$ 196,680	\$ 10,728	\$7,636

Table 4: Anticipated Expenses/Corn, Cover Crop, Nursery Stock, YEAR 4

Operating Costs	340 acres corn & cover crop, organically grown, certified	10 acres nursery stock organically grown, certified
Field preparation @ \$80/acre	\$ 27,200	\$ 800
Seeds & planting corn & cover crop @ \$63/acre	\$ 21,420	n/a
Manure application @ \$23/acre	\$ 7,820	\$ 230
Water management @ \$115/acre	\$ 39,100	\$ 1,150
Weed control (corn) @ \$115/acre (mechanical)	\$ 39,100	n/a
Purchase, plant, & maintain nursery stock @ \$2,900/acre	n/a	\$ 29,000
Weed control (nursery stock) @ \$200/acre (mechanical & manual)	n/a	\$ 2,000
Chemicals & associated costs	\$ 0	\$ 0
Harvesting corn & cover crop @ \$200/acre	\$ 68,000	\$ 0
Harvesting nursery stock @ \$500/acre	n/a	\$5,000
Total Anticipated Expenses, Year 4	\$ 202,640	\$ 38,180

VIII. Anticipated Revenue & Net Profit

A. YEAR 1

On all 350 acres, I will be growing corn silage during the summer growing season and a cover crop during the winter. Although I will use only organic methods of crop production on the entire parcel of land, I can only market and sell the corn grown on a 20-acre section—where no chemicals have been used in more than three years—as *certified organic*. Grown organically, each acre will typically yield at least 18 tons of corn. With the certified organic label, a ton of corn can be sold at the market rate of \$58. Corn sold without the certified organic label can be sold for \$32.

Table 5: Anticipated Revenue & Net Profit, YEAR 1

330 acres; crops are sold without certified organic label	20 acres; crops are sold as certified organic
CORN REVENUE: 18 tons/acre @ \$32/ton = \$190,080	CORN REVENUE: 18 tons/acre @ \$58/ton = \$20,880
COVER CROP REVENUE: 4 tons/acre @ \$20/ton = \$26,400	COVER CROP REVENUE: 4 tons/acre @ \$20/ton = \$1,600
TOTAL REVENUE: \$216,480	TOTAL REVENUE: \$22,480
TOTAL EXPENSES: \$196,680	TOTAL EXPENSES: \$11,920
NET PROFIT: \$19,800	NET PROFIT: \$10,560

B. YEAR 2

During this year’s major growing season, I will grow mostly corn silage and also some nursery stock; I will continue growing cover crop during the winter season. Again, I will use only organic growing methods on the entire parcel of land, but I can only market and sell the corn grown on the 20-acre section—where no chemicals have been used in more than three years— as *certified organic*. Like the first year, each acre planted with corn is expected to yield at least 18 tons of corn. I anticipate that market prices for both certified organic and non-certified corn silage will remain relatively consistent. On two acres of the chemical-free land, I will plant and grow trees for nursery stock, which I will be able to sell next year at my family’s nursery.

Table 6: Anticipated Revenue & Net Profit, YEAR 2

330 acres; crops are sold <i>without</i> <i>certified organic</i> label	18 acres; crops are sold as <i>certified organic</i>	2 acres of nursery stock, can be sold next year as <i>certified organic</i>
CORN: 18 tons/acre @ \$32/ton = \$190,080	CORN: 18 tons/acre @ \$58/ton = \$18,792	n/a
COVER CROP: 4 tons/acre @ \$20/ton = \$26,400	COVER CROP: 4 tons/acre @ \$20/ton = \$1,440	n/a
TOTAL REVENUE: \$216,480	TOTAL REVENUE: \$20,232	n/a
EXPENSES: \$196,680	EXPENSES: \$10,728	EXPENSES: \$6,636
NET PROFIT: \$19,800	NET PROFIT: \$9,504	NET LOSS: \$6,636

C. YEAR 3

This year, on all 350 acres, we are again growing corn silage, a cover crop, and nursery stock. Once again, all activities will follow only organic growing methods, but I have one more year before I can sell all the corn and cover crop I grow as *certified organic*. Like the first year, I expect each acre planted with corn to yield at least 18 tons of corn. I anticipate that market prices for both certified organic and non-certified corn silage will remain relatively consistent. On two acres of the chemical-free land, I have been maintaining the small fruit trees I planted last year; I can sell them this year at my family's nursery for \$2 per plant.

Table 7: Anticipated Revenue & Net Profit, YEAR 3

330 acres; crops are sold <i>without certified organic label</i>	18 acres; crops are sold as <i>certified organic</i>	2 acres nursery stock; can be sold as <i>certified organic</i>
CORN: 18 tons/ acre @ \$32/ton = \$ 190,080	CORN: 18 tons/acre @ \$58/ton = \$ 18,792	2,500 plants /acre @ \$2/plant (sold wholesale) = \$10,000
COVER CROP: 4 tons/acre @ \$20/ton = \$26,400	COVER CROP: 4 tons/acre @ \$20/ton = \$1,440	n/a
TOTAL REVENUE: \$ 216,480	TOTAL REVENUE: \$ 20,232	TOTAL REVENUE: \$ 10,000
EXPENSES: \$ 196,680	EXPENSES: \$ 10,728	EXPENSES: \$ 7,636
NET PROFIT: \$19,800	NET PROFIT: \$ 9,504	NET PROFIT: \$ 2,364

D. YEAR 4

My entire growing operation is now certified organic by Washington State because it has been three full years since any chemicals or pesticides have been applied to any portion of the 350 acres that I lease. Therefore, all crops grown can now be marketed and sold as *certified organic* at the higher market prices. I can now sell nursery stock at a minimum of \$5 per plant as the trees have grown for one or two more years.

Table 8: Anticipated Revenue & Net Profit, YEAR 4

340 acres All crops <i>certified organic</i>	10 acres nursery stock <i>certified organic</i>
CORN: 18 tons/acre @ \$58/ton = \$ 354,960	1,000 plants/acre @ \$5/plant (average, sold wholesale) = \$ 50,000
COVER CROP: 4 tons/acre @ \$20/ton = \$ 27,200	n/a
TOTAL REVENUE: \$382,160	TOTAL REVENUE: \$ 50,000
EXPENSES: \$202,640	EXPENSES: \$ 38,180
NET PROFIT: \$ 179,520	NET PROFIT: \$ 11,820

(END OF ANTICIPATED REVENUES & NET PROFIT)

IX. Areas for Potential Growth and Diversification

- A. Sale of growing nursery stock
- B. On-line sales of nursery stock
- C. Sale of other organically grown feed, produce, and trees
- D. Sale of organically grown plants as natural medicines

X. Staffing Needs

- A. One full-time Operations/Marketing Manager:

- 1. Qualifications

- a. 5+ years of experience in farming and crop production
- b. minimum one year marketing experience with farm-produced feeds, produce, and nursery stock
- c. familiarity with benefits of organic growing and organic crop consumption
- d. Proven experience and success in all aspects of farm operations including planting, watering, harvesting, equipment maintenance, transportation, storage, and marketing

- 2. Responsibilities

- a. all scheduling and documentation regarding employees, operations, production, and distribution of product

- b. remain up-to-date regarding weather patterns and predictions in order to schedule and monitor all farming operations
 - c. manage and perform year-round maintenance on farm equipment and vehicles
 - d. maintain organic certification and compliance
 - e. participate in and maintain membership with educational, agricultural, and—specifically—organic resources and certification associations
 - f. cultivate and maintain farm’s relationship with WSDA
 - g. research, negotiate, and purchase seeds, equipment, and supplies
 - h. submit required reports and meet weekly with employees and business owner
3. Compensation: \$35-50,000 annually based on education and experience; competitive benefit package
- B. One part-time Bookkeeper/Office Manager (10-20 hours/week during growing season; 5 hours/week during off season)
- 1. Qualifications
 - a. 3+ years of experience
 - b. proven ability in all aspects of accounting and bookkeeping
 - 2. Responsibilities
 - a. oversee all accounting and bookkeeping activities

- b. conduct monthly and seasonal budgeting
 - c. maintain and track all business transactions and activities
 - d. maintain all documentation regarding compliance/
certification
 - e. maintain open communication among staff and with
outside vendors, customers, and organizations
3. Compensation: \$17 per hour
- C. Five full-time Equipment/Transport Operators (during
growing/harvesting season only; weekly hours vary)
- 1. Qualifications
 - a. CDL (Commercial Driver's License) or equivalent
 - b. safe driving record
 - c. experience in equipment and vehicle maintenance
 - d. familiarity with growing and harvesting crops,
specifically using organic methods
 - 4. Responsibilities
 - a. operate all farm equipment and vehicles for the purpose
of planting, growing, harvesting and transporting crops
 - b. follow all safety requirements and recommendations
 - c. assist with the maintenance of equipment and vehicles
 - d. be present in a timely and reliable manner
 - 5. Compensation: \$15 per hour

(END OF BUSINESS PLAN)

ACTION PLAN

Year One:

- Harvest, store & sell cover crop
- Apply liquid manure
- Disk fields
- Purchase & plant organic corn seeds
- Apply water
- Control weeds as necessary
- Re-apply liquid manure
- Apply water until harvest
- Control weeds as necessary
- Harvest, store & cover corn
- Market and sell corn
- Evaluate year's outcomes and identify adjustments needed for Year Two

Year Two:

- Harvest, store & sell cover crop
- Apply liquid manure
- Disk fields
- Purchase & plant organic corn seeds
- Plant & maintain nursery stock
- Apply water
- Control weeds as necessary
- Re-apply liquid manure
- Apply water until harvest
- Control weeds as necessary
- Harvest, store and cover corn
- Market and sell corn
- Evaluate year's outcomes and identify any adjustments needed for Year Three

Year Three:

- Harvest, store & sell cover crop
- Apply liquid manure
- Disk fields
- Purchase & plant organic corn seeds
- Apply water
- Control weeds as necessary
- Re-apply liquid manure
- Apply water until harvest
- Control weeds, as necessary
- Harvest, store & cover corn
- Market and sell corn
- Dig nursery stock to prepare to sell
- Market and sell nursery stock
- Evaluate year's outcomes/
identify adjustments needed
for Year Four

Year Four:

- Harvest, store & sell cover crop
- Apply liquid manure
- Disk fields
- Purchase & plant organic corn seeds
- Apply water
- Control weeds as necessary
- Re-apply liquid manure
- Apply water until harvest
- Control weeds, as necessary
- Harvest, store & cover corn
- Market and sell corn
- Dig nursery stock to prepare to sell
- Market and sell nursery stock
- Evaluate year's outcomes/identify
adjustments needed for
subsequent years

CHAPTER V

CONCLUSION

The purpose of this thesis has been to demonstrate the potential economic benefits associated with making a transition from conventional to organic crop production, and then continuing to grow crops using organic practices. Through this study, we have seen not only the tremendous social and health benefits of organic farming but we have proven that profitability is definitely possible.

To begin this thesis, I introduced the Wickie and O'Neill families, both well ahead of their time in terms of recycling and implementing sustainable farming practices. I also explored my personal interest in continually protecting and improving the environment by utilizing recycled products and reducing the use of harmful substances.

We met the early pioneers of organic crop production and became familiar with their individual contributions to the field. We reviewed the rules and regulations of certified organic crop production in the state of Washington. We also presented a suggested business plan for making the transition from conventional to organic growing, as well as an example of that type of business plan. Finally, we described an actual case study for this type of transition that was implemented at the Black River Ranch in Thurston County,

Washington. Based on the profitability we saw in the case study just four years after beginning the transition to organic growing, and with continuing sales activity for animal feed and nursery stock, we have concluded that there is a viable market for all, and therefore this is the direction in which we will continue.

In addition to proving that there are economic benefits to growing organic crops, my research also gave me abundant opportunities to personally experience the welcoming and inclusive organic farming community by reaching out to a number of seasoned and knowledgeable growers. Through numerous phone calls, e-mails, and visits—including an actual trip to the famed Rodale Institute in rural Pennsylvania—I was able to ask direct, meaningful questions and learn the basic fundamentals of their successful farming practices.

This experience has also allowed me to ‘unearth’ additional intangible benefits that come with the organic growing of crops. I have become better informed and inspired by the level of interest and the amount of research being done across the country and around the world, by the innovative new equipment being designed and developed, and by the accessibility of people and resources that can help to further our knowledge and expand our shared vision of the benefits of organic crop production.

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APPENDIX A

RECOMMENDED GOVERNMENT PUBLICATIONS

Following is a list of recommended publications produced and provided by the United States Department of Agriculture (USDA) and the Washington State Department of Agriculture (WSDA). Each contains helpful information and certification guidelines that will be of interest to anyone who is learning about organic farming and essential to a successful transition from conventional to organic growing.

The following USDA National Organic Program information is available at <http://www.ams.usda.gov/AMSV1.0/nop>:

- *What is Organic?*
- *National Organic Program Mission*
- *Organic Standards & Regulations*
- *National Organic Standards Board*
- *Organic Certification & Accreditation*
- *List of Certified Operations*
- *Compliance & Enforcement*

The following WSDA publications are available through the Washington State Department of Agriculture Organic Food Program, 1111 Washington Street SE, PO Box 42560, Olympia, WA 98504-2560, (360) 902-1805), <http://agr.wa.gov/foodanimal/organic/>

■ *WSDA Organic Certification New Application Packet/*

Crop Producer

Packet includes the following, *in this order:*

- AGR 2510: Table of Contents
- AGR 2508: Organic Labeling Guidance - Producers
- AGR 3000: Certification Fact Sheet
- AGR 2289: Application for Organic Certification - Producers
- AGR 2281: Organic Operator Agreement
- AGR 2259: Organic Certification Fee Form - Producers
- AGR 2509: Organic Yields and Sales Estimates - Producer
- AGR 2121: Organic System Plan – Crop Producer
- AGR 2264: Site Application - Producers
- AGR 2262: Previous Land Use Declaration
- AGR 2282: Organic Cost Share Application
- AGR 2261: Organic Seed Commercial Availability Record
- AGR 2161: Organic Material Application Record

- WSDA Organic Food Program, *2007 Brand Name Material List*
AGR PUB 420-029
- WSDA Organic Food Program, *Organic Crop Production*, AGR PUB
420-175
- WSDA Organic Food Program, *Organic Rules and Regulations*,
AGR PUB 420-209
- WSDA Organic Food Program, *Guide to Organic Certification*,
AGR PUB 420-237

APPENDIX B

SAMPLE BUSINESS PLAN

Following is a sample business plan for a small farming project. This example can be easily followed when making a transition from conventional to organic farming. It covers a period of four years in order to allow for the three-year waiting period needed for a complete transition to certified organic status, followed by one full year operating at the certified level. In this fictitious scenario, the crops being grown are carrots and potatoes for human consumption. (Author's note: This is an example of a business plan and it should not be confused with the Case Study Business Plan in Chapter 4.)

It is important to point out that this is an *anticipated* business plan which allows for the frequent and unexpected variables that are inherent in the farming industry. While we will focus on the main goals of our business plan—which meet the 'SMART' criteria of specific, measurable, achievable, realistic, and within a time frame—our planning process will be flexible enough to allow for changes or adjustments that may be needed (Sisson, www.suitcaseentrepreneur.com/tag/one-page-business-plan/). We may decide to diversify our crops, for example, based on changes in weather patterns, availability of labor, or market demand.

SAMPLE BUSINESS PLAN

I. Executive Summary

Building on the global trend toward more natural lifestyles and away from reliance on potentially harmful farming practices, our intention is to convert approximately 100 acres of conventional farmland in Thurston County, Washington, to certified organic farmland. This process will take three years, which is the timeframe required for Washington State Department of Agriculture certification. Currently, the acreage is producing carrots and potatoes, which we want to continue to grow during and after our transition. We also will explore the potential of growing other vegetables once we have achieved certification status. Another aspect of our plan is to promote community awareness of the benefits of organic consumption.

We have been farming this land for five years using conventional farming practices. We have the equipment, staff, and knowledge of basic farming techniques, all of which we can use and apply as we make this transition. Although we currently produce approximately 29 tons of carrots per acre and 31 tons of potatoes per acre, we anticipate that, based on our research, our crop output will initially decrease 33 percent due to differences in weed competition and

fertilizer application. We expect that our expenses will increase approximately 30 percent due to the additional labor required as well as more fuel consumption and increased maintenance on our equipment. However, our sales revenues should increase up to 75 percent due to the greater market value of organic carrots and potatoes.

The most significant change that will take place during this transition will be the shift from the use of costly, potentially harmful chemical pesticides to the use of more affordable, natural fertilizers (from animal by-products) and other growing methods that promote health and wellbeing. These changes will not only reduce costs over the long term but will help to create a system of "agriculture that is in harmony with the natural world" (Coleman, 1995).

II. Mission Statement

Our mission is to make the transition from conventional to certified organic farming in order to generate a profit, improve the environment, and enhance and promote personal and community health.

III. Main Goals

- A. To become more educated in the field of organic growing.
- B. To obtain organic certification in Washington State.

- C. To plant and harvest healthy crops in accordance with organic growing principles and practices.
- D. To make organic crops available to the community.
- E. To increase local awareness of the health and environmental benefits derived from the consumption of certified organic crops.

IV. Strategies for Achieving Goals

- A. Conduct extensive research, join local and regional organic farming associations, and establish relationships with others in the local organic community.
- B. Learn, follow, and complete the certification requirements of the WSDA.
- C. Implement operational procedures: prepare soil, select seeds, apply manure (dairy farm by-products), plant seeds, water and weed plantings, evaluate maturity of crops, harvest and store crops, perform annual evaluation of operational procedures.
- D. Market and distribute products.
- E. Create educational materials, develop and maintain a website, and seek opportunities for teaching others about the benefits and practices of organic crop production.

V. Strengths and Challenges

A. Strengths

1. Skilled, motivated leadership
2. Existing farmland, water sources, tools, and equipment
3. Supportive community of organic growers and abundant resources
4. Proven market trend toward organic food consumption
5. Proven market trend toward buying local products

B. Challenges

1. Unpredictable farming conditions, e.g., temperatures, rainfall
2. Difficulty in finding skilled labor familiar with organic growing methods
3. Struggling, uncertain regional economy

VI. Anticipated Customer Base

- A. Farmers markets
- B. Nurseries
- C. Canning companies
- D. Other organic growers

VII. Estimate of Anticipated Expenses (labor, seeds, water, fuel, equipment, marketing)

- A. Year 1 (conventional): \$50,000
- B. Year 2 (conventional): \$50,000
- C. Year 3 (conventional): \$50,000
- D. Year 4 (organic): \$80,000

VIII. Estimate of Anticipated Gross Income (from sales of carrots and potatoes)

- A. Year 1 (conventional): \$75,000
- B. Year 2 (conventional): \$75,000
- C. Year 3 (conventional): \$75,000
- D. Year 4 (organic): \$125,000

IX. Areas of Potential Diversification/Growth

- A. Various cover crops (e.g., legumes and grasses)
- B. Additional organic crops based on market demand (e.g., nursery stock)
- C. Offsite equipment use/rental
- D. On-site farmers market/community gardens

X. Staffing Requirements, Qualifications and Responsibilities

- A. Operations Manager: 5+ years of experience in farming and crop production; responsible for overseeing all aspects of planting, watering, harvesting, equipment, transportation, storage.
- B. Marketing Specialist: 2+ years of marketing experience, familiar with benefits of organic growing and organic crop consumption; responsible for marketing and selling the vegetables to local vendors and maintaining memberships with local educational and agricultural organizations.
- C. Office Manager/Bookkeeper: 3+ years of experience; responsible for budgeting, record keeping, accounts payable and receivable, compliance documentation, and communication.
- D. Equipment/Transport Operators: safe, skilled, licensed, and reliable for maintaining, harvesting, and transporting crops; should have safe driving record and experience in equipment and vehicle maintenance.

APPENDIX C

Black River Ranch / Organic Transition Placement Maps



