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Case Study

Red Stick Farm: Planning for the Future

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Abstract

This case explores the relation between decision making, strategic management, and risk management in a newly established farm operation. Red Stick Farm is a family-operated, small-scale, urban farm that uses intensive growing techniques to produce vegetables, microgreens, and edible flowers in the greater Baton Rouge area. The operation has been in production for three years, and the two operators are examining two mutually exclusive strategies to grow their farm. The first strategy allows them to expand their customer base by offering a community-supported agriculture (CSA) program; the second strategy allows them to increase production capacity by acquiring more land. The case challenges students to assess the current situation of the farm and future direction following strategic business planning practices. The study highlights the importance of defining and developing an operation's mission statement, exploring growth strategies, assessing the internal strengths of the operation and external threats to the operation, and identifying respective risks. In addition, the examples illustrated through this case study will assist new and beginning farmers who are interested in urban farming practices as they monitor, identify, and manage risk on their farms.

1 Introduction

It is a sunny and cool April afternoon in Baton Rouge, Louisiana. Al and Grace are wrapping up the day, checking the tomato seedlings and the colorful containers of marigolds. Edible flowers are the newest addition to their production, and they were pleased to see that the plants sustained the volatile spring weather: weeks of rain, flash flooding in the area, and now a prediction for higher than normal temperatures. However, today was a pleasant day, partly cloudy and with a cool breeze, which helped with working in the field.

Three years have passed since they started farming on just half an acre. Red Stick Farm is an urban agricultural operation that was established in March 2015 in the outskirts of Baton Rouge. Their mission is "to provide their family and local community with the freshest, most nutritious vegetables year-round." Their "big garden," as Grace used to call it, turned into an intensive-growing, sustainable farm producing high quality vegetables based on noncertified organic practices. The farm has been their home, their shelter, and the heart of their social circle. It has brought them closer to the community and helped them establish relationships with other beginning and young farmers throughout Louisiana. Becoming farmers was challenging, coming with seven-day workweeks, strenuous physical activities, and many trials and errors, as well as coping with intellectual challenges and the uncertainty of financial returns. Still, they loved the idea of working with the soil. Thinking back, they may not have started if the conditions were not in their favor.

Grace grew up in Baton Rouge, Louisiana. She remembers seeing the vast rice and sugarcane fields that formed a natural barrier on the outskirts of the city. Two worlds, the city and the fields blending together, make it hard to see where the city limits end and where the fields start. The warm and moist Louisiana climate favored these crops, but the fertile soil also provided a great opportunity for smaller horticulture farms like the one next to her house, only half an acre growing vegetables year-round. Grace

knew that agriculture does not always mean big-scale production. Al, on the other hand, was somewhat familiar with larger row crop operations.

Al, a northeastern Louisiana native, had family in the cotton business for many years. However, they discontinued farming and filed for bankruptcy in 1987 when Al was five years old. Al had faint memories of the cotton farm, but he remembered his grandfather's stories about the time the farm was booming and cotton was "the king." He always wanted to become a farmer and continue his family's tradition, but he was appreciative of the risks and challenges that come with farming. He used to say, "There is not much you can do about weather ... but having and maintaining a financially healthy business that is a challenge." Al met Grace in college. He was an agribusiness major, and she studied psychology.

After Grace's recommendation, Al started helping at the campus community garden to get some hands-on experience. There he learned about soil, pest, and weed management. Sometimes, Grace volunteered at the campus community garden as part of her horticulture and soil classes. After all, gardening was always her passion, so she minored in soil sciences. She started her own garden in a part of her parent's backyard in high school and shared the veggies she grew with family and neighbors, enjoying seeing the smiles it brought to their faces. "Monoculture is not my thing! Why wait when you can grow crops in rotation year-round? Intensive growing techniques allow you to maximize production on limited space," she used to tell the interns at the campus community garden. After graduation, she took a two-year internship with an organic vegetable farm.

At their current capacity, they use intensive growing techniques allowing them to plant multiple times (about 3 to 4 times) on a plot, and they harvest year-round. The operation focuses on seasonal produce, herbs, and edible flowers; each accounting for 90 percent, 8 percent, and 2 percent of their production, respectively. Diversifying crops and following market trends, they were able to hit their production targets, which allowed them to meet cash flows, repay part of the loans, and increase their equity. Grace and Al take pride of their early success and plan to grow their operation. Grace would like to expand direct-to-consumer sales, adding a community-supported agriculture (CSA) operation, and keep the rental arrangements currently in place. Knowing Al, she expects he would have a different opinion, as lately he was looking into land purchasing options with their landowner.

Al and Grace know that to have a financially healthy and growing operation in the years to come, they need to have a clear business plan and make strategic decisions. They must assess their strengths and weakness, adapt to the environment, learn to identify and manage risks, and set goals they can achieve. In addition, they need to utilize the talents and expertise each one of them brings to the business. Grace has compiled a series of worksheets that would allow them to (1) define and develop a clear mission statement (Figure 1); (2) conduct a strengths, weaknesses, opportunities, and threats (SWOT) analysis (Table 1); (3) identify risks pertaining to their operation based on the five areas of risk, namely production, financial, marketing, human, and legal (Table 2); and (4) analyze strategies for growth opportunities. The farm is their sole income generating activity, so the goals they set, the decisions they make, and their future direction is of importance both for their farming enterprise and their livelihood.

2 Urban Agriculture and Urban Farming

Urban agriculture is a component of the local foods system, and its definition varies depending on the local context to which it is applied. Bailkey and Nasr (1999, p. 6) define urban agriculture as "the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in [and] around cities." Goldstein et al. (2011) offer a broader definition that encompasses the mission of urban agriculture to feed local communities. Examples of urban agriculture include backyard gardening; rooftop and balcony gardening; community gardening in vacant lots and parks; roadside urban fringe agriculture; urban farms; and livestock grazing in open space (Hendrickson and Porth 2012). Through these practices, farmers can grow a variety of produce in small, compact areas. Because of the increase in mechanization within the agricultural industry, urban farming has allowed producers to provide their community with fresh produce through untraditional means (Specht et al. 2014).

Customers	•Who are the operation's present and future customers?
Products or Services	•What are the operation's major products and services that are provided?
Markets	•Where does the operation compete?
Production Practices	•What is the operation's production practices?
Philosophy	•What are the basic beliefs, values, aspirations, and philosophical priorities of the operation?
Self-Concepts	•What are the operation's major strengths and competitive advantages?
Concern for Public Image	•What is the operation's public image? How do people see the farm?

Figure 1. Components of a Mission Statement

Adapted from Cochran, David, and Kendrick Gibson (2008)

Intensive growing techniques practiced in urban agriculture allow growing a larger volume of crops on a smaller plot of land. These techniques include intercropping, vertical planting, and intensive spacing (Koski 2012). Programs related to intensive farming include the Small-Plot Intensive Program, Square-Foot Gardening, and Market Gardener. These programs promote high-productivity techniques and farming using limited capital investments with a small farmer profitability of \$50,000 gross profit per year on less than one-acre plots (see Koski 2012).

Table 1. SWOT Analysis Guide

SWOT stands for strengths, weaknesses, opportunities, and threats. Below, you can find definitions of each of these aspects.

- Strength: internal enhancer; a positive that comes from within the business
- Weakness: internal inhibitor; a negative that comes from within the business
- Opportunity: external enhancer; a positive that comes from outside the business
- Threat: external inhibitor; a negative that comes from outside the business

Examples are listed in *italics*

Internal Environment	Strengths (+)	- <i>AI's degree in agricultural business</i>
	Weaknesses (-)	- <i>New venture for AI and Grace</i>
External Environment	Opportunities (+)	- <i>Easy access to markets</i>
	Threats (-)	- <i>Other organic farmers in the area</i>

Table 2. Risk Analysis Guide

Types of risk include:

- **Production risk:** Refers to an occurrence that affects the quantity or quality of a product produced.
- **Marketing risk:** Refers to uncertainty about prices producers pay and/or receive.
- **Financial risk:** Refers to a situation in which a producer borrows money to pay for an operation and any events that may affect their ability to repay that debt.
- **Legal risk:** Refers to policies imposed by governmental institutions that may affect production and the operation.
- **Human risk:** Refers to human problems and relationships that may affect an operation.

Some examples of the five risks have already been provided for you in *italics*.

Type of Risk	Examples	Strategies to Manage Risk
Production	- <i>Humid climate makes it difficult to grow certain crops, such as microgreens</i>	
Marketing	- <i>Not being able to label their products as organic because they are not USDA certified</i>	
Financial	- <i>New farming venture (no line of credit)</i>	
Legal	- <i>No contract for land agreement</i>	
Human	- <i>Labor intensive aspect of small-scale, organic farming increases risk for injury</i>	

3 The Organic Produce Industry

In recent years, the organic food industry has grown substantially. Between 1990 and 2006, organic food sales increased by approximately \$16 billion (Li, Zepeda, and Gould 2007). By 2010, the organic food industry was valued between \$60 and \$90 billion (Starr 2010). According to the 2018 Organic Industry Survey, organic food sales reached \$47.9 billion during this year (Gelski 2019). This attraction to organic produce can be attributed to increased consumer awareness about healthy and natural foods. The main reasons why most consumers purchase organic food products over nonorganic alternatives are because they are viewed as healthier, tastier, more environmentally friendly, and safer to consume (Hughner et al. 2007).

The number of organic farmers has increased in recent years. According to the 2017 U.S. Department of Agriculture (USDA) Census of Agriculture, there was a 26.8 percent increase in the number of organic farmers in the United States (USDA-NASS 2019). In Louisiana, there are currently 23 certified organic producers. This is a slight decrease from 2012, in which there were 27 certified organic farmers. To be considered “organic,” an agricultural product should (1) not be produced using synthetic chemicals; (2) not be produced on land in which synthetic chemicals have been used in the past three years; and (3) be handled according to an agreed upon plan between the producer and the certifying agent (Office of the Law Revision Counsel—United States Code 1990).

Organic production faces more challenges relative to conventional and industrialized farming practices. Since no synthetic chemicals, antibiotics, and hormones are allowed in organic production practices, produce grown using these methods depends heavily on its naturally occurring environment (Hahlberg, Alroe, Knudsen, and Kristensen 2006). There are fewer counteractive measures that producers can rely on when there is a defect in the environment, such as poor soil. In addition, organic

farming does not produce food products on the same scale as conventional farming. On average, organic farms produce smaller yields than conventional farms, but these yields can vary depending on system and site characteristics (Seufert, Ramankutty, and Foley 2012). Climate and weather conditions can also affect production. For example, excessive amounts of sun can cause extensive damage to the plant's cells and tissues; this is known as sunburn. This damage hinders the plant's ability to grow and results in unhealthy and unmarketable produce. Although plants grown using both organic and conventional practices are subject to the risk of sunburn, there may be fewer natural remedies that are mandated in organic production to help mitigate this risk. Special gardening techniques, like shade cloth, help to limit the amount of solar radiation that these plants are exposed to and allow produce to be grown in harsher environmental conditions (Maughan et al. 2017).

There are many benefits associated with organic farming. According to the Economic Research Service of the USDA, organic farming practices reduces the amount of pesticide residue that is found in food and water, lowers the amount of energy used, and enhances biodiversity within the environment (Greene et al. 2017). In addition, with the current shift in attitudes toward health, more consumers are looking to purchase locally grown organic produce (Detre, Mark, and Clark 2010).

4 The Buy Local Movement

The "buy local" movement, also known as locavorism, has become a popular movement for younger generations in recent years. This movement encourages consumers to be conscious about what foods they consume and to purchase locally grown food from farmers in their communities (Coit 2008). Even though the buy local movement is not an official, cohesive movement started by a particular individual or organization, it is a grassroots movement that is embraced by consumers who are passionate about consuming food produced in their communities and driven by consumer motivation (Coit 2008).

The driving force behind the buy local movement is a combination of four factors: (1) a sense of connection, (2) quality of products, (3) environmental impact, and (4) political and social support for a particular type of agriculture (Coit 2008). These four aspects of local food motivate individuals to purchase produce grown by people in their community. When participating in the buy local movement, consumers feel like they have a connection with the producers that grow their food that would otherwise not be had if they were to purchase produce from the supermarket. This established relationship helps make the food buying process more personable and reduces the potential post-purchase dissonance felt by consumers. Having this connection with producers also allows consumers to better understand the origins of the produce that they purchase (Curtis 2014; Papaoikonomou and Ginieis 2017).

The quality of locally grown food also plays a large role in the trend of the buy local movement. Because local produce has not traveled thousands of miles, it is fresher and tastes better compared with produce purchased at the supermarket (Coit 2008; Hill 2008). Individuals enjoy these products more because they feel as if they are of higher quality than nonlocal produce. Additionally, food production is highly energy intensive. Specifically, the agricultural industry consumes approximately one fifth of the petroleum in the United States (Coit 2008). Consumers that are more concerned with the health of the planet will be more likely to purchase locally grown produce. Purchasing food products produced within the community helps to eliminate the use of fossil fuels in transportation and packaging, creating a healthier environment. Finally, the buy local movement provides financial support for farmers in local communities (Zepeda and Li 2006; Coit 2008). Participating in this movement allows consumers to feel as if they are helping to support their neighbors and make contributions to the local economy.

One of the common places that local food exchanges can occur is at farmers markets (Martinez et al. 2010). Farmers markets are local events within a specific community, indicating that food sold there is more likely to be fresh and produced within the region (e.g., Bond, Thilmany, and Bond 2009; Martinez et al. 2010). Because these food products are produced within the community, its distanced traveled to the consumer is minimized, which reduces the amount of energy and fossil fuels used in the production and transportation processes. Through the purchase of food at farmers markets, consumers are able to

directly support their local farmer and also socialize (e.g., Lyon et al. 2009; Gumirakiza, Curtis, and Bosworth 2014). This gives them a feeling of giving back to the community and strengthening their local economy.

Consumers' desire to purchase locally grown produce and establish personal relationships with farmers in the community has caused an increase in the number of farmers markets that take place in the United States (Detre et al. 2010; Starr 2010). The trend of shopping at farmers markets has grown rapidly in recent years because people place value on knowing who grew their food (Schindler 2014). Face-to-face interactions between producers and consumers experienced at farmer's markets are important motivators in the buy local movement and help consumers find value in food products (Starr 2010). Studies have shown that "personal motives, particularly the desire to purchase locally grown products and fresh produce" are what drives generations, specifically millennials, to purchase produce at farmers markets (Detre et al. 2010, p. 22).

Another avenue of buying local produce is the CSA. CSA is a program in which consumers enroll to support local farmers in their community. CSAs originally had an emphasis on organic and sustainable agriculture (Ernst and Woods 2009; Volz et al. 2016; Woods, Ernst, and Tropp 2017). CSAs can be thought of as a collaboration between producers and consumers. Producers offer quality food and produce, and in exchange, consumers shelter the producers by sharing some of the production risks, by helping to finance production. Most CSA programs benefit from consumers who purchase a portion of the farm's future production before the growing season starts. Farmers are guaranteed early cash flows, allowing them to cover production expenses (Woods et al. 2017). This exchange provides the producers with extra financial security and capital, while ensuring that consumers receive local produce. CSAs are an alternative distribution system where consumers have access to healthy food options and locally sourced produce, and also they have direct contact with farmers (Jarosz 2011; Woods et al. 2017; Samoggia et al. 2019).

5 The Red Stick Farm

Red Stick Farm operates as a limited liability company (LLC). The farm is in the South Baton Rouge area and is about 15 miles away from the city's downtown. The farmland used to be part of a sugarcane plantation, but the current owner does not farm. Instead, parcels of the land have been used for residential development, and others are leased to soybean and corn producers. The parcel that Grace and Al work on is closer to residential properties and has a barn, which they use as their home. Currently, they have a five-year lease arrangement at a pre-negotiated rate with the landowner.

Starting their business and mapping closely market needs while growing their consumer base, Grace and Al specialized in leafy green production, mostly spring mix, arugula, kale, and mustard greens. During their second year, they added cherry tomatoes, peppers, cucumbers, and eggplants. In the third year of their operation, they invested in a greenhouse and added microgreens, edible flowers, and herbs. Most of their production focuses on vegetables, with about 2 percent of their production left experimenting with new crops and varieties. Soil management is an important aspect of Al and Grace's farming operation. They follow best practices to ensure and maintain soil fertility and avoid nutrient depletion. This includes crop rotation, crop diversity, interplanting, cover crops, and composting. Cover crops allow them to suppress weeds and increase organic matter in the soil.

They participate in two farmers markets, the Oak's Market and the Garden District Farmers Market. Both of these markets support new and beginning local producers, and offer educational opportunities on nutrition and health, as well as meal preparation seminars using fresh, local produce. For this reason, these markets attract a high-income customer base. The Oak's Market is a small market that occurs every Wednesday from 9 a.m. to 12 p.m. and is located only five miles from their farm. The vendor fee for this market is relatively low at \$50 per year. The Garden District Farmers Market is a slightly larger farmers market that is held every Saturday from 8 a.m. to 2 p.m. and is located twenty

miles from their farm. This market has more visitors on a weekly basis, but the vendor fee is significantly higher at \$250 per year.

For the last three years, the farm has been profitable with a gross profit of about \$50,000 per year, which has allowed them to repay their bank loan. However, Al and Grace still need to pay back their parents. When they started the farm, they put down \$20,000 of their own savings. They received \$10,000 from their parents and financed the remaining \$20,000 to begin the farm. Not having to buy land allowed them to invest the money straight into their operation, and they were able to transform the barn on the property into a house. Since they only farm a small portion of land, they did not invest in heavy equipment. Most of their expenses were on site preparation, cleaning up the land, and taking care of the soil. Other expenses included irrigation infrastructure and equipment, sprayers, manure and pesticides, and seeds. A cooler and a bagging station were also purchased within the first two months of operation.

Al and Grace are the two primary workers on the farm. Apprentices and volunteers from their local community help during labor-intensive periods, which includes planting, transplanting, and harvesting. Through their new and beginning farmers network, they have offered other farmers labor hours in exchange for sharing production practices. The network provides unofficial apprentices, and participants are able to experience working with other farmers on conditions that differ from their operation and try new hands-on techniques.

6 Looking Toward the Future

Grace and Al hope to expand their business in the future. They discussed many options that would allow them to grow their operation, reach more consumers, and increase profits. Both agreed that whatever strategy they decide to go with, they should not forget they should be true to their goals and not dilute the mission of their operation. In order to implement a growth strategy, they have set aside \$20,000 of their retained earnings. Through extensive discussions, they have agreed on two potential strategies that would fit their business model and budget. They still owe money to their parents, so selecting one strategy for the time is imperative because they will be applying for another loan.

Grace's preferred strategy is to add a CSA operation. Farmers are paid for their products at the beginning of the season, and consumers receive baskets with the freshest produce possible throughout the growing season. These early cash flows will allow them to pay for seeds, manure, and soil preparation costs without using their own savings. Grace also believes that integrating this program into their operation will create personal, long-lasting relationships with their customers in the Baton Rouge community. Since this is similar to a subscription service, it ensures that consumers will continuously receive produce even if they are not able to make it to the weekly Oak's or Garden District farmers markets. She compiled information on the strategy to share with Al (Table 3). Discussing with other producers that offer a CSA, she suggested pricing baskets at \$30 and providing this service to twenty

Table 3. Estimated Gross Profit per Market Channel

Variable	CSA ^a	Farmers Market ^b	Total
Sales by market channel	\$19,200 (~14%)	\$93,600 (~86%)	\$112,800
All production expenses based on market channel	\$10,176 (~53%)	\$48,672 (~52%)	\$58,848
Gross Profit	\$9,024	\$44,928	\$53,952

^a CSA calculated for two growing seasons, 16 weeks per season, \$30/week, 20 families.

^b Farmers markets: 52 weeks, \$30/week, 60 families

Note: Personal communication with CSA providers in Baton Rouge was used to get prices for the CSA basket and growing seasons. Estimates on the percentage of production expenses are from Pritchard and Polishuk (2018).

families. Taking into consideration their production cycle, Grace believes that a reasonable price for their CSA basket will allow them to offer a good amount of high quality vegetables. In addition, this strategy will allow them to continue going to the farmers markets and not lose their clientele.

On the other hand, Al would like to expand their production capacity by adding more land for production. He recently visited with the landowner and discussed the possibility of leasing another acre. The potential plot is next to theirs, which makes it easier with transporting equipment for land preparation and adding on existing infrastructure. This increase in acreage would allow them to grow more produce and reach larger markets, such as the larger farmers markets in New Orleans and mainstream restaurants in the surrounding areas that emphasize local and high quality cuisine. With this new land, they could continue to grow a wide variety of highly profitable produce and experiment with growing new types of produce. Al is concerned this investment may require a new loan to cover site preparation costs, but he sees the long-term potential (Table 4).

7 Discussion Questions

The focus of this study is on strategic management and business planning. It highlights the importance of defining and developing an operation's mission statement, assessing the internal strengths of the operation and external threats to the operation, identifying respective risks, and exploring growth strategies.

1. Using Figure 1, evaluate the effectiveness of the Red Stick Farm's mission statement and provide ways in which the mission statement can be improved.
2. SWOT analysis is a common tool used in business planning. Using the information provided and table 1 as a guide, conduct a SWOT analysis.
3. Based on the information on the Red Stick Farm and its' internal and external environment, please give examples of financial, production, legal, human, and legal risks that are associated with the operation. Discuss how they will be able to manage the respective risks. Use table 2 to record your answers.
4. Based on the information provided in the case study, identify the goals of the two farmers. Then discuss the two potential strategies found in the "Looking Toward the Future" section and identify advantages and disadvantages of each strategy. Refer to table 3 and table 4 for more information. Use your SWOT analysis and risk assessment to further assess the two strategies.
5. What other information would you need to be able to evaluate the two strategies?

Table 4. Costs of Acquiring Additional Land

Urban Farm Site Preparation Estimate (1-acre plot for an in-ground farm in the Baton Rouge area)		
<i>Personnel</i>		
Project Manager		\$5,000
	Subtotal	\$5,000
<i>Location</i>		
Environmental assessment		\$9,000
Land acquisition		variable
Site plan		\$5,000
Rezoning costs		variable
Permitting		\$1,000
Liability insurance		\$1,000
	Subtotal	\$16,000^a
<i>Preparation</i>		
Signage		\$500
Fencing		\$10,000
Contamination remediation		variable
Water connection		\$5,000
Soil		\$10,000
Wood chips		\$0
Tractor labor to spread soil and wood chips		\$5,000
	Subtotal	\$30,500
<i>Structures</i>		
Wash-pack station		\$2,000
Greenhouses and high tunnels		\$5,000
Cooler		\$5,500
Outdoor storage		\$5,500
Community shade structure		\$2,500
	Subtotal	\$20,500
Subtotal of All Urban Farm Site Preparation Estimate + remediation costs		\$72,000
<i>Growing and Selling During Year 1</i> (Estimate)		
Tools and growing supplies		\$15,000
Vehicle		\$2,750
Utility costs (water and electricity)		\$2,000
Accounting service		\$500
Website and social media: hosting, upkeep, design, etc.		\$1,800
Marketing and advertising		\$500
Farmers' labor		\$45,000
Computer		\$1,000
	Subtotal	\$68,550
Urban Farm 1 Year Estimate + remediation costs	Total	\$140,550

Note: Adapted from USDA "Urban Agriculture Toolkit" to reflect relevant costs for the operation in the case study.

^aNote: Does not include land acquisition costs.

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