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Case study of Agroindustrias La Granja

CASE STUDY

Patricio San Andrés[a] and Marcos Vega Solano[ⓘb]

[a]*Bachelor in Agribusiness Management, Family Business, Manabí, Ecuador*

[b]*Professor, Private Technology University of Loja, Executve Director of Innovation and Entrepreneurship, Center Prendho, San Cayetano Alto, Calle París y Jose Coronel, Loja, Ecuador*

Abstract

The following document is a case study of the company Agroindustrias La Granja, located in Honduras, Central America, dedicated to the production and sales of the non-traditional agriculture crop, mushroom of Paris. All its production is demanded by Tegucigalpa city. The case was developed with the objective that undergraduate and graduate students can find the problems and situations that a small and medium family firms could face. The student will be able to use several recommended analysis tools, such as SWOT analysis, analysis of optimal marketing mix (Kotler 5 P´s), cash flow, analysis of financial indicators and cost effectiveness indicators. The results are in the Teaching Note, which will be the teacher´s guide for the resolution of the case. Then, there will be a discussion of the case where the students will participate in order to find results and looking for the better solution of the case. In order to realize the case analysis, the students should follow the 'Harvard Business School' model. Finally, a framework will be handed to the students for the recognition of the data pursuing to get an action plan linked to a competitiveness strategy for the studied company.

Keywords: fresh mushroom, *Agaricus bisporus*, family business, competitiveness strategy
JEL code: M10

ⓘCorresponding author: mavega@prendho.com; masolano39@utpl.edu.ec

A teaching note has been prepared for this case study. Interested instructors at educational institutions may request the teaching note by contacting the author or IFAMA

1. Introduction

'A new dawn,' is the name Mr. Jaime Rojas Hetebrugge has chosen for his new project to seek a solution to problems that he had been experiencing for several months since he had discovered that high-energy costs were hindering his profitability. 'This can't be possible,' he exclaimed after reviewing a study that the Honduran national energy company, ENEE, had made for him, which concluded that his cooling systems remained turned on throughout the day because the greenhouses or production beds were not performing well and failed to maintain cold temperatures. At that moment, Mr. Rojas realized that he might be able to obtain lower costs by building new facilities rather than completely renovating his current facilities; this would mean making an expensive new investment, which posed several challenges:

- How to continue producing as the new investment unfolded?
- How cost effective would the new investment be?
- As a person who has always been reluctant to take on debt, how would he finance the development of this investment?
- In the event of taking on debt, what would the financing sources be?

These and other doubts arose in Don[1] Jaime's mind while he prepared for a new workday, certain that the patrimony he had forgotten together with his family after many years of hard work was in play.

2. Agroindustrias La Granja

2.1 General characteristics of the company

Agroindustrias La Granja is a family business dedicated to the production and commercialization of non-traditional horticultural crops. For the production of the Parisian Button Mushroom,[2] the company has four production beds, which are necessary due to the constant market demand for this crop, and a cold room for storage of the finished product. It also has a boiler for pasteurization and sterilization processes.

The Rojas family started the business in order to obtain an income and achieve economic stability since they had lost their main source of income in 1999. As a result, Mr. Rojas bought land near Zamorano University and began a new undertaking. From its founding to 2016, it continues to be the only company that produces fresh mushrooms in Honduras, where all of its production is marketed in the city of Tegucigalpa. It currently produces 2,000 pounds per month on average, although with new investment its productive capacity could be improved by expanding both production and the market. Figure 1 shows the company's annual evolution of production since the beginning of its operations.

Today the company has 4 employees and 3 persons in charge of the different company departments; Mr. Rojas is the General Manager, his spouse, Gloria, is Marketing and Sales Manager and their son, Nicolas Rojas, is responsible for production and product delivery as a Marketing Assistant. The positions were assigned according to need, even when they are not trained and suitable at 100% for the job, but each person was vital for the company since they were needed for marketing the product, handling the crop in the field and managing the business. General Manager Jaime Rojas was the one that led the company and dedicated himself to learning everything about mushroom cultivation. His spouse has always been very dedicated and is excellent at public relations so she was chosen to handle sales and marketing. Their son, Nicolas, has always supported the family and is the new generation that will keep the company on the right track in the future.

[1] In Honduras, 'Don' and 'Doña' are terms of respect and endearment used in reference to adults.

[2] Parisian Button Mushrooms: This is the most widely cultivated species of mushrooms, whose scientific name is *Agaricus bisporus* (Lange) Sing., belonging to the *Agaricaceae* family. The mycelia of this fungus are white so the mushrooms are often described as white mushrooms (Infoagro, 2016).

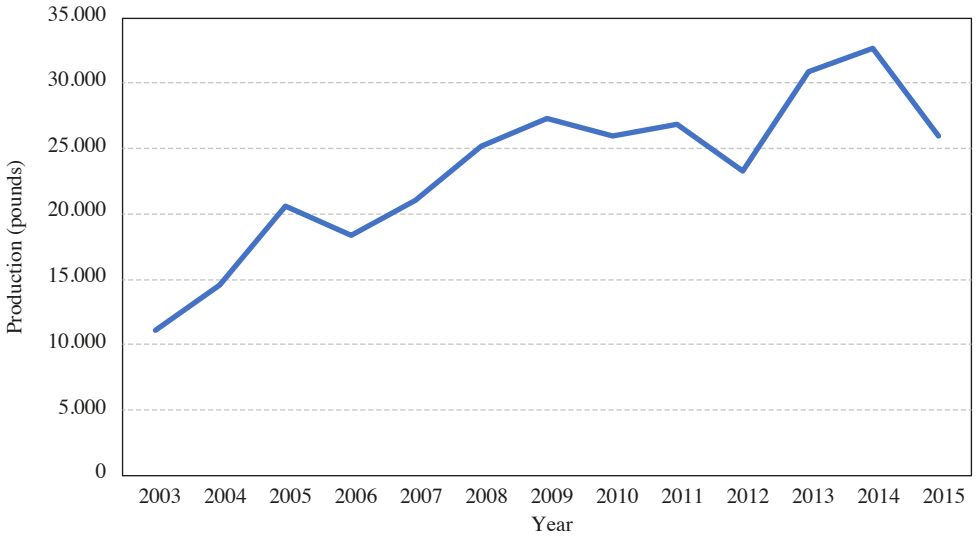

Figure 1. Annual evolution of mushroom production at Agroindustria LaGranja.

2.2 The company's evolution

After working as an Agricultural Communication Professor for nine years at Zamorano University[3] and the disaster of Hurricane Mitch in Honduras, in 1999 Jaime Rojas began looking for land in the Yeguare Valley near the University. He hoped to establish a business that would provide financial sustainability since seeking new employment at 58 was going to be a huge challenge. After looking at several options, he found a property next to the Yeguare River that caught his attention; it was about four acres and had passed the test because in spite of the huge flooding caused by the hurricane, the property had not been significantly affected. At a shop in a village near the property, more in jest than anything, the shop owner said to him in an offhand manner: 'Well, you could cultivate mushrooms here and sell them,' but Mr. Rojas did not take him seriously at first. Nonetheless, he slowly realized that proposition was valid. Since Mr. Rojas had no experience in agriculture, he wondered what he would do with his new property. At that time, his close friend Dr. Alfredo Montes worked at Zamorano as a horticulture specialist. Dr. Montes confirmed what the owner of the village shop had suggested: he could grow mushrooms on the four-acre property.

With a little support from Dr. Montes and some initial research in secondary sources, Jaime began that same year to build fencing and construct housing for his workers and for his own family with water from a surface well.

At this point, they began to design the first production houses, following European models that Jaime had encountered and taking advantage of the architecture he had studied for two years in his native Colombia. Thus, the construction progressed, using the cheapest model that he could design and a total of two employees; he also built a water storage tower and a roofed area for the storage of raw materials and preparation of substrate; all this took place in 2000.

Thanks to his relationship with Zamorano, Jaime had the opportunity to meet Mr. Bulings, a Dutchman working with the Netherlands-based Platform Humanitarian Action (PHA)[4] program; he had come to Honduras precisely to do consultancies on mushroom cultivation, which was his specialty. Jaime was able

[3] Zamorano University, the Pan-American Agricultural School, is a nonprofit institution of higher education, which has been located in Honduras for 74 years. Its main focus is on agriculture and livestock.

[4] The PHA program: a Dutch embassy program available to any entity that applies and is accepted, offering consultancies from retired people with experience and technical training in a given specialty.

to spend time with him and noticed that Bulings had been a researcher at the Center for Mushroom Research in Holland. As a result of Mr. Bulings' support, Don Jaime learned a lot about the mushroom cultivation. It was Bulings who recommended that he prepare the substrate in a place with a cement floor and with a tank to add the nutrients that were being lost. Don Jaime wanted to delve more deeply into the matter and asked for information about the PHA program at the Dutch Embassy in Tegucigalpa so that he could be a direct beneficiary of the PHA.

In 2001, Jaime was able to sign an agreement with the program and thereby receive the direct advice of specialist, Mr. Peter Van Der Bur, who had spent his entire life as a mushroom producer. Van Der Bur approved the designs for the first production house and helped to finish building it, explaining that the houses had to be hermetically sealed as a result of the crop's delicate nature and how to prepare the compost or substrate, a key element for the mushroom growth. That year Jaime started the drilling of a deep well, which guaranteed a flow of 60 gallons per minute.

At an early stage of production, the company pasteurized (due food safety) with a portable device rented from Zamorano University. Then, with the help of Mr. Van Der Bur, Don Jaime was able to arrange for the PHA program to give him half of the total price of a boiler and the other half was provided by his church so it was completely free for him.

The process of production and harvesting lasts 75 to 80 days on average, but the market demanded a permanent supply of product, determining the need to create around 3 to 4 production houses and a cold room in order to have a constant production in a rotation system. Thus, in 2002 construction began on the second production house and the cold room, with production and harvesting beginning that year, as well as the installation of the boiler, which was necessary for the food safety purpose. A third production house was installed in 2003 and a fourth in 2008.

The company was economically destabilized in 2009 as a result of external situations related to the political environment of Honduras[5]; a coup d'état occurred at that time, there was an impact in the sales level, dropping about 80% during the next semester. It took almost two years for the company to stabilize with the help of a one-million-lempira loan provided by Banco del Occidente; it was used for work capital and some investments, like the purchase of a truck and a car, the construction of a metal structure and an expansion of the production houses. The loan was paid off in January 2016.

The geographical area where the company is located has suffered from frequent power outages so it was necessary to have an additional electricity source, that affect deeply the financial performance of the business because the high cost of fuel. For several years, a neighbor had lent his generating plant to Don Jaime, until once at a meeting of friends, the electricity was cut while they were talking. At that moment the neighbor, who was present at the meeting, mentioned that his workplace would be moving and had a power plant that it did not need; after a number of attempts, Don Jaime managed to purchase the generator for the modest price of $3,000.

Each year the company increased both its production and its sales in Tegucigalpa, as a result of the owners' proactive management in both administrative and technical terms. At the end of 2015, there was a small decline in crop production because of a pest (fly) that entered through the ventilation system and through small holes in the production houses; they introduced their larvae in the compost and fed on the mushroom mycelium (the 'seed' planted in the substrate). The pest had an acute sense of smell and could smell the mycelium from 3 km away. They were finally controlled by using filters.

[5] The Honduran political problem involved the destitution of the constitutional President Manuel Zelaya by the National Congress, mainly due to his interest in holding a referendum to establish reelection, which is prohibited by the Constitution. He also increased the Honduran minimum wage by 60%, causing dissatisfaction in country's powerful business sector.

In 2016, as a solution to the company's financial problems that resulted from the high cost of electricity and limitations on the growth of mushroom production, Don Jaime presented the family Board with a suggestion to construct three new 7.5×6-meter production houses with four beds each and cold room, based on an English design.

2.3 Technical information on the crop

As already indicated, the company currently has four production houses with their individual cooling systems, two with dimensions of 6×6 m and the rest of 6×7.5 m. In each production house, four beds are installed one above the other. The mushroom production process flow is described in Figure 2.

The initial stage starts with the seedbed. The seeds are imported from Pennsylvania every two months; only 12 bags are imported, which is the company's maximum storage capacity for this material. For the optimum development of the crop, the company produces its own compost, based on rice hulls, which are watered and turned on a surface with waste collected and reinserted every 3 days (twice during production); the compost is stirred every 2 days for a total of 17 days.

Peat moss[6] imported from Estonia is used for the production bed along with the rice straw compost; the compost covers 75% of the bed, while the rest is the surface layer provided by the peat moss, which is used for its significant water retention capacity; unlike the compost, it does not have any nutrients. A micro-climate is produced in the bed, which is beneficial for the development of the mycelium and the subsequent growth of the crop. It is important to emphasize that the production houses are pasteurized when preparing the beds to ensure that there is no development of other undesirable microorganisms. Subsequently, sowing proceeds.

Don Jaime is emphatic when talking about production: 'controlling temperature, humidity and ventilation is key to the cultivation of Parisian Button Mushrooms'; therefore each house has fans and a cooling system, which merge and create an environment suitable for cultivation; moisture is provided through irrigation every day in the morning and evening, according to the respective indicators.

The crop cycle takes between 75 and 80 days, and in the last 25 days there are three stages of harvest every 8 days. The first harvest has the highest performance with respect to the others. Subsequently the harvested crop is stored in the cold room, where it loses weight due to dehydration. The day after harvest, the product is ready for packaging, sale and distribution to customers in Tegucigalpa.

3. The business' current marketing strategy

3.1 Product

Mushrooms are marketed as fresh product and they are considered a gourmet[7] item because of the quality and flavor they give a dish. For this reason, they are appreciated by chefs and people with more educated palates unlike their competition, relatively flavorless canned mushrooms. It is an extremely delicate and expensive product with a shelf life of no more than ten days. It is sold loose in bags with different weights of 1, 2 and 5 lbs. for restaurants and hotels, depending on the consumer's taste. For supermarkets, it is offered the same way, but in greater quantities; the supermarket repackages it and places it on their cold shelves with their own brand.

[6] Peat moss is a kind of moss formed in swampy Nordic areas. It is an organic substrate with water retention characteristics.
[7] The RAE defines a gourmet as a person of exquisite taste with regard to food and drink. The National Association for the Specialty Food Trade (NASFT) suggests that gourmet products are foods or beverages with a degree, style or quality meeting the highest standards in their category.

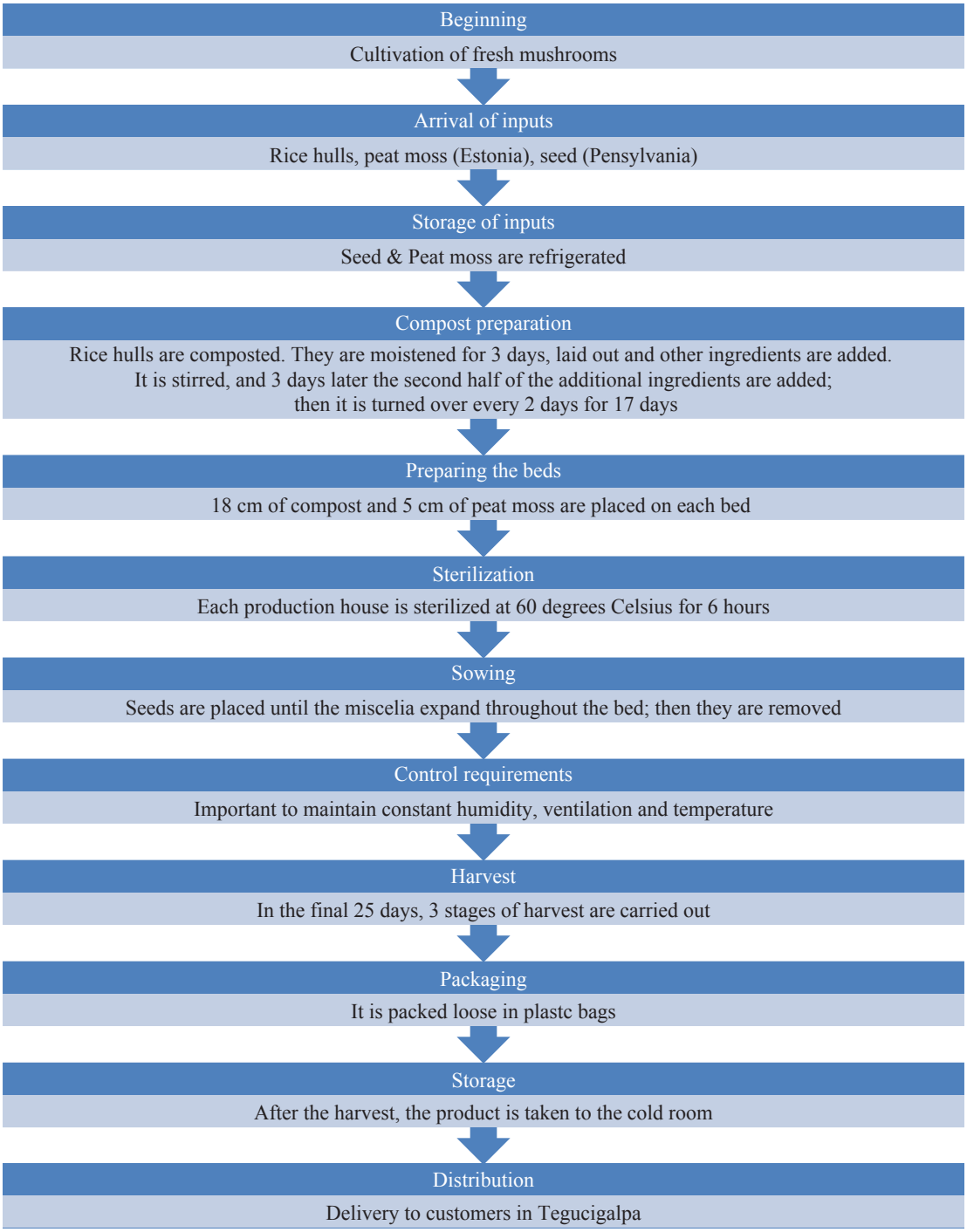

Figure 2. Process flow of mushroom cultivation.

3.2 Price

The initial price was much lower than the current one and only covered their production costs, which include costs for seed and imported inputs, as well as others, such as gasoline and transportation. The price of the product is adjusted once every two years due to increasing fuel costs (the highest fixed cost) and the devaluation of the Honduran currency against the dollar. Customers clearly understand the reason for rising prices and pass the cost to the final consumer.

The price of the product has always remained below the price of imported fresh mushrooms, which have also become more expensive for external reasons. Compared to mushroom prices in other countries, such as Guatemala and Costa Rica, they are almost at the same level. But this price is above to the prices of the local competitors, whom offer just canned mushrooms.

The product is sold by the pound, with a different cost for each client, depending on the desired quantity. Mushrooms are sold to supermarkets at a price in Honduran lempiras (HNL) of 80 per pound, to hotels and restaurants at HNL 83, and to small customers requesting less than 5 pounds a week at HNL 85 (these prices have been stable for the past two years).

3.3 Customers

The company has gradually increased its customer base at the same time that it has increased production. Leading customers include La Colonia and Hortifruti (Walmart) supermarkets, hotels, including the Intercontinental, Clarion, Marriot, Hyatt Plaza, Florence, Honduras Maya and Plaza Juan Carlos, and restaurants, such as La Cumbre, La Hacienda, Arno Bistrot, Claudio´s, Angelo´s, Café Honore, Rojo Verde y Ajo, Recoleta, Susy Go Grill and Claro de Luna, all located in Tegucigalpa.

La Colonia Supermarket the company's best client with weekly purchases of 220 to 250 pounds. The Rojas family maintain a close relationship and direct, verbal, communication with their clients; they regularly visit the establishments to know their requirements regarding size (jumbo, large, medium or small) and other needs. Table 1 shows the percentage distribution of production among different current customers.

3.4 Competition

There are no other producers and local distributors of fresh mushrooms. Canned mushrooms compete because of their lower price, but they lack the quality and texture of the Rojas product. The restaurant and hotel chefs who buy the product prefer to pay a bit more because fresh mushrooms provide better quality and taste in the final dish. The average price of canned mushroom is approximately HNL 57 for a 425 gram can.

Table 1. Percentage purchased by each customer.

Customer	%
La Colonia	30
Hurtifruti (Walmart)	10
Hotel Real Intercontinental	10
Restaurante La Cumbre	10
Hotel Clarión	5
Restaurante La Tomatina	5
Restaurante Portobello	5
Restaurante Liquidambar	5
Restaurante Arno	5
Restaurante La Pizzería	3
Hotel Hyatt Place	3
Restaurante Angelo´s	2
Restaurante Claudio´s	2
Restaurante Domo Pizza	1
Others	5

3.5 Distribution channels

Agroindustrias La Granja sells directly to its retail customers, who offer the product to the end customers. The distribution is carried out directly by Don Jaime's spouse and their son, using the company's unrefrigerated truck. They have a rotation of routes every week. Figure 3 shows the current product delivery routes.

Due to variation in production levels as a result of problems related with the crop, there is greater demand for product that can be met by production. As a result of the great trust and communication that the company maintains with its customers, if there are production shortfalls, it talks with them to come to a mutual agreement that the quantity of product will be lower. This reflects the preference of and the strong links with certain regular customers.

3.6 Promotion and publicity

The company does not invest money in advertising, media, leaflets or any kind of promotional material for their product. Generally, Doña Gloria is responsible for finding new customers, and when she finds a potential customer that does not use fresh mushrooms in its store's product line, or in its recipes or new restaurants, she provides them with an information card. The company provides a pound of mushrooms courtesy of the house so potential customers can test them as a replacement for canned products.

The company owners periodically invite their current and potential customers to their house so that they learn about the process and taste dishes prepared with mushrooms; in this way, the company offers its customers the confidence that it has constant production.

There are no special promotions, such as periodic promotional discounts. Doña Gloria does carry out special tasting events at different places, especially supermarkets, but not according to a definite schedule.

3.7 Human resources

The company is very small, and there are no departments since it is directly managed by the Rojas family. Figure 4 presents the organizational chart of the company with Jaime Rojas as General Manager, Gloria Rojas in charge of sales and marketing and Nicolas Rojas in charge of production and distribution, in addition to being involved in every area.

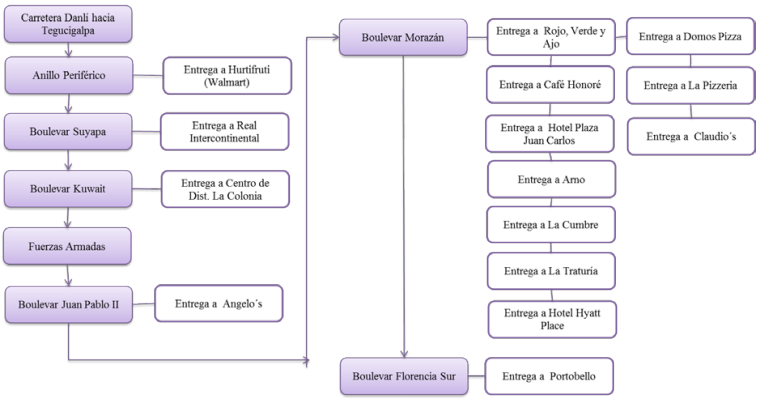

Figure 3. Current product delivery routes.

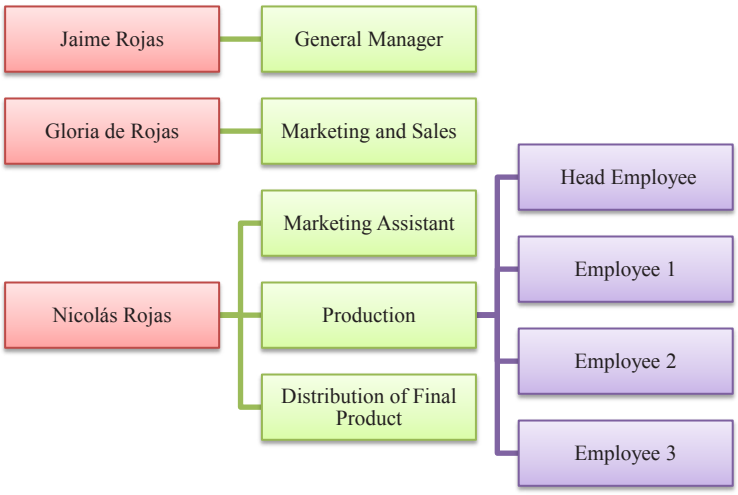

Figure 4. Agroindustrias La Granja organizational chart.

The company has four operational employees, who earn the same salary. One of them is the head and as a result of his seniority in the company, he has an additional benefit of living in a house on the company property. His great experience has allowed him to lead the others. The employees are characterized by honesty, teamwork and their ability to collaborate. Each employee is very important for the company.

4. Company's financial situation

Don Jaime is responsible for gathering all production-related technical information and that regarding the banks with whom they have relationships. This information is delivered to a company to which it has outsourced accounting and financial services. The company delivers an accounting report every three months for analysis, although many times this information is delayed. Sometimes this is because Don Jaime does not send documentation on time, and other times it is because the company they contracted fails to deliver reports. This is the case of data from 2015, which at this stage have not been delivered. However, Don Jaime acknowledges that their decisions are not based on financial indicators because he doesn't understand them. His idea to begin a new project is based on his experience and his businesses intuition, not on financial indicators. Table 2 and 3 show the company's financial statements for the years 2010-2014 (annual fiscal periods).

6. The challenge of a new investment

One night when Don Jaime was worrying about the problem of electrical energy, he began to compare which option would be better: improving their current production facilities or building new facilities. For him it was very clear that the high cost of electricity (one of the biggest cost in his business cost structure) is the result of the malfunction of the old facilities. In this point, he decided to focus in the option of the new facilities, because it will be a more radical solution. While wondering where he might locate the new facilities, he realized that there was an appropriate space where the compost was stored, and at the beginning of the project, his advisers had told him that he could store the compost outdoors. It would be an ideal place to locate the new well-equipped production houses rather than investing in new production technology.

The project would be composed of three extended production houses, each with four beds, a larger cold room and a comfortable work space for packaging the product. Don Jaime sat down to make projections on how much this investment would boost production. He calculated an annual average production, as benefit, for the first year of 27,267.47 lbs., which would increase by 10% annually with a price established at an average of 83 lempiras per pound.

Table 2. Balance sheet of Agroindustrias La Granja from 2010 to 2014 (in USD).

Item	2010	2011	2012	2013	2014
Current assets					
Cash	36,191.38	49,252.31	87,160.00		
Banks	34,885.33	35,150.64	213,868.47	344,144.06	136,640.00
Realizable assets (accounts receivable)	283,437.84	233,805.20	16,442.89		
Inventory		136,159.45	137,172.30		
Total circulating assets	354,514.55	255,862.98	454,643.66	344,144.06	136,640.00
Fixed assets					
Machinery and equipment	391,797.85	391,797.85	396,960.85	396,960.85	410,330.85
Properties	512,034.30	512,034.30	512,034.30	512,034.30	512,034.30
Vehicles	1,423,501.82	1,423,501.82	1,423,501.82	1,424,775.82	1,424,775.82
Buildings	2,003,188.53	2,003,188.53	2,039,708.53	2,039,708.53	2,039,708.53
Tools	18,043.00	18,043.00	18,043.00	18,043.00	18,043.00
Equipment	36,076.68	36,935.68	56,317.80	56,317.80	56,317.80
Accumulated depreciation of furniture	-36,384.56	-113,960.48	-191,536.40	-191,536.40	-284,866.13
Accumulated depreciation tools	-1,300.00	-1,300.00	-1,300.00	-1,300.00	-4,908.60
Accumulated depreciation vehicles	-246,777.17	-446,423.30	-587,349.98	-872,305.14	-1,157,260.30
Accumulated depreciation construction	-115,018.85				
(-)Accumulated amortization construction		-115,018.85	-115,018.85	-209,283.19	-303,547.53
Accumulated amortization improvements				-124,539.02	-249,078.04
Other assets	232,089.07	316,610.62	311,347.55	311,347.55	311,347.55
Total fixed assets	4,217,250.67	4,025,409.17	3,862,708.62	3,360,224.10	2,772,897.25
Other assets					
Payments against the account			5,263.07		
Total other assets			5,263.07		
Total assets	4,571,765.22	4,281,272.15	4,322,615.35	3,704,368.16	2,909,537.25
Circulating liabilities					
Accounts and documents to pay	3,235,751.50	3,130,820.15	3,092,498.79	3,106,871.82	2,717,363.99
Bank loans	818,416.72	666,688.00	723,840.00	558,492.00	114,572.22
Other loans	413,674.70	402,768.28	403,698.28		
Provisions and retentions	3,674.30			8,896.52	18,215.80
Other liabilities		12,000.00	20,000.00	8,000.00	14,000.00
Total current liabilities	4,471,517.22	4,212,276.43	4,240,037.07	3,682,260.34	2,864,152.01
Long-term liabilities					
Total long-term liabilities					
Total liabilities	4,471,517.22	4,212,276.43	4,240,037.07	3,682,260.34	2,864,152.01
Equity					
Social capital	26,000.00	26,000.00	26,000.00	26,000.00	26,000.00
Cumulative return on capital	63,225.10	74,248.00	102,995.72	-30,581.72	-3,892.18
Net profit	11,022.90	49,252.31	-46,417.44	26,689.54	23,277.42
Total equity	100,248.00	68,995.72	82,578.28	22,107.82	45,385.24
Total liabilities and equity	4,571,765.22	4,281,272.15	4,322,615.35	3,704,368.16	2,909,537.25

Table 3. Income statement of Agroindustrias La Granja from 2010 to 2014 (in USD).

Item	2010	2011	2012	2013	2014
Income from sales	998,624.26	636,952.50	1,673,031.00	2,249,008.00	2,137,958.00
Interest received	486.72	214.27	862.25	275.25	488.18
Exchange rate differential	-662.00		23,146.74		421.41
(Return on sales)					-15,150.00
Total income	998,448.98	637,166.77	1,697,039.99	2,249,283.25	2,123,717.59
Total income + other income	1,754,904.28	1,504,066.77	1,697,039.99	2,249,283.25	2,125,965.00
Sales costs	471,890.17	208,890.06	389,560.25	338,124.00	290,362.05
Gross revenue	526,558.81	428,276.71	1,307,479.74	1,911,159.25	1,833,355.54
Financial expenses	179,119.97	141,507.56	128,117.09	62,062.98	78,543.21
Administrative and operating expenses	881,341.77	853,193.70	957,692.80	1,308,006.06	1,033,263.89
Depreciation of assets	85,596.36	277,222.05	218,502.60	379,219.50	476,157.83
	1,146,058.10	1,271,923.31	1,304,312.49	1,749,288.54	1,587,964.93
Operating income	-619,499.29	-843,646.60	3,167.25	161,870.71	245,390.61
Other expenditures	-125,933.11	-54,505.68	-49,584.69	-135,181.17	-224,360.60
Other income	756,455.30	866,900.00	0.00	0.00	2,247.41
Net income	11,022.90	-31,252.28	-46,417.44	26,689.54	23,277.42

For the new production houses, he also projected the following investment costs: Five condenser units and an evaporator for a total of HNL 541,885.49; three production houses for a total of HNL 583,337.01; Materials and installations for HNL 45,195; building materials and labor costs for HNL 25,5095. He projected production and administration costs (including a reasonable electricity cost) of HNL 1,765,296 for the first year, with a 10% annual increase.

Recently Don Jaime had received a call from Banco de Occidente, which is well known in the country for its support to small and medium-sized enterprises. The bank executive who contacted him suggested that he could apply for a loan of up to HNL 1,000,000, with an annual interest rate of 10% a year, a seven-year term and a year's grace period on interest. The remaining investment would be the contributed by Don Jaime's company. In his credit application, Don Jaime attached the photos of his operation, which are presented in Figure 5.

In his mind, Don Jaime was turning over these questions: 'Will the investment in new production houses be profitable? Should I take on new debt? Would this be the solution to the problems detected?' However, in the other hand, he was very afraid that the root of the company´s problems would be in other places that he did not see. His son interrupted his thoughts with other deep question: 'Dad, what about the strategy of our business?'

Figure 5. (A) Two of the four production houses (The one on the right is the first house built by the company). (B) Site where new production houses could be constructed. (C) Rice hull, used for compost production. (D) Beds in the production houses. (E) Third and last stage of a mushroom harvest production cycle. (F) Product stored in the cold room.