

# [The case study was conducted at celso g. mandocdoc](https://assignbuster.com/the-case-study-was-conducted-at-celso-g-mandocdoc/)

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## EXECUTIVE SUMMARY

TheCase studywas conducted at Celso G. Mandocdoc (CGM) poultry farm. It is located at Barangay Tugtog and Sabang, San Jose Batangas. The proprietor, Mr. Celso G. Mandocdoc has been involved with the poultry egg industry for twenty four years and has continuously expanded throughout the lifetime of its operation. The farm started as a backyard farm and later turned into a commercial layer egg farm. The main objective of the study was to evaluate the operations of CGM farm.

Specifically, assess the four business function of the farm: marketing, personnel, production andfinancewithin the farm’s operation, and analyze the appropriate elements in the businessenvironmentof the farm, formulate alternatives to the identified problem, design an implementation plan for the chosen solution for the improvement of the farm. Primary data were gathered from interviews with the owner and key informants such as employees of the farm. Some of the information gathered were based on observations of its daily task and activities.

Secondary data gathered from books, and government agencies such as the Department of Agriculture, National Statistics Office and the Bureau of Animal Statistics. Information from the internet were also used in the study. Results showed that CGM farm has been a profitable operation for the evaluated years of 2006 to 2010. The farm had been efficiently operating with proper pricing, marketing and distribution to take credit. CGM farm is in acquisition of 34 poultry houses, which includes the 4 brooding houses.

The farm’s tools and equipment are mostly automatized in order to minimize the required number of flockmen to one for every 12, 750 heads. The farm laborer’s operational activities mainly include feeding, watering, cleaning disinfecting, collecting, and sorting. These activities slightly vary depending on the season in relation to the climate where it is operating, since poultry birds can only adapt within a narrow range of temperature. In terms of product distribution, table eggs are mostly sold to viajeros at a price depending on the size of eggs purchased. A portion of the table eggs produced is delivered to Mindoro.

Results also showed that CGM farm is profitably earning under the evaluated years of 2006 to 2010. Its net income increased by 28 percent after a typhoon destroyed most of the farm’s housing and equipment. In terms of liquidity, the study showed that the farm’s current asset can compensate its current liabilities. Also, the returns for 2010 showed that CGM farm earns a 25. 1 percent net income for every peso it invests on farm assets. However, a major problem was discovered in CGM farm’s management. Also the owner clearly noted the farm’s problem in the layer’s performance during the dry season.

Layers were observed to be affected by the warm temperature during the dry season. This results to poor quality eggs which were sold at lower price. The study suggests investing on tunnel ventilation system in order to resolve the problem. The suggestedtechnologywould be capable of regulating the temperature inside the poultry house. Also, in order to resolve CGM farm’s problem in management a training regarding the proper handling of layers under tunnel ventilation system was suggested along with a salary increase upon the utilization of the tunnel ventilation.

## INTRODUCTION

Poultry industries have developed in many countries where they previously did not exist, or did not operate on a commercial scale. Through the course of these developments, consumption of the poultry meat and egg increased significantly. It can be assumed that the strong development of the layer and broiler industries was sometimes encouraged in areas where there were serious obstacles, not least being the lack of domestic supplies of feed ingredients. Nevertheless, there were usually cheap sources of cereals and proteins, from subsidized exporting countries, and even these industries survived and made profits (Silva, 2003).

The Philippine poultry industry has played an important role not only in shaping the agricultural sector but also in the development and improvement of the Philippine economy as a whole. For the last decade, the country’s poultry industry has flourished and developed from being a backyard raising industry, to a large integrated poultry farming system. The country has come about the formation of large integrated operators like the San Miguel Corporation, General Milling, Robina Enterprises, Bounty Farms, and many others.

With developments in poultry raising, production has become a year round operation of incubation and brooding with better knowledge of nutrition, management and the use of good breed and strain (Vergara, 2010). Table egg, besides being a source of protein, is rich in nitrogenous elements. It is one of the most concentrated forms of nitrogenousfood. Table egg is also confirmed to have a low-calorie source of Vitamin A, riboflavin, Vitamin B-12, iron, zinc, phosphorus, calcium, potassium and other nutrients. The average weight of an egg is about two ounces, of which 10 percent of it is shell, 60 percent is white, and 30 percent is yolk.

Table egg production is believed to be the most progressive animal enterprise in the country today. Layer farms may operate on a small, medium, or large scale type. Eggs may be produced commercially or through contractual agreement with a private company. Large commercial operations raise a more significant number of layers, while small scale farmers raise flocks by the hundreds to thousands. In large farms, greater profit can be gained but there is no market assurance. Table egg production has served as a stable source of income for egg producers.

According to the Department of Agriculture (2002), Philippine table egg production contributed to the 5. 7 percent growth in volume in the poultry industry. This figure can be directly related to the generation of employment. The said Department also stated that about 76, 842 people are employed directly to the layer industry production. While another 1, 769 people are employed on the table egg’s post production in the country. Furthermore, consumption for market eggs, are not only limited for household also for the manufacturing firms that use eggs as a basic ingredient for their products.

Also, since egg production is labor intensive, it produces work opportunities for people, thus increasing the standard of living in the Philippines (Silva, 2010). With the constant increase of the country’s population, the demand in poultry products increased significantly throughout the years. This resulted to the expansion of poultry production. From a backyard scale producing a self-sufficient source of protein to afamilywith a profitable business venture generating generous revenues to its owners. However, the Philippines’ layer industry is facing problems regardingclimate change.

Poultry is said to be vulnerable to climate change since birds can only tolerate narrow temperature ranges, where it was believed that a temperature reaching beyond 36 degrees Celsius can drastically decrease its quality. Extreme temperatures reduce the ability of poultry birds to properly consume feeds. This leads to loss of body weight and an increase in body temperature resulting to reduction in the rate of growth of poultry birds. In order to adapt to the drastic effects of climate change, table egg producers resort to technological advancements in ventilation systems in poultry housing.

One of these systems is mechanical ventilation. Mechanical ventilation uses fans in order to improve the circulation of air inside a poultry house. This air pressure difference, known as static pressure, causes the air flow that produces the air exchange required as part of a mechanically ventilated poultry house Currently, the Celso G. Mandocdoc Farm is facing the decrease in performance and quality of table egg products during the dry season. For this reason, the farm owner, Mr. Celso Mandocdoc, sought after a solution to minimize the effects of temperature. One of the solutions that Mr. Mandocdoc has been eyeing is the installation of a mechanical ventilation system. Siginificance of the Study The largest egg producing municipality in the Philippines, as of this date, is in Batangas. For this reason, the province of Batangas was given a name “ Egg Basket of the Philippines”. CGM farm is considered as the largest table egg producer in the province of Batangas. With this, the farm plays a large role in the supply of table eggs not only in Batangas but in other provinces in the Philippines. Though CGM farm has a positive net income, it can be noted that its sales decline during the dry season.

Also, the farm experiences problems in its operation where some of the farm activities are neglected by their employees. By analyzing CGM farm’s situation, the study aims to give possible alternatives to solve the said problem. The significance of this study is primarily to provide the owner of the farm, Mr. Celso G. Mandocdoc, solutions to its problems and create a room for innovation and development for poultry layer production. Secondly, this study can also serve as a reference to people who are interested in venturing in table egg business in the Philippines. Objectives of the Study

This study generally aims to determine and assess the management practices of CGM farm. Specifically, it also aims to achieve the following:

1. to describe the relevant macro and microenvironment of the poultry industry in terms of trends, competitive structure, issues, policies and programs;
2. to present and analyze the four business functions, operations, organization, finance and marketing of CGM farm;
3. to identify the relevant issues and problems confronting CGM farm and formulate alternative solutions to address it;
4. to evaluate alternative solutions using appropriate criteria; and
5. o design an implementation plan for the chosen solution.

### Scope and Limitations

The study aimed to maximize the profitability potential of Celso G. Mandocdoc Farm with its present and future challenges through its operation and management, and its facilities. The study focused on layer chickens and table eggs especially its production operations. Interviews with the workers in the farm, veterinarian, nutritionist and the owner were conducted. Other references such as books, journals, government institutions records, newspapers and undergraduate theses were used as a source for the additional nformation in the study. The accuracy of the figures and statements provided in the study was dependent to the information provided by the farm’s key informants. Review of Literature Overview of the Philippine Poultry Industry Poultry Situationer The country’s total poultry chicken population as of July 1, 2011 reached up to 165. 20 million heads. The figure is 2. 47 percent higher than 2010’s value, which is 161. 22 million heads. For 2011, the number of raised broilers and layers increased by 6. 09 percent and 5. 11 percent respectively. While the inventory of native poultry declined by 1. 6 percent. In the first part of 2011, total chicken production grew by 3. 8 percent. Chicken egg production also increased by 3. 48 percent. This positive figure is mainly contributed by commercial growers, which gave way to around 81. 17 percent of the total egg output (BAS, 2011). At current prices, gross value of chicken production in the first half of 2011 declined by 1. 38 percent. This was a result of the decrease in farm prices during the period. However, gross value of chicken egg output grew by 6. 21 percent in comparison with last year’s level.

At constant prices, chicken and chicken egg production contributed around 12. 01 percent to the gross output of agriculture in the first half of 2011 (BAS, 2011). The total table egg production from January to June 2011 reached 200, 218 metric tons. This registered an increase of 3. 40 percent from last year’s level of 193, 629 metric tons. This growth was attributed to the increasing layer inventory from commercial farms, particularly, in top egg producing regions (BAS, 2011). In terms of table egg prices, average farmgate price of chicken eggs in commercial farms went up by 1. 45 percent in the first half of 2011.

From the last year’s Php3. 91 per piece, price rose to Php3. 97 per piece. The average wholesale price of chicken eggs in Metro Manila was Php3. 55 per piece. This showed an increase of 6. 19 percent from last year’s average price of Php3. 34 per piece. The average retail price of chicken eggs in Metro Manila was Php4. 25 per piece. This price was the same as compared to 2010’s quotation. The accumulated price increase is contributed by the increase in the price of feeds (BAS, 2011). Poultry Feeds Feed represents the major cost of poultry production, constituting up to 70 percent of the total.

Of total feed cost, about 95 percent is used to meet energy and protein requirements, about 3 to 4 percent for major mineral, trace mineral and vitamin requirements, and 1 to 2 percent for various feed additives. Poultry diets are formulated from a mixture of ingredients, including cereal grains, cereal by-products, fats, plant protein sources, animal byproducts, vitamin and mineral supplements, crystalline amino acids and feed additives. These are assembled on a least-cost basis, taking into consideration their nutrient contents as well as their unit prices (FAO, 2010).

Energy sources represent the largest component of poultry diets, followed by plant protein sources and animal protein sources. The most common poultry feed ingredient used as an energy source are corn and soybean meal. These materials are common plant protein sources. Other grains such as wheat and sorghum, and plant protein meals such as canola meal, peas and sunflower meal are also widely used in some countries. Animal protein ingredients that are incorporated in poultry feeds are fishmeal and meat meal. Majority of developing countries are net importers of these ingredients.

Poultry feed producers in countries of Africa and Asia depend on imports. Usually, the semi-commercial and commercial sectors in these countries are forced to limit their output of compounded feeds (FAO, 2010). The predominant feed grain used in poultry feeds worldwide is corn. This is mainly because its energy source is starch, which is highly digestible for poultry. Also, it is highly palatable, is a high-density source of readily available energy, and is free of anti-nutritional factors. The ‘ metabolizable’ energy value of maize is generally considered the standard with which other energy sources are compared (FAO, 2010).

Corn takes into account to 70 percent of poultry and livestock mixed feeds. Fifty four percent of the Philippine’s total corn production comes from yellow corn. This comprises of one third of the total corn area. Feed milling industry produces about 5 to 7 million metric tons (MT) of feeds per year. Currently, there are 389 total registered commercial and integrated feed mills as of 2004 with a combined total daily capacity of 23, 106 MT (Vergara, 2010). San Miguel Foods Inc. is the leading supplier of feeds in the country.

It has 25 feed milling establishments either company-owned or using other feed milling capacities under toll- processing arrangements. On the other hand, Cargill Philippines has four (4) feed milling facilities; Swift Foods, Inc. , 9; Vitarich, 4; Universal Robina, 3; Sun Jin Phils. , 2; General Milling, 3; and the rest of the top 10 feed millers have one feed mill each (Vergara, 2010). Commercial and Backyard Production The poultry inventory in the Philippines is classified into “ commercial” and “ backyard”. According to the Bureau of Agricultural Statistics, a poultry farm is classified to be “ commercial” if it has more than 100 birds.

Otherwise, it is classified as “ backyard”. The backyard poultry producers recorded more than about 50 percent of the total poultry inventory in the Philippines in 2005. The definition of backyard farming is similar to the description of “ Sector 4” under the classification formulated by the Food and Agriculture Organization (FAO). The said organization categorizes poultry farms into four sectors based on their ability to establish biosecurity measures against the infestation and spread of diseases, such as avian influenza.

The four sectors are: Sector 1 – Industrial integrated production system; Sector 2 – Commercial poultry production system; Sector 3 – Semi-commercial poultry production system; and Sector 4 – village or backyard production (Lambio, 2005). Classified under Sector 4 are backyard farmers who keep, on average, between 10 and 20 birds and typically less than 50 birds. It is the most dominant category in terms of number of farmers and the share of total production especially in the developing countries such as the Philippines.

Backyard poultry is often referred to as family poultry or (scavenging) village chickens in the case of chicken. The common, and most significant, feature of backyard poultry is the low-input, low-output production system which is based almost entirely on native birds and local breeds. Chickens raised under this system are generally utilized for home consumption and, when necessary, as source of additional income (Lambio, 2005). By comparison, the commercial sector is characterized by large-scale and integrated production and marketing systems, as described in FAO Sectors 1 and 2.

Based on current definitions, the Philippine broiler sector is characterized by: modern foreign breeds from the Western countries; use of vaccines and drugs to control diseases and promote growth; acquisition of advanced technology to raise chickens on a large scale, and a vertically integrated production system based largely on contract farming (Lambio, 2005). The Philippine broiler industry is controlled by four major integrators such as, Swift Foods, San Miguel Foods, Tysons Agro-Ventures, and Universal Robina Corporation. All in all, they constitute for 65 percent of the total broiler supply in the country (Ang 2005).

These corporations are responsible in the production and marketing of broiler chickens, the importation of grandparent and parent stock, and the manufacturing and sales of commercially mixed feeds and breeder stocks to independent raisers. These integrators are organized into the Philippine Association of Broiler Integrators. On the other hand, the small- and medium-scale commercial broiler and independent poultry producers, particularly from Rizal, Bulacan, Cavite, Laguna, Pampanga, and Tarlac have grouped themselves into the United Broilers’ Association (Lambio, 2005).

In addition to the classification based on the size of the operation, the Philippine chicken inventory is classified into “ native”, “ broiler” and “ layer”, based on breeds and purposes. Layers and broilers are imported hybrids with foreign strains. Native chickens, on the other hand, refer to the local breeds as well as the so-called “ improved breeds” that are crosses of local chickens with foreign strains. Prior to 1998, layer and broiler chickens were compiled in BAS statistics as “ commercial” chickens, while native chickens were referred to as the “ backyard” variety.

Because of the loose definition and the diversity of the poultry production systems, it is conceivable that some “ commercial” chickens are actually raised in backyards, while some native chicken farms have more than 100 birds. It appears that the current classification systems may need to be revised to reflect more clearly the key characteristics of the production systems (Lambio, 2005). Commercial broiler farms in the Philippines are geographically concentrated. In 2005, Central Luzon (33. 2 percent) and CALABARZON (28. 2 percent) accounted for 61. percent of total broiler stocks in the country (BAS 2006a). These two regions also accounted for more than 50 percent of total layer stocks in the Philippines. The domination by a few leading producing regions reflects the comparative advantage they all share in terms of access to major inputs and markets (Costales et al. 2003). Although such a high degree of geographical concentration has its advantage in the marketing and sourcing of inputs, it presents significant challenges to on-farm disease control and waste management.

A disease outbreak, such as the bird flu which has plagued a number of poultry-producing countries worldwide in recent years can be disastrous, given its potential to wipe out the entire industry in a very short time (Lambio, 2005). Native chicken production, on the other hand, is more widespread, but most prominent in Western Visayas (14. 1 percent), Central Visayas (9. 4 percent), Cagayan Valley (7. 9 percent), Southern Mindanao (7. 9 percent), and Ilocos Region (7. 5 percent). Together they accounted for 47 percent of total native chicken inventory in 2005 (Lambio, 2005).

Savings may be possible: winter energy costs may reduce as warmer winters reduce the need to heat buildings and flocks can be acclimatized outside. Locally grown soya and maize would cut feed costs and poultry 'food miles'. Furthermore, meat products may increase in price and this – combined with feed prices possibly decreasing (due to the potential for soy yield to increase by 10 per cent as a result of rising carbon dioxide levels) – may make poultry farming more profitable (Lambio, 2005). Climate Change and Poultry Production

The challenges posed by climate change fit broadly into one of two categories: loss of productivity or increasing costs. Regarding productivity, housing systems need to be managed to maintain optimal seasonal temperatures and reduce the risk of heatstress, and increased investment will be required in ventilation and cooling (Farming Futures, 2009). Poultry is said to be vulnerable to climate change since birds can only tolerate narrow temperature ranges. Poultry farmers need to consider adaptation practices in order to minimize the costs, risks and concerns in the future.

Extreme temperatures reduce the ability of poultry birds to properly consume feeds. This leads to loss of body weight and an increase in body temperature resulting to reduction in the rate of growth of poultry birds. This in turn results to a reduction in the market price of the poultry products (Mowbray, 1971). Reproductive capacity may decrease. Studies by the Department for the Environment, Food and Rural Affairs (Defra) on broiler hens found that a poultry house put under a future climate change scenario exceeded critical temperature on 30 per cent more occasions despite a 10 per cent increase in ventilation.

Costs are likely to increase as the result of the need to cool buildings more in summer and reduce house humidity. Building infrastructure and maintenance will have to cope with more intense weather events and increased rainfall. This means that building plans need to consider more sustainable options, with greater investment in drainage systems to accommodate more extreme and frequent floods and frequent rainfall. Stocking density in the house may need to be reduced in extreme temperatures, and actively controlled ventilation could become essential in transportation vehicles (Farming Futures, 2009).

High temperature has its effect on egg production in terms of quality and quantity. Egg is a good source of protein and other essential nutrients. It also serves as a raw material for cosmetics and vaccine industries. Feed intake of a layer under high climates, decreases by 1. 5 grams a day for every degree rise in temperature. In a temperature of 30 degrees, a high decrease in egg production of about one egg per bird in a year for every degree rise in temperature (Charles, 1980).

Also, the depressive effects of environmental heat stress increases the rate at which poultry bird consumes water which results to a reduction of the shell thickness. It can be seen that most of the eggs that are currently sold in markets have very thin egg shells. Apart from the thin egg shells, this depressive environment heat stress also leads to high death rate of poultry birds from heat exhaustion (Kekeocha, 1985). On the other hand, rainfall help promote large feed consumption for poultry birds. But, excess amount of rainfall leads to high moisture content in the environment, which results to the spread of diseases.

Also, the high moisture content provides good breeding environment for disease parasites like coccidiosis fowl cholera and ascaris, a worm (endoparasite) diseases (Charles, 1980). Poultry farmers should reconsider building design in new builds to more effectively cope with new climate and weather extremes, including the installation of more/new equipment to cope with new climate extremes (Farming Futures, 2009). Types of Ventilation Systems in Poultry Houses In order to adapt the drastic changes in the climate that poultry industry is currently facing, ventilation systems are developed.

Below are some of the ventilation systems that are constructed for poultry housing. Natural Ventilation This type of ventilation system does not make use of any fans for moving air. Naturally ventilated poultry houses depend on natural draught in the building. The sidewalls are usually open and can be regulated with curtains or other material. The ridge is open and can sometimes also be controlled. Warm air exits the building through the open ridge, while cool air enters through the sidewalls. When there is no wind and temperatures are high, results can be very poor (http://www. halcyon. ph). Mechanical Ventilation

This type of poultry housing systems uses fans and the air is forced through the building. Ventiliation fans are the main element that distinguishes a mechanical ventilation system. Properly operating fans create an air pressure difference between the inside and outside. This air pressure difference, known as static pressure, causes the air flow that produces the air exchange required as part of a mechanically ventilated poultry house (http://www. halcyon. ph). a. Roof Ventilation Fans are placed in airshafts in the ridge of the roof to suck the air out of the stable. Air inlets are placed in both sidewalls (http://www. alcyon. ph). b. Cross Ventilation For cross ventilation the fans are placed on one side of the long wall of the building, whilst the air enters through adjustable inlet flaps in the other sidewall. The fans usually have diameters of 122 or 90 centimeters and depending on type displace 16, 000-45, 000 cubic meters of air per hour. These fans can be installed in groups, but also divided across the full length of the building. They are controlled in stages, where in turn one or two fans start running at full speed. For minimum ventilation a time function can be set or a variable speed can be used (http://www. alcyon. ph). c. Length Ventilation This ventilation system is to a large degree similar to cross ventilation. The fans are the same, but are now placed in the front wall. Both sidewalls are provided with adjustable inlet flaps. In principle, the system works the same as for cross ventilation (http://www. halcyon. ph). d. Tunnel Ventilation This system is similar to length ventilation, only for tunnel ventilation special air inlets are used, that are placed opposite the fans at the other end of the building. This creates a so-called tunnel effect, as a result of which the air speed inside the building can be 2. -2. 5 m/sec. This has a positive influence on the wind-chill factor for the animals. On hot summer days, the wind-chill factor can thus be 6-8 degrees lower. For tunnel ventilation, all other inlets are closed (http://www. halcyon. ph). Cooling System When a tunnel ventilation system is in place, it is relatively easy to add a cooling system. For this purpose so-called pads are used. Water is pumped across these pads and fans draw air through them. The resulting airflow makes the water evaporate and cools down the hot air. This cooler air is then drawn through the building.

Depending on outside temperatures and humidity, the temperature can be lowered by 10-15 degrees. The pads are mounted inside a housing and placed in front of the tunnel inlets on the outside of the stable. An even better solution is to provide a small extension that simplifies maintenance and catches any water loss. Excess water is received and reticulated by a water pump (http://www. halcyon. ph). Standards in Determining the Quality of Eggs A quality of an egg can be determined using a number of factors. Quality factors for table eggs can be generalized into two major groups: Exterior and Interior.

Exterior quality factors can be determined using external observations. Interior quality, on the other hand, are factors involving the contents of the egg as they appear using candling light, or when the eggs are broken out and measured by the Haugh unit method (USDA, 2000). Exterior Quality a. Shell Shape and Texture The normal egg has an oval shape with one end larger than the other, and it tapers toward the smaller end. The ends of an egg are commonly called the large end (air cell end) and the small end. Eggs that are unusual in shape may have ridges, rough areas, or thin spots.

Abnormal shells may result from improper nutrition, disease, or the physical condition of the hen. Sometimes a shell is cracked while the egg is still in the body of the hen. These eggs, which are commonly referred to as “ body checks,” are repaired by an additional deposit of shell over the cracked area, generally resulting in a ridged area (USDA, 2000). Shells with thin areas and some other types of defects are usually weaker than normal shells, and the danger of breakage en route to the consumer lowers the utility value of the egg. Eggs of abnormal shape also lack consumer appeal (USDA, 2000). b. Shell Cleanliness

Theobservationof shell cleanliness should be done in an area with sufficient lighting and adequate space for moving. Freedom from stains and foreign material on the shell must be considered in assigning a quality designation to an individual egg (USDA, 2000). Interior Quality Even under the most favorable conditions, table egg quality is relatively unstable as the interior quality of the egg deteriorates from the time it is laid until it is consumed. Sometimes quality changes render eggs useless for food before they reach consumers. However, when eggs are properly cared for, the quality decline can be minimized.

The two qualities that can be easily observed in the interior part of an egg are its air cell and its yolk (USDA, 2000). a. Air Cell Freshly laid eggs do not have air cells inside or only have a relatively small air cell. The increase in the size of air cells inside an egg is a result of evaporation of water inside an egg. The air cell is the easiest quality factor to evaluate, as it can be judged objectively by observing its size under candlelight (USDA, 2000). b. Yolk The appearance of the yolk as the egg is twirled in candling is one of the best indicators of the interior quality of shell eggs.

The characteristics of the yolk are determined by the shadow that it casts upon the shell before the candling light. The appearance of the yolk is dependent on the condition of the white. As the egg ages, the rate of carbon dioxide and moisture loss in the white increases and affects the condition of the white. However, there are three factors about the yolk itself that are considered in judging egg quality by the yolk: distinctness of yolk shadow outline, size and shape of yolk, and defects and germ development (USDA, 2000). METHODOLOGY Data Nature and Data Collection Primary data as well as secondary data were gathered for this study.

Primary data were obtained through personalinterviewwith the owner, Mr. Celso G. Mandocdoc. Information regarding the farm’s financial performance were asked from the owner as well as the farm’s objectives and stand within its operation. Also, officers and employees of the farm were interviewed regarding the specific details on the farm’s operations. Certain observations based on the four business functions of the farm were noted as part of primary data. Secondary data, on the other hand, such as income statements and balance sheets as well as farm records were also obtained.

Statistical data and other industry related information such as production, prices, imports and exports, institutions, technology and transfer, government policies and other information that describes the poultry industry. Additional information were collected from credible websites, books, newspapers, journals, publications where most sourced from the internet and undergraduate studies. Various secondary data was obtained from different institutions such as University of the Philippines Los Banos (UPLB), Department of Agriculture (DA), Bureau of Animal Industry (BAI), and Bureau of Agricultural Statistics (BAS), among others.

Environmental analysis was employed in order to assess the poultry layer industry’s performance at a macroenvironental and microenvironmental scale. Macroenvironmental analysis evaluated the poultry layer’s global and local economic development. The analysis takes into consideration global factors such as global and Philippine consumption and production, Gross Domestic Product (GDP), inflation that can direct and indirectly affect the industry’s supply and demand. On the other hand, the microenvironmental analysis takes into consideration factors such as pricing, market channels, onsumers, and key raw materials which directly affect the industry. Data Analysis The information collected was evaluated if the data gathered were up to date. After coming up with actual figures, it was then analyzed. All the internal and external factors were identified. This is to see what specific factor affects the farm’s setback, the size of the eggs during the summer season SWOT analysis was done to be able to identify the farms strengths and weaknesses, threats and opportunities that are matched using the SWOT matrix in order to come up with different strategies. The alternative with the highest score was chosen and implemented.

Contingency plan for the next best alternative was made if the previous one failed to succeed. SWOT Analysis The SWOT Analysis is a tool which provides different strategies with the evaluation of the organization’s strengths, weaknesses, threats and opportunities. It includes internal and external scanning which provides helpful information about the organization’s resources and capabilities to the competitive environment which it operates. Internal scanning includes the identification of strengths and weaknesses. Strengths are attributes that can be used to gain competitive edge while weaknesses are attributes that lessen competitive edge.

On the other hand, external scanning includes the identification of threats and opportunities. Threats are attributes which could hinder the attainment of objectives while opportunities are attributes which could be taken advantage of in the attainment of objectives. The effectivity of the SWOT Analysis lies on the SWOT matrix which includes different strategies formulated under each quadrant. Quadrant strength-opportunity contains strategies which help the company capture market opportunities by capitalizing on the strengths. Strength-threat quadrant contains strategies which help the company avoid market threat using its strengths.

For weakness-opportunity quadrant, strategies includes opportunities are captured by addressing certain weaknesses. Lastly, weakness-threat quadrant includes strategies which overcome both weakness and threats. Michael Porter’s Five Forces Analysis Porter’s five forces analysis was used as a model in order to evaluate external and internal threats within CGM farm’s operation. The five pressures that were assessed are the threat of substitute products, threat of new entrants, bargaining power of customers, bargaining power of suppliers, and intensity of competitive rivalry.

These elements were evaluated based on the information provided by the owner and key informants, along with supplementary information acquired through government agencies. Ratio Analysis Ratio analysis was employed in evaluating the current as well as the past financial positions of the farm. These analytical measures acts as a tool to assess CGM farm financial capability to answer its expenses, investments, and other contingencies during operation over the evaluated years of 2006 to 2010. Also, these analytical ratios were used as an indicator or basis for further investments and expansion of CGM farm.

Farm’s income statement and balance sheet were used in analysis. Liquidity Ratio Liquidity is a financial measure employed in order to evaluate if a business can satisfy short-term obligations on due dates. Liquidity refers to the solvency of the farm’s overall financial position, the ease in expenses. Current ratio is one of the measures of liquidity. This is computed by dividing the farm’s current asset by its current liability. Profitability Measures Profitability measures were utilized to assess the farm’s profits withrespectto a given level of sales, a certain level of costs, or the owner’s investment.

Net Profit Margin Percentage of each sale left after all expenses including taxes were deducted is measured by net profit margin. Return on Assets Return on Assets measures the overall effectiveness of management in generating profits with its available assets. Return on Assets = Net Income Total Assets Return on Equity Return on equity measure the return earned on the owner’s investments in the farm’s operation. Descriptive research was applied in this study. The nature of the farm was analyzed and each business function was assessed.

The study focused more on the operation of the farm because the issue is the smallness of eggs during summer the major problem was identified and alternative solutions were formulated. After which, the implementation was done by recommending the best possible solution. Conceptual Framework of the Study The study was evaluated based on a constructed conceptual framework of the case study on Celso G. Mandocdoc farm in San Jose Batangas, which was adopted from a case study analysis (Figure 1). Based on Figure 1, Celso G.

Mandocdoc farm was evaluated on its management practices and activities. These variables come under the farm’s operation, organization, marketing, and finance. Information was also gathered about the poultry industry, in general, along with the macro and micro level performance of the layer industry. With the information gathered on the industry, problems were identified. The external and internal environments were also assessed under the SWOT (strengths, weaknesses, opportunities, and threats) listing. A SWOT matrix was generated for the basis of the strategy formulation.

Decision were made and presented as recommended course of actions that can solve the identified problems . Operational Definition of Terms Farmgate Price- producer’s price of an agricultural commodity Flockmen- hired workers responsible in caring of poultry layers inside a poultry house. Lean Season- a layer production cycle that is inclusive during the months of March to May. Peak Season- a layer production cycle that is inclusive during the months of June to February. Poultry House – a fixed structure used as housing for poultry birds. Can be constructed using vernacular or industrial materials.

POULTRY (Chicken- Gallus gallus; Duck- Anas platyrhynchos; Muscovi- Cairina moschata; Turkey- Meleagris gallapavo; Quail- Coturnix coturnix; Geese- Cygnopsis cygnoldes) Broilers-meat-type chicken Layers- egg-type chicken Hens-a female fowl one year old or over Rooster- a male fowl one year old or over Pullets- a female fowl less than a year old Cockerel- a male fowl less than a year old Table Egg- a hard-shelled reproductive body specifically produced by layers for human consumption. Viajero- a marketing intermediary responsible in carrying farm products to market outlets such as wholesalers or retailers

## ENVIRONMENTAL ANALYSIS

### Macroenvironmental Analysis

In order to assess the external factors that directly or indirectly affect the overall performance of CGM farm, macroenvironmental analysis was employed. Macroenvironmental analysis covers the country’s economic development and production along with the developments within the table egg production industry. These variables share a critical impact in the poultry industry. Economic Development Gross Domestic Product and Inflation Figure one shows the percent change of the Philippine Gross Domestic per quarter from years 2005 to 2010.

The strong 7. 1 percent growth in the last quarter of 2010 resulted to an annual GDP growth of 7. 3 percent from a low 1. 1 percent in 2009. This year’s 2010 growth is within the National Economic and Development Authority (NEDA) forecast of 7. 0 to 7. 4 percent and, as expected, well above the official growth target of 5. 0 to 6. 0 percent. These figures show the steady development of the Philippines in its industries which proves that further investment on table egg production can be met. Source: National Statistics Coordination Board Figure 1.

Percent Change of the Philippine Gross Domestic Product per quarter aaaaaaaafrom 2005 to 2010. Aside from the GDP, another important factor is the inflation rate. Figure two shows the Philippine inflation from years 2005 to 2010. After the inflation rate drastically increased to 9. 30 percent due to the global financial crisis, it finally declined to 3. 20 percent in 2009 and slightly increased to 3. 8 percent in 2010. All in all, with a positive GDP and a steady rate of inflation it can further supports the previous statement on further investment in the table egg industry.

Source: National Statistics Office Figure 2. Philippine Inflation from 2005 to 2010. World Supply and Demand for Poultry Egg The world’s production of table egg shared an increasing trend from years 2005 to 2009 (as seen in Table 1). This trend is somehow in line with the increasing population at a global scale which serves as a market of poultry products such as table eggs. According to the United States Census Bureau, the world’s population reached 6, 852, 472, 823 in 2010 and is estimated to increase to up to 7 billion in 2011. This is somehow an indicator that the demand for food supply would also increase.

Based on the most recent data gathered by the Food and Agriculture Organization of the United Nations (FAO), the world’s total poultry egg consumption reached to 56, 927, 158 metric tons in 2007 and is projected to reach 59, 729, 068 metric tons in 2010. It was also seen that Asia had the highest poultry egg consumption with a projected amount of 35, 093, 226 metric tons, followed by Americas with 11, 446, 456 metric tons. Table 1 shows the world’s total consumption of poultry egg from 2005 to 2010. Table 1. Poultry Egg Consumption Summary, 2005-2010 (in metric tons) CONTINENTYEAR 2005200620072008p2009p2010p

Africa1, 974, 8882, 030, 0592, 105, 7542, 184, 2712, 265, 7172, 350, 199 Americas10, 363, 80710, 481, 14610, 714, 56010, 953, 17211, 197, 09811, 446, 456 Asia32, 554, 64933, 635, 10033, 993, 85134, 356, 42834, 722, 87335, 093, 226 Europe9, 825, 1469, 692, 5549, 926, 31610, 165, 71610, 410, 88910, 661, 976 Oceania194, 415183, 848186, 678189, 552192, 469195, 432 World54, 912, 90456, 022, 70756, 927, 15857, 846, 21158, 780, 10159, 729, 068 Source: Food and Agriculture Organization of the United Nations (FAO) p- projected In terms of the world’s poultry egg supply, there is also an increasing trend (as seen in Table 2) in the global production.

As of 2009 the world production reached to 62, 839, 514 metric tons and is projected to increase to up to 63, 701, 276 metric tons in 2010. Also similar to the world’s consumption data, Asia was the highest contributor in the world’s egg production. Asia had produced an estimate of 37, 808, 418 metric tons of poultry eggs for 2010. This was also followed by the Americas with 12, 730, 650 metric tons. Table 2 shows the world’s supply of poultry egg from 2005 to 2010. Table 2. Poultry Egg Production Summary, 2005-2010 (in metric tons) CONTINENTYEAR 200520062007200820092010p

Africa2, 267, 1932, 374, 2032, 516, 8592, 588, 0502, 596, 9702, 605, 921 Americas11, 599, 49712, 230, 26512, 234, 99712, 407, 29812, 567, 93412, 730, 650 Asia32, 759, 93533, 091, 15234, 708, 33436, 509, 62437, 153, 34637, 808, 418 Europe9, 865, 97710, 050, 26510, 004, 01810, 254, 04710, 290, 94410, 327, 974 Oceania205, 425239, 146224, 499230, 391230, 320230, 249 World56, 698, 02857, 985, 03259, 688, 70761, 989, 41062, 839, 51463, 701, 276 Source: Food and Agriculture Organization of the United Nations (FAO) p- projected As indicated in the tables of world’s consumption and production of poultry eggs, the supply was able to meet the demand for the product.

For a summary, Figure three shows a comparison of the world’s total consumption and production from years 2005 to 2010. In 2007 there was a surplus of 2, 761, 549 metric tons and drastically increased in 2008 with a surplus of 4, 143, 199 metric tons. The surplus in the world’s supply of table eggs can be contributed by the technological advancements in the poultry industry of some of the countries. This may also have been a result of having a shift in demand for other protein sources in other countries. Figure 3. Comparison of the world’s total consumption and total production Philippine Poultry Egg Performance As what was discussed earlier, there is an increase in the trend of production of poultry eggs in the world, where the Philippines shared the same trend. The country’s total poultry chicken population, as of 2010, reached to 162. 7 million heads (as seen in Table 3). This figure is 2. 34 percent higher than the 2010 inventory of 158. 98 million birds. As specifically for poultry layers, a 9. 82 percent increase was reached by the end of 2010, where the table egg shared 5. 12 percent growth. This growth in production was mostly contributed by commercial farms, representing 84. percent total egg output. Initially, poultry farms are characterized by the use of native breeds. Compared to broiler-type, native chickens are more manageable because it entails less growing activities. Native chicken does not require complex feeding requirements. A simple crop residue and grain spillage along with rice can already serve as food. Thus, raising native chickens is not so much affected by the continuous increase in feed costs. An increment in the production of native breeds can be seen in 2009 to 2010, from 76. 54 million heads in 2009, to 78. 11 million heads in 2010.

However, it can be noticed that the Bureau of Agricultural Statistics projected a decrease in the population of native breeds. This may indicate a shift of some poultry breeders to commercial practices. Replacement of native chicken into commercial breeds introduced changes in the poultry subsector. Grandparent stocks were being imported from other countries such as the United States to produce day old chicks. Feed ration were carefully controlled for proper nutrition of the birds against diseases. Table 3. Chicken Inventory, by Classification, Philippines, as of January 2009- aasdsdsddd2011P (in million birds) BIRD TYPEYEARpercent CHANGE 0092010201110/0911/10 CHICKEN158. 66 158. 98 162. 70 0. 20 2. 34 Broiler56. 94 52. 21 54. 71 (8. 31)4. 78 Layer25. 18 28. 64 31. 45 13. 73 9. 82 Laying Flock18. 21 23. 67 26. 39 29. 88 11. 49 Growing Flock2. 29 3. 86 4. 15 68. 56 7. 51 Day-Old-Layer1. 05 1. 11 0. 91 5. 71 (18. 02) Native Improved76. 54 78. 11 76. 56 2. 05 (1. 98) Source: Bureau of Agricultural Statistics P-preliminary Figure 4. Graphical Representation of the Philippine Chicken Inventory, 2010. Supply and Demand of Table Eggs With the increasing population of the country, demand for poultry eggs is clearly expected to increase.

In 2009, the total consumption of poultry eggs reached to 347, 771 metric tons. It is 5. 39 percent higher than 2008 with 329, 983 metric tons and 15. 32 percent higher compared to 2005. On the other hand, the gross production of poultry eggs from 2005 to 2009 is also increasing. The recorded supply of poultry eggs in 2005 was 320, 827 metric tons. It increased by 15. 29 percent in 2005 with 369, 879 metric tons. It was also projected by the Bureau of Agricultural Statistics that the supply of poultry eggs reached 387, 335 in the end of 2010. This shows the steady growth of the poultry egg industry.

Table 4 shows the Philippines’ production and consumption for poultry eggs from 2005 to 2009. Figure 5 shows the comparison on the country’s total supply and demand for chicken. Table 4. Philippine Supply and Demand for Poultry Eggs, 2005 to 2009 a (in metric tons) YEARSUPPLYDEMAND 2005320, 827301, 571 2006330, 389310, 572 2007335, 355315, 249 2008351, 030329, 983 2009369, 879347, 771 Source: Bureau of Agricultural Statistics Figure 5. Comparison of the Philippine Supply and Demand for Poultry Eggs from 2005-2009 Based on the figure above, there is a steady supply of poultry eggs in the Philippines from 2005 to 2009.

The surplus or the gap between the supply and demand of poultry eggs is utilized for hatching by producers. In terms on the regional inventory, CALABARZON, Central Luzon, Central Visayas, and Northern Mindanao were the major producers of poultry eggs (as seen in Table 5). Among these areas, CALABARZON or Southern Tagalog remained as the leader in poultry eggs supply in 2010, with 112, 096 metric tons of poultry eggs produced. This was followed by Central Luzon, with 75, 523 metric tons, Central Visayas with 39, 119 metric tons, and Northern Mindanao 34, 534 metric tons.

Table 5 shows the regional inventory of poultry egg from 2005 to 2010. Table 5. Regional Inventory of Poultry Eggs, 2005-2010. REGIONSYEAR 200520062007200820092010 PHILIPPINES320, 322330, 288335, 104350, 789368, 464387, 335 CAR2, 7512, 7192, 6262, 6932, 9162, 883 Ilocos Region10, 45512, 38914, 74216, 04616, 64116, 775 Cagayan Valley9, 37210, 0159, 4619, 3668, 1128, 496 Central Luzon54, 46658, 04562, 28068, 76071, 52675, 523 CALABARZON86, 95486, 08687, 16293, 53899, 934112, 096 MIMAROPA4, 3164, 0584, 0754, 1384, 1564, 264 Bicol Region22, 96723, 11715, 65513, 94116, 12416, 194 Western Visayas23, 13122, 05823, 21625, 35526, 77927, 841

Central Visayas33, 49234, 22336, 58434, 16937, 04139, 119 Eastern Visayas6, 5895, 5505, 2664, 5994, 4073, 373 Zamboanga Peninsula8, 2618, 4878, 7989, 7649, 8289, 684 Northern Mindanao24, 39428, 37129, 63932, 33333, 64434, 534 Davao Region20, 98621, 64220, 49520, 25222, 28921, 464 SOCCSKSARGEN6, 6777, 4868, 1939, 0178, 7578, 974 Caraga2, 5802, 3802, 9862, 7202, 2682, 325 ARMM2, 9313, 6623, 9264, 0984, 0423, 790 Source: Bureau of Agricultural Statistics Poultry Imports The Philippines is currently not part of the international trade of poultry eggs, since the surplus of the country’s poultry egg production are mostly utilized for breeding of additional layer stocks.

However, in terms of importation, the Philippines purchase imported and processed egg products from countries with cheaper production cost. These processed eggs are usually in a form powder. Powdered poultry eggs are usually used as fresh egg substitutes in food manufacturing and processing. Table 6 shows the amount of imported table eggs relative to the total egg supply of the country. Although imports comprise an insignificant portion of supply, this poses a big threat to the local industry as these are increasingly being used by major food producers.

Currently, large multinational food companies like Kraft Foods, California. Manufacturing Corp. , and Nestle are now making use of powdered and processed eggs as raw materials. However, according to the most recent data of the Bureau of Agricultural Statistics, the Philippines did not import any poultry egg products in 2010. This may show that the Philippines is recently producing their own processed egg products. Table 6. Philippine Poultry Egg Imports and Percent Share to the Total Poultry Supply from 2005 to 2009. YearLocally ProducedImportsTotal Supplypercent Share 2005320, 322505320, 8270. 6 2006330, 288101330, 3890. 03 2007335, 104251335, 3550. 07 2008350, 789241351, 0300. 07 2009368, 4641, 415369, 8790. 38 Source: Bureau of Agricultural Statistics Demographic Development The Philippine population is increasing throughout the years. Based on the data seen on table 7, from the 86, 972, 500 population in 2006 there is an increment of 5. 79 percent in 2009 with 92, 226, 600. It was also forecasted that in 2010, the population would further increase by 94, 013, 200.

However, population growth rate recorded by the National Statistics Office (NSO) was at a decreasing rate. The 1. 95 percent growth from 2006-2007 was lessened to only 1. 91 from 2008-2009. By 2010, the rate was forecasted to be only 1. 90. Table 7. Philippine Population, 2006-2010 YEARPOPULATIONGROWTH RATE (percent) 200686, 972, 500 200788, 706, 3001. 95 200890, 457, 2001. 93 200992, 226, 6001. 91 2010f94, 013, 2001. 9 Source: National Statistics Office f-forecast There are a small number of people added every year. However, still the number is increasing.

This implies that the demand for food also increases. Since most of the consumers nowadays are price sensitive, they look for a protein source that is cheap. From 2007-2009 there is an increase in total chicken egg consumption. A 10. 30 percent increase was seen in 2007 utilization of about 335, 335 metric tons up to 369, 879 chicken egg consumption in 2009. The recorded per capita consumption was 3. 69 kg/yr or 10. 11 g/day in 2009. These statistics are higher compared to the 3. 57 kg/yr or 9. 78 g/day in 2008. Table eight shows the chicken egg utilization from 2007-2009. Table 8.

Per Capita consumption of chicken eggs, 2007-2009 (in metric tons) YearTotalKg/yrg/day 2007335, 3353. 489. 53 2008351, 0303. 579. 78 2009369, 8793. 6910. 11 Source: Bureau of Agricultural Statistics, 2010 Technological Developments Technological advances are most beneficial to larger farms since they can adopt technology more easily than smaller farms. It increases productivity and efficiency. In developing countries changes in the poultry production technology, marketing, and changes in feed ingredients are key structural changes necessary for the growth of poultry egg production.

One of the most significant technological advances that had taken place in the poultry industry is the utilization of hybridization and artificial insemination. These breeding technologies served as a catalyst in the process of genetic improvement. Hybridization and artificial insemination somehow minimized the risk of disease transmission, and expand the number of animals that can be bred from a superior parent. Further studies regarding animal genome mapping, molecular biology, physiology, biological efficiency, and applied farm record-keeping systems introduced improvements in livestock breeds.

In terms of layer feeds, sufficient amount of micro-nutrients present in their diet is crucial. The use of linear programming for determining the least-cost formulation of feed based on current market prices and small changes in relative prices can cause significant changes in demand for available feed ingredients was a major technological change for the feed industry. The application of the programming techniques for feed formulation paralleled the introduction of intensive systems of animal production in many countries (FAO, 2002). Political Developments

The Minimum Access Volume (MAV) or the minimum number of poultry heads that foreign poultry producers are allowed to export to the Philippines is 23, 490 metric tons from years 2005 to 2007, and still in 2009 the Philippine Agricultural Secretary announced that the Minimum Access Volume is unchanged. However, tariff rates for ASEAN decreased by 20 percent and it is expected to go down up to 5 percent in 2010. Republic ActNo. 3639 (RA 3639) established and empowered BAI to prescribe safety standards in the importation, labeling and distribution of poultry, livestock, meat products and veterinary supplies and animal feeds.

Aside from this the agency is also responsible in preventing, controlling, containing and eradicating communicable animal disease by regulating the flow of animals and animal products in the country. Avian Influenza attacked the United States, this is the reason why imports from some states in the country such as Maryland, Delaware and Texas were banned. Since 2002, poultry products in Pennsylvania were also banned due to an influenza outbreak in the said state. However, the lifting of the import bans in the Philippines was requested. The Bureau of Animal Industry indicated that it will soon lift the bans.

Micro environmental Analysis Key Players At present, four major regions of the Philippines constitute the 77. 5 percent of the total egg production in the Philippines. These regions are CALABARZON, Central Luzon, Central Visayas, and Northern Mindanao. The remaining 32. 5 percent came from other regions of the country. Majority of layer egg producers are of backyard or small scale farms. About seventy percent of the total table egg producers in the Philippines have layers counting to an average of only 7, 00 heads. Customers Chicken eggs are usually sold in super market, wet markets and the retail stores.

Local consumers usually incorporate eggs as an ingredient for dishes such as noodles and porkchop. It can be simply fried or boiled as a main protein source within a meal. Businesses like bakeries producing pastries such as cakes and bread like Mernel’s and other businesses consider table eggs as a critical raw material for their products. Market Channels The marketing distribution of commercial egg farms are more organized than the backyard farmers. The marketing distribution of commercials farms is being done through a number of intermediaries such as viajeros, wholesalers, retailers, wholesalers-retailers.

As compared to backyard growers which are mostly sold to wet markets since they cannot reach the scale needed for commercial markets.