



# **NORTH TECHNICAL UNIVERSITY**

## **FACULTY OF ENGINEERING IN APPLIED SCIENCES**

### **CAREER OF INDUSTRIAN ENGINEERING**

**IBARRA-ECUADOR**

**ARTICLE ENGLISH**

#### **TOPIC:**

**"DESIGN OF A PROCESS MANAGEMENT SYSTEM IN THE AREAS OF PRODUCTION AND COMMERCIALIZATION OF THE FACTORY MEATS AND SAUSAGES OF THE RANCH OF THE CITY OF IBARRA"**

**AUTHOR :** Ibarra Ruano Mayra Liseth

**DIRECTOR:** Ing. Edwin Rosero MSc.

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## SUMMARY

This study was conducted in the Factory Canned Meats Ranch, located in the Chorlavi sector, Calorina Ranch City Ibarra, Imbabura Province. This research paper presents a methodology Implementation Process Management System, designed for Improving Productivity and Quality in the Areas of Production and Marketing.

While a general level a study of this type should be applied across the enterprise, since the procedure requires a process, in this case management applied by Processes for Production Area which is the most important area of all Area business and marketing which has seen the need to improve certain levels of quality and productivity.

In every business there are rules, procedures and operational instructions that determine how it is to proceed on certain occasions or what should be the best method for performing a process or an inspection.

The efficiency of an organization is measured by the degree of fulfillment of the objectives: ie comparing actual results with expected results. There is

talk of an efficient action when such results are achieved with the minimum possible resources that do not affect the quality and timeliness.

Instead we speak of efficiency when the results of an activity or service is obtained regardless of the resources used to obtain them.

The growing demand for meats in general and particularly the preference of end users and customers Meats and Sausage Ranch, to expand its production for needs that all processes are well designed to achieve all desired goals goals and which will be realized in the course of years.

This family business operating in the province of Imbabura with fundamental processes according to their evolution, some have worked in the right way and no other recent, have prevented optimal use of resources.

Precisely the production and commercialization processes are those that have not functioned properly so they need to be evaluated for possible flaws, overcome them should contribute to strengthening the rulers , core and enabling processes, this should seek

the commitment of company workers laboring with efficiency, effectiveness and quality.

To this end, this research has made that reflected in the attached document and consists of seven chapters.

With the system design process management allowed the first results on the efficiency of the processes running the area of production and marketing , the inherent risks are identified and control and a first approach to possible irregularities or errors are taken into regarding control that had the area under evaluation, the same as would be later confirmed in the development of the implementation phase of working papers as it is at the moment is where it has already obtained sufficient competent evidence of the shortcomings in the management.

At the end of the design process management, it was possible to meet the objectives set, allowing the Factory

Canned Meats Ranch, improve process management, minimize risk and optimize resources.

The Company is being flexible with their processes too, having no manual that tells them what to make and what should govern their workers.

The factory should conduct ongoing internal processes of the company evaluation and corrective measures implemented in the processes, with the aim of continuous improvement and updating based on changes in the environment.

Must also hold meetings with employees and all personnel of the factory in order to clarify their respective roles and responsibilities, emphasizing the importance of each.

The work , be a favorable model for management students at the NTU and anyone interested in deep research in industrial companies dedicated to producing and marketing meat products.

## CHAPTER I

### 1. DEFINITION, TYPES, CHARACTERISTICS AND BENEFITS OF PROCESS MANAGEMENT SYSTEM

#### 1.1 . INTRODUCTION.

This thesis project proposes a model for managing processes for Fabric Canned Meats Ranch because it has not established and standardized processes, thus improve their current situation.

The proposed improvement includes methods and tools to help in the evaluation process and its effect will enable senior management to make decisions for continuous improvement.

Process management is how to manage the entire organization based on processes. Provided these as a sequence of activities to generate added value over an entrance to get a result, or

EXIT to satisfy customer's requirements activities.

A management system therefore helps an organization to establish methodologies, responsibilities, resources and activities that allow oriented towards getting those "good results" you want to run , or what is the same, achieving the objectives set .

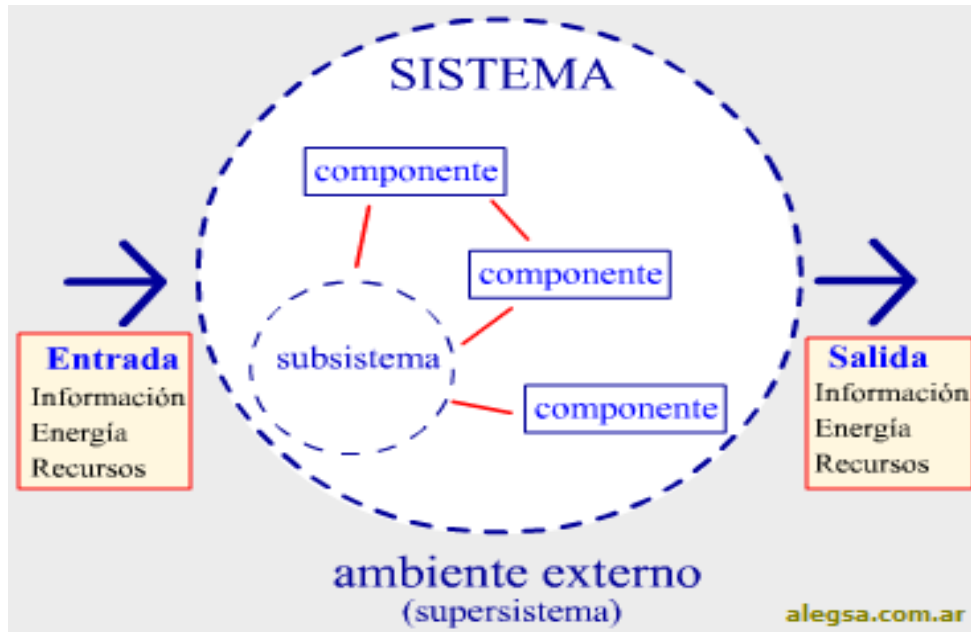
**Source:** (Ibarra, 2012)

#### 1.2. DEFINITION OF SYSTEM.

A system is a set of parts or related items organized and interacting to achieve a goal. Systems receive (input) data, energy or matter from the environment and provide (output) information, energy or matter.

Each system exists within a larger one, so a system can consist of subsystems and parts, and also can be part of a supersystem.

**Source:** ( D. R. © , 1998-2012 )



**Illustration No. 1: Definition of system**

**Source:** (RESERVED, 998-2012)

The figure is a representation of the system thus defined is a system which consists of a set of elements that are interconnected to obtain the same result.

### 1.3. DEFINITION OF MANAGEMENT.

Coordinated activities to direct and control an organization, you can define management as guides to guide action, forecasting, visualization, and use of resources and efforts in order to be achieved, the sequence of activities to

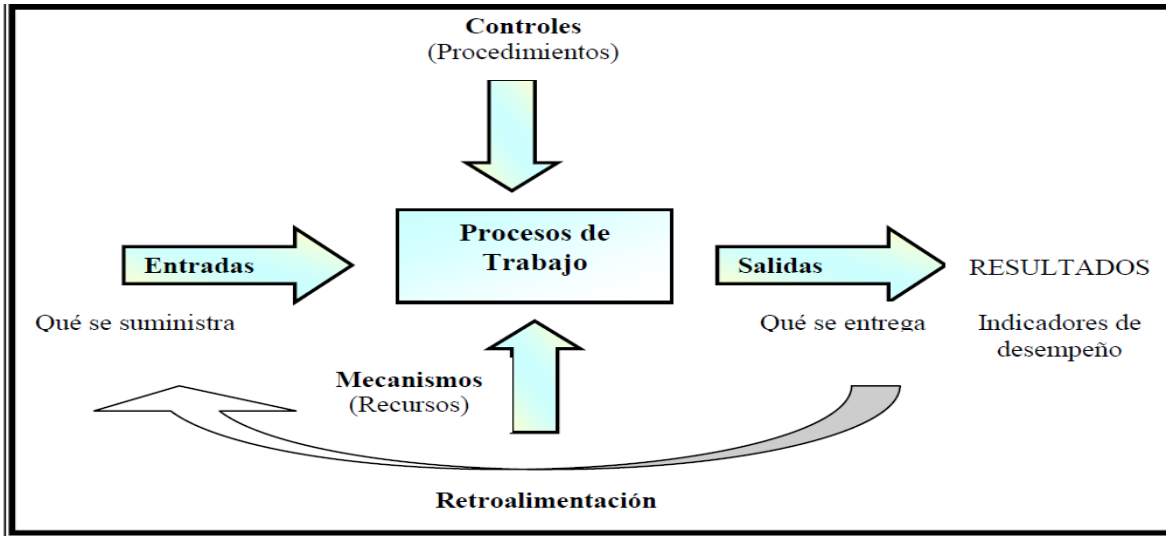
be undertaken to achieve objectives and the time required to perform each of its parts and all those events involved in their achievement.

**Source:** (HUNT, 1993)

### 1.4. DEFINITION PROCESS.

It is defined as "a set of mutually related or interacting activities which transforms inputs into outputs".

**Source:** (ISO), O I. (1987). GENEVA, SWITZERLAND.



**Illustration No. 2: Process**

Source: (Muro , 2010)

## CHAPTER II

### 2. MANAGEMENT MODELS AND PROCESSES BASED APPROACH

#### 2.1. BASED APPROACH AS PRINCIPLE MANAGEMENT PROCESSES.

The process approach is a basic and fundamental principle for achieving results, management as laid out in both the ISO 9000 and the EFQM model. The principle of "process approach" in the ISO 9000 family, 2008 The current family of ISO 9000 standards in 2008 for " Systems Quality Management " has allowed to introduce some important changes in these

systems compared to the previous 1994 version. The greatest evidence of this is precisely the fact that this family of standards is based on eight principles of quality management, which were not included in the previous version.

This highlights the importance of considering these principles as cornerstones to consider if you want to implement systems or management oriented models achieve good business results effectively and efficiently, in terms of satisfaction of different stakeholders as appropriate (ISO 9001 or ISO 9004).

## Principles of Quality Management

Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.

**Leadership:** Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the objectives of the organization.

**Involvement of people** People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the benefit of the organization.  
**Process approach:** A result is achieved more efficiently when activities and related resources are managed as a process.

**System approach to management:** Identifying, understanding and

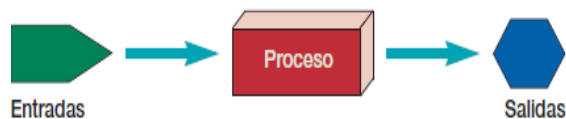
managing interrelated processes as a system contributes to the effectiveness and efficiency of an organization in achieving its objectives.

**Continuous improvement** Continual improvement of the organization's overall performance should be a permanent objective of the. **Factual approach to decision making:** Effective decisions are based on the analysis of data and information.  
**Mutually beneficial supplier relationships:** An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

It could be argued that it is not appropriate to address the implementation of a Management System of Quality without first having analyzed and understood these principles. This principle holds that "the result is achieved more efficiently when activities and resources are managed as a process."

To understand this principle, you must know what is meant by process. According to ISO 9000:2000 a process

is "a set of interrelated activities or interacting activities which transforms inputs into outputs" . With this definition, we can deduce that the process approach emphasizes how to obtain desired results can be achieved more efficiently when considering the activities grouped together , considering , in turn , that these activities should enable a transformation of some inputs into outputs and that this transformation should add value , while control over all activities are exercised.



**Illustration # 5: Process**  
**Source:** (Andalusian Institute of Technology, 2005)

By considering the activities grouped together forming processes allows an organization to focus on "results areas" (as the processes required to obtain results) that are important to understand and analyze for the control of all activities and conduct the organization towards achieving the desired results.

This approach leads to an organization toward a series of actions such as:

- Systematically define the activities that form the process.
- Identify interfaces with other processes.
- Define the responsibilities regarding the process.
- Analyze and measure the results of the capacity and efficiency of the process.
- Focus on resources and methods for process improvement.

Being able to exercise constant control over individual processes and their links within the system of processes (including their combination and interaction) can know their results each of the processes and how they contribute to achieving the overall objectives of the organization. Following the analysis of the results of processes (and trends), is further focus and prioritize improvement opportunities allow.

The principle of "process approach" in the EFQM model

The importance of the process approach is also evident through the basics of the EFQM Business Excellence model.



Similarly to what happens with the ISO 9000 family , the EFQM model recognizes that there are certain fundamental concepts that form the basis of the same . The basics of relationship management that includes this model is not due to any particular order or try to be exhaustive, since they may change over time as they develop and improve the excellent organizations.

**Source:** (Andalusian Institute of Technology, GUIDE BASED MANAGEMENT PROCESSES, 2012)

### **CHAPTER III**

#### **3. THE QUALITY MANAGEMENT SYSTEM ISO 9001:2008 - MANAGEMENT INDICATORS USED IN THE PROCESS.**

##### **3.1. QUALITY MANAGEMENT SYSTEM STANDARD ISO 9001-2008**

The foundation of any company 's strong growth in commitment to quality . The Quality Management System (ISO 9001: 2008 ) facilitates the process and

makes it easy for the organization to obtain the certificate of ISO 9001:2008 .

This International Standard aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable regulations. A system of quality management is a well documented and integrated technical and managerial procedures to guide the actions of the labor force, machinery or equipment operating work structure, and organization of information practical and coordinated and to ensure customer satisfaction and lower costs for quality.

In other words, a System of Quality Management is a series of coordinated activities carried out on a set of items (resources, Procedures, Documents, Organizational Structure and Strategies) to ensure the quality of products or services customer service, planning, control and improve those elements of an organization that influence customer satisfaction and achieving the results desired by the organization.

ISO 9001:2008. ISO 9001:2008 is the latest version of the standards developed by the International Organization for Standardization that is applied when the objective is : Consistently achieve customer satisfaction with the products and services provided by the organization Demonstrate the ability to demonstrate compliance with user requirements and regulations applicable to continuously improve the Management System (QMS ) certify those organizations seeking recognition of the SGC, by a third party, by an entity independent certification through a process approach.

**Source:** (Feigenbaum,1991)

## **CHAPTER IV**

### **4. PRODUCTION AND MARKETING OF MEAT AND SAUSAGE IN ECUADOR.**

#### **4.1. INTRODUCTION.**

Traditionally the preparation of sausages has been empirically, since no microbial activity relationship was known, and essentially sensory, which

were developed in the product during curing.

Today we know that changes in the composition, taste, smell and color that occur in fermented meat products are primarily due to natural microbial or added, which takes place in the product during fermentation and maturation of this and has a strong enzymatic activity.

The process consists mainly of receipt of the jammed raw material, mixing, emulsifying, smoky cooking, cooling, cutting, packaging and labeling , storage and distribution . This seeks to optimize production flow management, health and performance to deliver the highest quality product possible. The sausages can be defined as a mixture of minced meat , fat, salt , curing agents , sugar, spices and other additives , which is introduced into natural or artificial casings and subjected to a fermentation process carried out by microorganisms , followed of a drying phase . The final product is stored before being distributed to different outlets for consumption.

**Source:** (ECUADOR, 2011)

The country's manufacturing activity sausage has more than 85 years, there are specialized farms and hatcheries for the treatment of pigs, cattle and poultry, which are used as raw material for the production of sausages.

#### **4.2. AND SAUSAGE MEAT PRODUCTION IN ECUADOR.**

At October 11, 2011, the market was driving more than 130 brands, of which 60 % belongs to the formal industry and 40 % to informal production. A smaller fraction is imported.

**Source:** (TODAY NEWSPAPER PUBLICATION, 2011)

In the Ecuador market sausage is distributed as follows: There are more than 300 factories, of which only 30 are legally constituted. Of these, the three largest companies are National Food Processing (Pronaca) Plumrose Meats and Sausages Don Diego. In the industry they work 25 000 people directly.

According to the Central Bank, as of

August 2011 Ecuador imported \$ 288,000, of which 47 % came from the United States and 43% of Chile. In the same period of 2010, imports reached \$ 311,000 with Chile being the main supplier with 49%, followed by the U.S. with 40 %.

Among the importers of sausages include: Supermarkets La Favorita, SA Kodama, The Spanish SA , Alirap SA , Italcom , among others. Finally, an important source of consumption comes from the informal production. The production of these sausages is questioned by the mixture of meat and flour illegally and marketing, most times , it is done outdoors.

**Source:** (ECUADOR, 2011)

#### **4.3. MARKETING MEAT AND SAUSAGE IN ECUADOR.**

##### **4.3.1. MAJOR MARKETS.**

These small producers represent 80 % of total supply that is intended to satisfy the domestic market and partly the border markets of Colombia and Peru, in the domestic market leading manufacturers and consumers of meat

sausages are the province of Azuay, Pichincha, Guayas, Imbabura, and Carchi.

**Source:** (Ibarra, 2012)

#### **4.3.1.1 . National Market.**

Ecuador produces bologna sausages hams, sausages, Vienna, pate. Of these products, the most desirable are the bologna and sausages. Both varieties account for 75 % of national production. Followers 14 % sausage, ham with 5% and the remaining 6% belongs to other presentations. According to company sources Pronaca, this year 29 million kilos will occur.

There are other unofficial figures, citing company Sausages Don Diego, where he states that occur in Ecuador from 36 million to 50 million kilos of sausages annually, every Ecuadorian consumed 2.77 to 3.85 kilos each year. This range is wide and reflects the number of companies that are not regulated and can not have a specific figure.

According to Jorge Llanos, regional manager Don Diego, the firm produces

about 4000 tons per month , and the first half of 2011 increased sales by 35 % compared with the same period last year.

The Italian firm he has not gone wrong. They confirm that grow annually by an average of 15 %, reaching more than \$ 4 million.

While there are no exact figures on consumption of sausage nationwide, a study of IpsaGroup, held in Quito and Guayaquil, determined that , between the two cities , the first accounts for 52 %. However, consumption habits in these cities are different. In Guayaquil more bologna (37% ) and in Quito , sausage (63% ) is consumed. As for brands, there are also differences. The Guayaquil and Quito prefer Plumrose, Juris, according to the report .

General Duties: This product enjoys tariff preferences, following the Convention with Ecuador and Chile 1995. The ACE Economic Complementation Agreement No. 32, which releases tariffs on imports of sausages from Chile to Ecuador. However countries belonging to the

Andean Community of Nations (CAN) have the same preferential treatment.

**Source:** (Today, 2011)

#### 4.3.1.2 . Preference in consumption.

Consumer Culture in the Ecuadorian population has evolved in terms of their buying preferences , particularly for

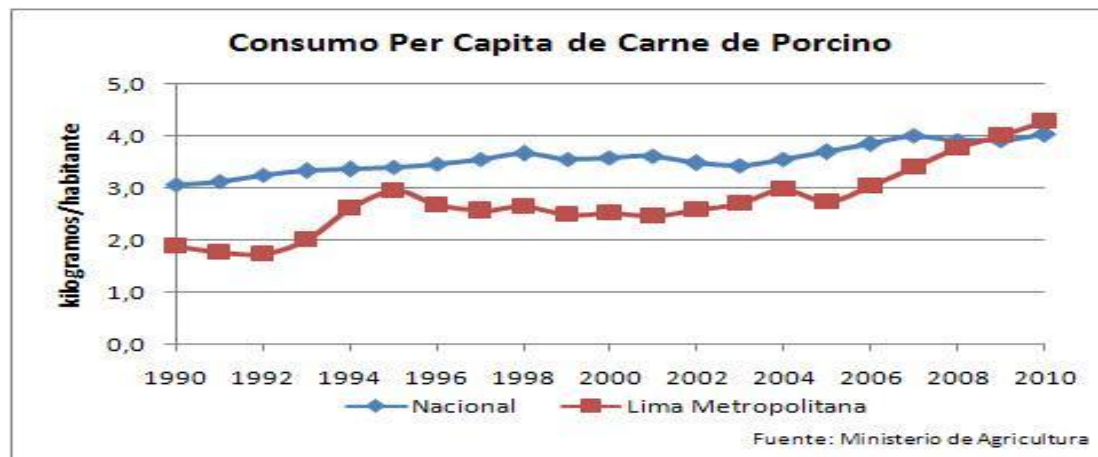
foodstuffs , consumer The custom has been generally based on price , especially due to economic factors , however , currently the price of the sausage does not affect greatly in size, but rather other factors, such that 38.1% of those who consume meats prefer to buy a quality product , the 34.0 % price analyzes , and , 26.4 % purchase brand.

### PURCHASE PREFERENCE

DEMANDA	PREFERENCIA	FRECUENCIA	PORCENTAJE	PORCENTAJE ACUMULADO
CONSUMIDOR	Precio	180	22,50	22,50
	Marca	140	17,50	40,00
	Calidad	202	25,25	65,25
	Publicidad	8	1,00	66,25
	<b>SUBTOTAL</b>	<b>530</b>	<b>66,25</b>	
NO CONSUMEN		270	33,75	
	<b>SUBTOTAL</b>	<b>270</b>	<b>33,75</b>	
<b>TOTAL</b>		<b>800</b>	<b>100</b>	

**Table No. 10: Reference Purchase**  
**Source:** (Central Bank of Ecuador (BCE))

#### 4.4. STATISTICS OF PRODUCTION AND MARKETING OF MEAT AND SAUSAGE NATIONWIDE.



Source: Ministry of Agriculture

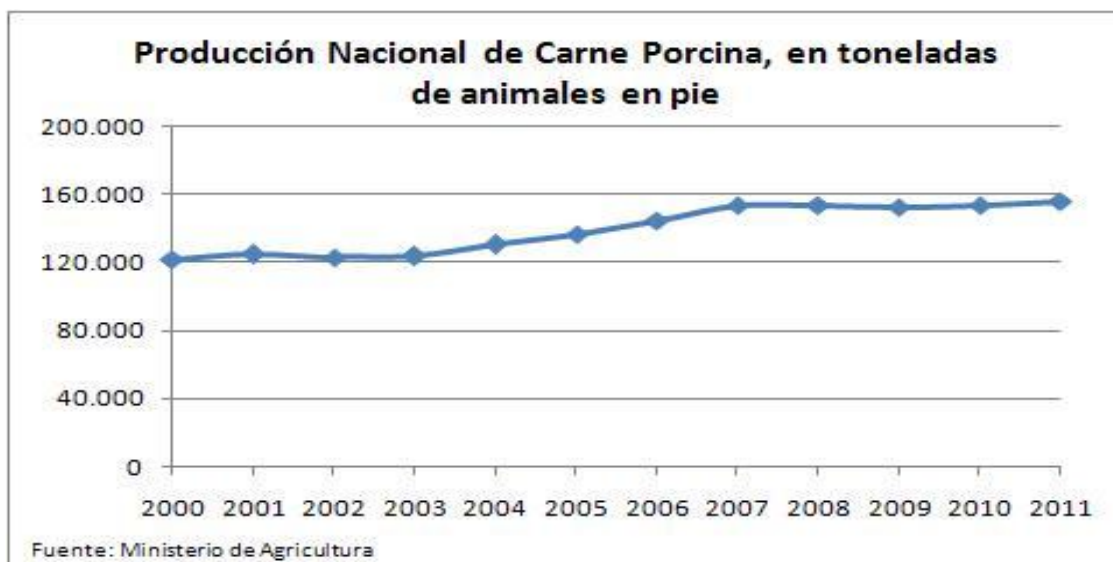


Illustration 18: National Meat Production

Source: Ministry of Agriculture

The national production of pork meat in 2011, considering the animals standing,

was 156.353 tonnes in the chart you can see how it has evolved national pig

production . In June this year, the production of live animals was 78.051 tons , 2 % higher than production last June .

The five main producing regions of pork accounted 60.42 % of the total production of the country.

**Source:** Ministry of Agriculture.

## **CHAPTER V**

### **5. BACKGROUND, LEGAL PERSONALITY , ORGANIZATIONAL STRUCTURE AND PLANNING STRATEGY OF MEAT AND SAUSAGE FACTORY RANCH**

#### **5.1. BACKGROUND**

MEAT AND SAUSAGE RANCH is located in the city of Ibarra - Ecuador Pan 4 Km south up to the ranch inn Carolina. Our company was established since the year 1998, and Swiss standards using high quality techniques, introduced in the market a select line of meats and sausages consumer.

The same accompanied by a committed and talented team of collaborators have led the company to a major stake in the food sector; merit obtained by the quality, variety and presentation of their products, recognized by our consumers.

We are a medium sized company, but we have programs for consumer protection globally known as Hazard Analysis and Critical Control Point, GMP (Good Manufacturing Practices). Our materials come from farms carefully chosen for the selection of beef, pork and chicken, allowing us to deliver quality.

The group of customers and consumers who currently possess has allowed us to grow and expand our market to currently cover 100 % of the province of Imbabura and a large section of Pichincha.

Our products are sold directly from the producer to the consumer, without intermediaries, ensuring factory prices, providing a quality product and 100 % natural.

## 5.2. LEGAL PERSONALITY

It manufactures Canned Meats is a business of a sole proprietorship, the same that meets all legal requirements for operation as such may exercise rights and obligations through legal representative and are typified by the Act, ie Act determines their characteristics and therefore decreed line a kind of company.

**Source:** (RANCHO, 1998)



**Source:** (RESERVED, 998-2012)

### 5.2.1. GENERAL DESCRIPTION OF THE AREAS OF FACTORY

#### FINANCIAL ADMINISTRATIVE AREA

This area is responsible for the following activities:

- Define, implement and monitor systems and procedures of all business units.
- Monitoring the implementation of rules and principles for the registration and

control of commercial and financial transactions to ensure the fairness and validity of the information.

- Represent the company in all actions and transactions with third parties.
- Manage systems selection and management of staff.
- Designing wage policies implemented in the company.
- Provide each of the business units of goods and items to support the normal development of the activity.
- Prepare the annual operating budget of the company.
- Monitor financial management, so that the timely availability of resources to meet the immediate demands of the company's business.
- Perform the payments both to workers as suppliers of raw materials.
- Within this area also collections are made.

Addressing and control of the activity in the administrative and financial area has been fully executed by the Manager of the company, who is also constantly monitoring the production phase .

For ease of management has defined administrative area in financial



accounting, who also serves as the secretariat and is responsible both accounting records movement, based on invoices and sales receipts made in the Del Rancho offices.

Source: (RANCHO, 1998).

## **PRODUCTION AREA**

One of the basic objectives for the establishment of the company was to provide the province of Imbabura food quality and 100 % natural.

For this reason the company has a production area, which is responsible for preparing sausages based on the technical and nutritional specifications.

The Rancho Factory has an average production of 320 Kilos Daily.

## **AREA MARKETING**

This area includes the object of the company, trading product, which is produced in the company. Currently the company uses the following marketing channel.

### **Manufacturer - Retailer – Consumer**

:

This channel employ some companies sending their employees ( who earn a salary from the company) to make sales directly to retailers (with the list price of the production company), and these in turn sell to consumer, this distribution channel uses Fabrica Del Rancho .

### **Manufacturer - Consumer:**

This channel is used by companies when they open a small shop to sell products directly to consumers.

### **Points of Sales**

Canes and Sausages it manufactures the Rancho has a point of sale in the city of Ibarra , address Teodoro Gómez Avenue No. 728 - Bolivar and mainly for having great reception from the public, and therefore should seek to supply these markets , since our product is quality oriented .

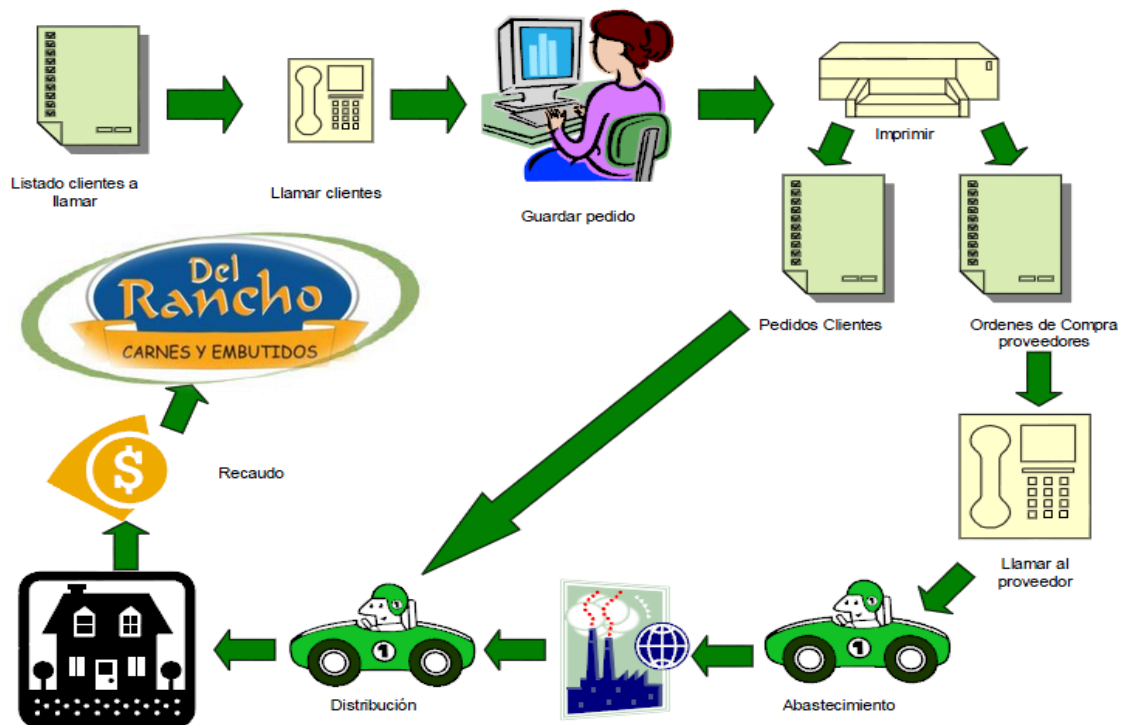
## CHAPTER VI

### 6. STATE OF PROCESSES IN THE AREAS OF PRODUCTION AND MARKETING OF THE FACTORY OF RANCHO

#### 6.1. PRODUCTION AREA

In the production plant "Del Rancho" sausage products share the same

##### 6.1.1.1. ORDER REQUIREMENTS



methods some products and production processes, the variables that make them different are the time, amount and type of ingredients , so the method will be described for all production lines sausage meat products .

Source: (Ibarra, 2012)

#### 6.1.1. SURVEY PROCESS OF RECEPTION AREA, STORAGE AND READINESS OF RAW MATERIALS

### **6.1.1.2. Reception**

Enter M. P. together with the inputs to the Factory Canned Meats Del Rancho, in cases pre-qualification by the person acquiring the raw material; it can be purchased at the places where they meet the standards of hygiene and health. Responsible for receiving the M. P. verifies that it meets all of the purchase order that is made by a heavy and count all the raw material from entering the plant.

**Source:** (Ibarra, 2012)

### **6.1.1.3. Storage**

After receiving the matter prevails, passes to the storage area where inputs and raw materials are separated, the inputs are stored in the cellar and the raw materials are meat, fat, leather go straight to the freezer.

**Source:** (Ibarra, 2012)

### **6.1.1.4. Enlistment of raw materials**

Within the enlistment process raw materials there are two steps which are:

#### **Classification**

The entered raw material is classified by the head of production, beef, chicken, pork, bacon fat and leather this is done visually and manually.

**Source:** (Ibarra, 2012)

#### **Selection**

Once classified, a selection is made flesh separating meat if found unfit for meat production, which is reported to their respective acquisitions to return. The selection also involves selecting the best meat for production depending on the product to be manufactured and each has different ingredients, not all are made with the same meats.

**Source:** ( Ibarra , 2012)

## CHAPTER VII

### 7. MANAGEMENT SYSTEM DESIGN PROCESS FOR PRODUCTION AREA AND MARKETING OF MEAT AND SAUSAGE FACTORY RANCH

#### PRODUCTION PROCESS

At present the company fully meets the demands of its customers, for this reason, has not seen the need to improve the flow of raw materials during the

production process, for increased production.

In the manufacture of the meat goods Canned Meats Ranch must comply with various activities, which can dramatically influence the productive capacity of the company.

A summary of the tasks involved are shown in the production process, with a detail of their abilities and their times:

TAREA	DETALLE DE LA TAREA	CAPACIDAD	TIEMPO 64 Kg.
1	PREPARACIÓN DE CONDIMENTOS	8 Kg.	15 m.
2	Molienda	15 Kg.	20 m.
3	Cuterizado	64 Kg.	15 m.
4	Lavado de Tripas (Preparación de Envolturas)	64 Kg.	50 m.
5	Embutido	64 Kg.	10 m.
6	Amarrado	64 Kg.	40 m.
7	Ahumado	140 Kg.	35 m.
8	Cocinado	140 Kg.	25 m.
9	Enfriado	140 Kg.	6 m.
10	Secado	300 Kg.	60 m.
11	Recorte y Empacado	64 Kg.	80 m.
12	Almacenado	320 Kg.	15 m.

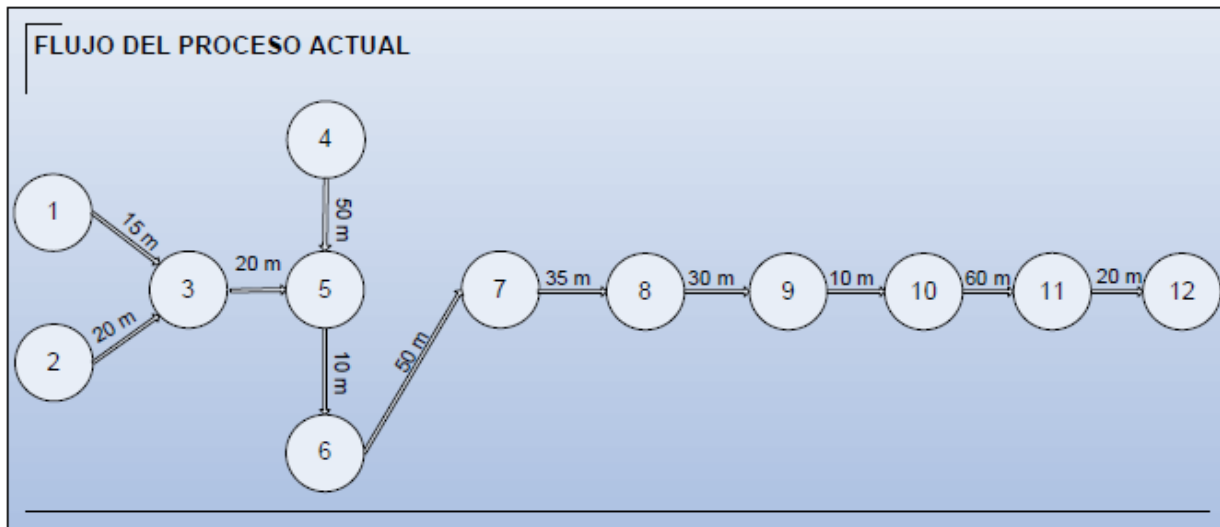
**Prepared:** Mayra Ibarra

Meat and Sausage Company Ranch, acquired almost all their meat raw

materials and boned by allowing you to have better times in ground meat.

The preparation of spices, preparation of the envelope of the moored, trimming and packaging tasks are performed manually by employees without the full use of some machinery required.

The flow of the production process, which shows the time required for each activity are presented in the following network diagram:



**Prepared:** Mayra Ibarra

It is noted that at present a cycle of the production process for 64 Kilograms takes approximately 5 hours 21 minutes, from the raw material enters the production process, even when the finished product is stored. However on a normal working day , every cycle of the production process are performed only until the cooling step , then the product is left in the drying overnight and the next day continues with steps of cut ,

packaging, storage (except on Mondays where the work week starts and therefore no products in process) . The next day the cycle ends with the day before, working together to do all workers (4 employees). Then the production process starts the day after the previous day's production cycle completed.

Saturdays ends with weekly activities, concluding with clipping , packaging and

storage of the finished product on Friday .

The current bottleneck is constituted by the washing steps casings and casing or sausage preparation , tasks currently performed is the same .

In a normal working day Monday to Friday , when income is wings 7H30 am and departure time is at 4:30 pm , it should be mentioned that this time one hour and fifteen minutes are intended for breakfast and lunch staff ( 30 minutes for breakfast and 45 minutes for lunch) .

While the activities of smoking, cooking and cooling of the last cycle of the day, the staff made the cleaning of the plant are made.

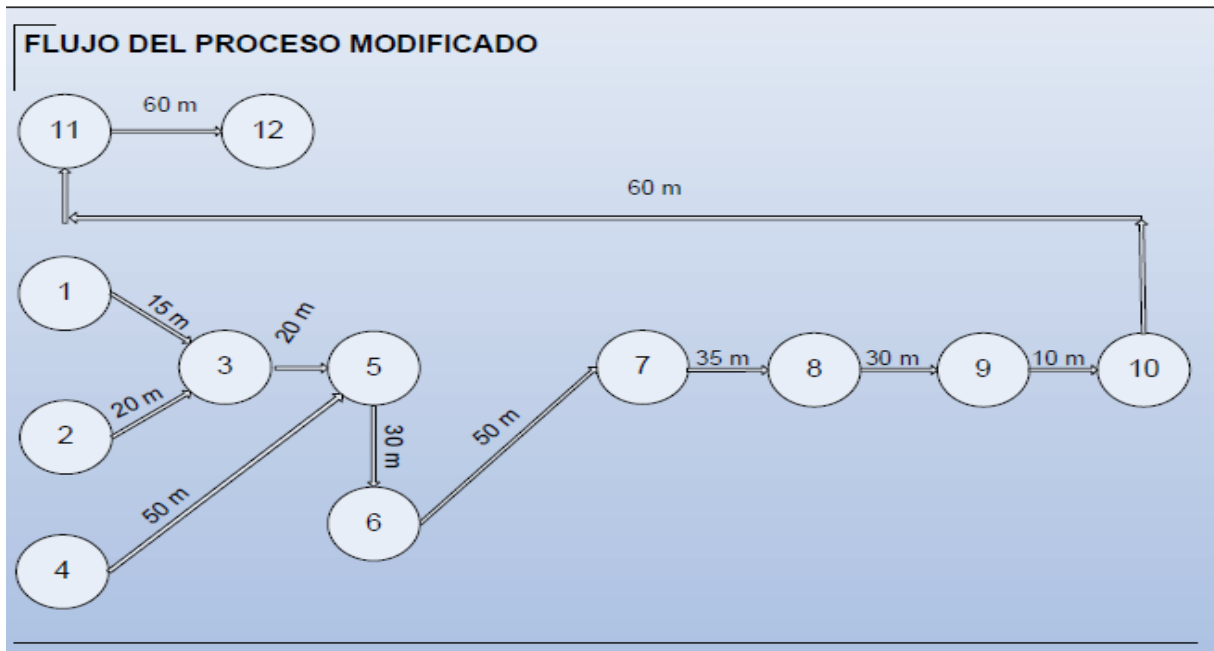
From this it follows that on Monday, you can make up to 5 cycles of production, and from Tuesday to Friday can be made up to 4 cycles during a normal working day of eight hours.

The company is producing 1600 kilograms per week (an average of 320 kilograms per day ) . This indicates that with the current way of working, it has an unused capacity of 125 pounds per week (25 kilograms per day ) . Capacity is used for peak seasons, but for the fulfillment of the business objectives posed in strategic planning, that productive capacity is insufficient.

But with small changes in the process flow could significantly increase production capacity on a normal working day.

### **INCREASED CAPACITY**

For the increase in productive capacity, intends to launch daily activities as well, bringing the first bottleneck in the wash section of casings or casings preparation:



**Prepared:** Mayra Ibarra

To restructure the productive process as proposed, it may take up to 6 cycles of 64 Kg Monday through Friday (384 kilograms per day), ie the production process would start in parallel with the four remaining tasks of the previous day (cut, packaged and storage), setting a new worker, that I make the remaining activities.

wrappings. The instant you begin the production process, allowing stuffer feed immediately, eliminating the bottleneck represented (60 minutes) will be performed. In step inlay work time will be increased to 30 minutes because preparation tasks and the sausage is no longer carried out simultaneously. Productivity calculated with the following formula:

The preparation of casings or

$$\text{Productivity MO} = \text{Kilos} / (\text{Yield MO} * \text{Number of Workers})$$

$$\text{Productivity MO} = \text{Kilos} / (\text{Kilos} / \text{Time} * \text{Number of Workers})$$

$$\text{Productivity} = \text{MO} (320 \text{ Kilos}) / (12.80 \text{ Kilos} / \text{Time} * 12 \text{ Workers})$$

$$\text{Productivity} = \text{MO} (320 \text{ Kilos}) / (12.80 \text{ Kilos} / \text{Time} * 12 \text{ Workers})$$

Productivity MO = 2,083 Time / Worker

The productivity of the current workforce is 2,083 Time / Worker

Enhanced Productivity MO = (320 Kilos ) / (17.80 Kilos / Time \* 12 Workers )

Enhanced Productivity MO = 1.50 Time / Worker

Productivity Enhanced Manpower is 1.50 Time / Worker. To obtain the increase in productivity is done with the following formula:

Increased Productivity = (1 - (Enhanced Productivity) / (Actual Productivity) ) \* 100 %

Increased Productivity = (1 - 1,50 / 2.083) \* 100 %

Increased Productivity = 28 %

Then a 28 % Productivity MO (GMT / Worker) with changes made to the production process was obtained.

Efficiency = ((Achieved Performance ( Enhanced) Kilos / time) / (Standard Performance Kilos / time) ) 100 %

Efficiency = ( (17.80 Kilos / time) / ( 12.80 Kilos / time) ) \* 100 %

% Efficiency = 139,062



We get that with the efficiency achieved by the changes are met with a 139.062 % so we can give more time to other activities of the production process.

## IMPACTS GENERATED PROJECT IMPLEMENTATION

Implementation of Process Management System in the Meat and Sausage Factory Del Rancho, generate positive and negative impacts on the Socio-Economic, Cultural Education, Environmental, Commercial, Business aspects, so it is essential to identify and assess these impacts to minimize the counterproductive and maximize profits, thus achieving development project actions. For the interpretation is rated on a scale of 0-3 with negative and positive values, the measurement is performed based on a weighted average to get a rough interpretation.

PUNTAJE	SIGNIFICADO
-3	Impacto alto negativo
-2	Impacto medio negativo
-1	Impacto bajo negativo
0	No hay impacto
1	Impacto bajo positivo
2	Impacto medio positivo
3	Impacto alto positivo

## Socio-Economic Impact

INDICADORES	NIVEL DE IMPACTO						
	-3	-2	-1	0	1	2	3
Optimización de Recursos.						X	
Generación de fuentes de empleo						X	
Aumento de la producción.							X
Ampliación de la microempresa.						X	
Mejorar el Nivel de Vida.						X	
Alternativas de Inversión						X	
<b>TOTAL</b>	-	-	-	-	-	10	3

$$\text{Impact level} = \Sigma / \text{Indicator}$$

$$\text{Impact level} = 10/6 = 2.17 = 2$$

Socioeconomic level of positive half =  
Impact

The Socio-Economic Impact on the environment is positive level, so be very satisfactory as it will generate income sources of employment and economic stability for the people participating in the project. Besides the integration of quality requirements will result in products optimize processes and customer satisfactory levels, ensuring good long-term business relationships causing favorable micro economic performance.

## Cultural-Educational Impact

INDICADORES	NIVEL DE IMPACTO						
	-3	-2	-1	0	1	2	3
Capacitación al personal							X
Intercambio de experiencias.						X	
Cultura de Consumo						X	
Atención al Cliente						X	
<b>TOTAL</b>	-	-	-	-	-	6	3

$$\text{Impact level} = \Sigma / \text{Indicator}$$

$$\text{Impact level} = 9/4 = 2.25 = 2$$

Impact Level Cultural-Educational =  
medium positive

The percentage of matrix-Cultural Education Impact is positive means which will contribute to the direct benefit of the project participants, as this system requires the commitment and participation of them motivated teamwork and the definition of their responsibilities by providing a appropriate work environment enabling personal growth and improving their skills.

In addition to creating a culture of consumption, raising awareness to consumers that the products it sells

micro features to ensure quality and guarantee your satisfaction achieved thus achieve acceptance in the market.

## Environmental Impact

INDICADORES	NIVEL DE IMPACTO						
	-3	-2	-1	0	1	2	3
Protección del medio ambiente					X		
Deforestación		X					
Contaminación del Aire			X				
Contaminación por Ruido			X				
Contaminación del Agua			X				
<b>TOTAL</b>	-	-2	-3	-	1	-	-

$$\text{Impact level} = \Sigma / \text{Indicator}$$

$$\text{Impact Level} = (-4) / 5 = -0.8 = -1$$

Level = Low Negative Environmental  
Impact

It manufactures the Rancho Meat and Sausages naturally generates air pollution especially through the expulsion of smoke generated in the process furnaces of smoked sausages and processed meat daily noise by the use of the mills and meat slicers and less impact on the water for cleanup actions performed in the work areas. However, the impact that the factory is under negative which necessarily implies the need for mitigation measures

that will reduce or eliminate the negative effects affecting the natural environment.

### Commercial-Business Impact

INDICADORES	NIVEL DE IMPACTO						
	-3	-2	-1	0	1	2	3
Captaciones de Clientes							X
Competencia y expansión en el mercado.							X
Mejora de las funciones y procesos						X	
Ambiente productivo y controlado						X	
<b>TOTAL</b>	-	-	-	-	-	4	6

$$\text{Impact level} = \Sigma / \text{Indicator}$$

$$\text{Impact Level} = 10/4 = 2.5 = 3$$

Level Commercial- Business Impact =  
High Positive

The Commercial- Business Impact reflects a high positive level as the System Implementation Process Management, processes, functions, controls, monitoring and measuring compliance with quality objectives are achieved, in relation to the competitiveness strengthen this parameter through the quality of meat and sausage products , plus production processes and marketing improve what the factory carry quality is a productive,

efficient environment that is what is sought in this project.

### CONCLUSIONS

In conclusion of this project, the following are mentioned:

- The diagnosis made, it could recognize duplicates and repetitive processes, the lack of an organizational structure, lack of process, lack of a good organizational communication and lack of activities in which the staff is involved in the processes.
- In the diagnostic phase of the company were able to identify the factory meats and sausages from Rancho possessed a clear strategic direction that would allow development activities to achieve the mission, vision and strategic objectives of the Fabrica Del Rancho.
- Meat and Sausages it manufactures the Rancho has no proper organization in the production chain so no conducting assessment and internal quality control in

production processes making it difficult play its manufacturing operations and marketing their meat and use their resources.

- In the it manufactures the Rancho no adequate accounting procedures for the production, so it does not let you know the manufacturing costs incurred in the manufacture of various meat products produced for the market.
- it manufactures no support promotion and advertising so does not have wide recognition in the market, the only means of advertising available to its customers is that thanks to the satisfaction of care and products that offer.

## **RECOMMENDATIONS**

In order to optimize the management of the factory Rancho Del Canned Meats and once the project on the design of a management system for consolidated proceedings, the following recommendations are made:

- The Board and management must use the manual process as a tool to establish a more formal structure so that an effective

response to the new requirements is achieved. Set total commitment by the management of the company with the purpose to implement the proposed improvements in key processes because the hierarchical level Management is the cornerstone to establish any kind of change in both individual and collective benefit of the company.

- It is essential to establish policies for carrying out the processes so that the lines of action for the operational and administrative staff to serve as a complement to the effective development of each process and thread is determined.
- It is convenient to timely implement the Process Management System developed proposal, in order to get expected results as decreased activities that do not generate added value.
- It should form a team of people constantly working on the business processes and is responsible for implementing, monitoring, evaluating and improving them. Perform a feedback process, by which it shall fix errors as they arise. Use this research to the entire company as a guide, to plate the organization and direct their implementation processes to all areas.

- Conduct training of improvements to be made indicating the advantages and clear objectives with actions to be taken, this will allow more efficient processes. Manage records by department heads, in order to better control the cause and effect processes, since records starting point to determine future improvements.

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