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Accounting Aspects Of The Distribution And Location Of An Industrial Dressing Plant Under Current Colombian Legislation

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Abstract

The location of the plant after having carried out an evaluation of factors for both macro and micro location, will be in the municipality of Los Patios, since according to the analysis carried out it is a place with a very good industrial projection and has a good road infrastructure that connects it with the main markets of the department, it is important to highlight that the difficult sanitary situation at world level (COVID 19), limited the obtaining of first information and the development of the field work, the latter essential in the decision making of the project. However, with the support of bibliographic sources and projects already carried out, it was possible to trace a favorable path for the needs of the research. In the following research, the creation of a tomato sauce production plant is proposed, for which a series of location studies were carried out, which are focused on determining the most favorable place for the plant, after which a series of analyses of factors that in one way or another can affect or influence the performance of the plant in the future were carried out. It is important to highlight that the raw material in this proposal will be obtained by a hydroponic cultivation method, which is oriented to the optimization of resources and the increase of production.

Keywords: competitor; design; design; location; assembly; organization

1. Introduction

The conservation of tangible and intangible resources (capital, raw materials, time, etc.), is one of the greatest challenges for CPAs today, due to the fact that consumers have more demanding needs and in which the cost-benefit must be the best. If we add to this the easy access to information that each of the

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participants of the economic cycle have, it generates a more challenging situation than what can be foreseen initially. Taking into account this situation and the regional problems present, there is an opportunity to propose alternatives for the creation of companies in the region, which are adapted to the above mentioned, in addition to this, it is sought to innovate processes and products, generating a differentiating value in front of the competition, according to (Chiavaneto, 2008). "Organizations must be internally prepared to solve any impact or need that may arise, generating administrative and commercial strategies".

Colombia is one of the countries with the largest amount of resources (water, land and minerals) that, due to lack of information, inappropriate use of land and planting of illicit crops have been squandered indiscriminately, generating negative impacts in the region, from this the challenge as professionals is greater, since the inventiveness and approach to solutions must be efficient. For many, one of the solutions to these facts is the creation of industry or companies, since it is considered that generating employment can mitigate some negative social, economic and environmental impacts, since these facts are so inopportune for the economic development of the region and the capital city.

Companies are a fundamental boom for the society, thanks to them the development, economic growth and quality of life of the inhabitants are visualized, there are different types of companies in the region, but they are not enough for the needs of the people. According to the above, the present research houses the design of a proposal for the location and distribution of a tomato sauce plant, which seeks to be a focus of innovation and economic development in the region, in addition to the proper use of available resources, implementing the best techniques and tools currently available, an added value that the project has is the implementation of an organic growing environment, 100% friendly to the environment and the health of consumers. The importance of this research at the industrial and accounting level is the search, identification and contribution of data that can be used for further studies, related to the installation and distribution of a food plant in the country, in addition to this, the initiative is formulated to make the company a leader and pioneer in the production of this product in the department, helping the business development that the sector needs so much, because it has been delayed by different political and economic aspects.

The activation of the economy and the generation of employment are the main contributions obtained through this research, in addition to well-organized companies in their design and distribution that streamline the processes and increase the productivity of the products, as well as a new model for obtaining raw materials that seeks to optimize resources and, more than that, to safeguard the environmental status of the region.

2. Article structure

2.1 Production process of Salsa del oriente.

The production system of the company revolves around the self-sufficiency of raw materials, which will be characterized by being as organic as possible, in order to have a production of products 100% friendly to the environment and the health of consumers. Without leaving aside the social commitment with the region, projecting itself as a source of support for the economic development of the industrial sector. The company will be structured with large facilities, which will be projected to future expansions, as well as hydroponic greenhouses which will be a source of raw material supply and self-sustainability for the organization. The company's flagship products will be tomato sauce packaged in two presentations, one of 1000 g and the other of 350 g.

2.2 General aspects of hydroponic crops and the food industry in the country and the region.

As evidenced below According to (Giménez, 2018),Hydroponics, is a set of techniques that allows the cultivation of plants in a soil-free environment. Hydroponics allows in simple or complex structures to produce mainly herbaceous plants taking advantage of sites or areas such as rooftops, infertile soils, rough terrain, heated or unheated greenhouses, etc. This method allows an optimization of resources and

a reduction of production times. Despite all these benefits, the lack of knowledge of this technique has allowed it not to be the most implemented cultivation method in the country and much less in the region, (Sandoval, 2016) states that, "Colombia is a privileged country due to its geographical location, cultural variety, diverse climates, flora, fauna, hydrographic basins and natural resources. Such strengths have made Colombian agriculture a source of income for a part of its inhabitants.".

For the year 2018, Colombian agriculture contributed 6.3% of the country's economic income, i.e. an approximate of 6,277 Million Ds, according to data offered by (mundial, 2018), the contributions have decreased over the years since the economic opportunities of farmers have been diminished by a series of factors unrelated to their production, climate changes, forced displacement, scarce resources, etc. Norte de Santander is a department located in the northeastern region, which is made up of departments such as (Boyacá, Arauca and Santander). For the beginning of the III quarter of 2019 the BER (Regional Economic Bulletin) offered by (República, 2019), offered relevant data of the economic of this region, the agricultural sector had a good performance, improving the percentages compared to the previous year. The (DANE, 2019) states that, "The volume of food entered to the main supply centers of the region during the third quarter of 2019 grew 5.4% in annual terms, the highest variation of the year, interrupting the deceleration observed since mid-2018."

Table 1. Variation in food supply by city and wholesale market Year 2019.

Variation in food supply by city and wholesale market				
City	**Wholesale Market**	**June (tons)**	**July (tons)**	**August (tons)**
Armenia	Mercar	8.954	9.509	6,2
Barranquilla	Barranquillita	22.824	26.269	15,09
Barranquilla	Granabastos	8.467	9.882	16,72
Bogotá, D. C.	Corabastos	182.523	190.212	4,21
Bogotá, D. C.	Paloquemao	5.247	6.145	17,11
Bogotá, D. C.	Plaza Las Flores	4.584	4.556	-0,62
Bogotá, D. C.	Samper Mendoza Square			
		2.296	2.394	4,25
Bucaramanga	Centroabastos	36.727	42.666	16,17
Cali	Cavasa	21.069	24.308	15,37
Cali	St. Helena	18.821	21.047	11,83
Cartagena	Bazurto	11.913	15.859	33,12
Cúcuta	Cenabastos	18.630	20.706	11,14
Cúcuta	La Nueva Sexta	999	1.664	66,51
Ibagué	Plaza La 21	2.676	3.072	14,78
Ipiales	Collection center	5.426	5.395	-0,57
Manizales	Galleries Center	4.285	4.477	4,49
Medellín Central Wholesale 64,326				
of Antioquia			69.785	8,49
Medellín Plaza Retailer 16,928				
José María Villa			15.239	-9,98
Montería Mercado del Sur 2,619			3.497	33,5

Source: (DANE;2019)

The (DANE, 2019), also provides us with an important data of the northeastern region in terms of industry and is that the industry of Santander presented an increase of 8.2%, much of this increase in production is related to beverages and food products, this data is intrinsically related to the activities of Norte de Santander, since the closest competitor is Santander, and in the particular case of the company,

the competition is a few kilometers away. This should be taken into account in view of the future opening of markets and obtaining new potential clients.

2.2.1 Economic performance of the sector. Cúcuta is the central axis of the most important economic activities in the region, being the center of collection and distribution of most of the goods with the different national markets. The metropolitan area of the city is home to a large percentage of the native population, who see commerce, mostly governed by informality, as a profitable source of economic and family support. This is why there is little industrial presence in the sector.

To enter more in context it is important to note that the leading companies are the construction and mining, these during the last years have been the great standard bearers of economic development in the region, due to the existence of minerals and land with attractive features either in clays, coal, or highly commercial properties and uncommon in other regions. In part this favors the economy of the department, since there is a source of legal employment and exchange of goods, however, this year (2020), it has been possible to evidence according to data offered by the (DANE, 2019), the mining sector in the region presented a decrease of 54% of its production, due to the almost 42 days of armed strike and other factors, bringing massive layoffs and increased informality in the city and its metropolitan area. Currently, there are companies in the food sector that are leaders in the region, but they are not enough to reduce the unemployment and informality rate in the department; there is no large manufacturing plant in Cúcuta and its metropolitan area focused on the production of tomato sauces.

The industrial backwardness in the region is mostly due to the lack of interest in promoting industrial strengthening policies that facilitate and contribute to the creation of new production companies that generate employment for the population. According to the Annual Manufacturing Survey (EAM), published on December 06, 2019 by the (DANE, 2019), releases figures on industrial production in the sector, in the creation of food products yielded 5.1% in which 10.9% is occupied in labor, these are low figures that should be taken into account to take actions on these. Tomatoes also stand out as the second most transitory product in the region for human consumption, with a percentage of 17.9%. In addition to this, the manufacturing industry of Norte de Santander, including the food sector, has a GDP of 5.6% as of March 27, 2020. It is important to add that the economic growth for the department in manufacturing industries has registered a growth of 3.4%. As mentioned above, the economy generated by the food industry in Norte de Santander would be an important alternative to accelerate the economic growth of the sector and therefore provide benefits in terms of employment and development to the inhabitants of the region, since there is no good tomato sauce manufacturing plant in the department.

2.2.2 Export opportunities. The Nortesantandereana industry has represented an increase in terms of exports, of different products, this is a point in favor, since the interest in products made in the domestic market has good perception in other parts of the world, on the other hand; According to figures given by him (DANE, 2019). Exports at the national level have increased by 32.4% between 2018 and 2019 and the trend as of March 02, 2020 shows that it is increasing; It is worth noting that the products with the highest increase are mining-energy products. The new plant being a company that ventures into the manufacture of sauces and despite the small number of companies engaged in this economic activity in the region, makes it impossible to obtain updated data on the export of this type of goods, however it is important to note that the export of Tomatoes can be an initial alternative parallel to the interests of the company, all this in the regional context.

If we were to take the country as a central axis of analysis, we can orient ourselves by the activities employed by Fruco, one of the leading brands of the organization Unilever Colombia SCC SAS (Nit: 900677748), which carried out exports for 2019 for a value of 18, 477,099 million pesos, data obtained by a report of (Veritrade, 2019).

(Chavez, 2019), marketing director of Unilever Colombia, in an interview conducted by dinero magazine in May 2018, stated that In the country almost a kilo of tomato sauce is consumed per month, on average, per household, and in the last year the market has grown 1.6%.Consumers are stopping consuming foods high in fat, sugar, sodium, with gluten or other ingredients that they consider unhealthy

or unnatural, and change them for a balanced diet. This is why with Fruco we have taken care of strengthening our light and low-calorie lines, said the executive in the interview.

2.2.3 Raw material and input suppliers. In any manufacturing or production process, the identification of suppliers of both inputs and raw materials favors the optimization of resources and production times, which is why for this new production sauce it is necessary to identify all these external agents that in one way or another have an impact on the production process. "Suppliers are the center of activities and processes of most companies" said Peter Smith at the time, for the OFS portal, it is important to note that the company wanting to be self-sufficient, ie itself produce or grow the raw material (tomatoes), will not have the problem on this side, however to implement the hydroponic cultivation will require a certain amount of inputs (minerals) needed for the preparation of the aqueous solution, which is the backbone of the hydroponic process.

However, it is necessary to include in these aspects those suppliers of greenhouse construction materials, since they are the backbone of the production of raw materials, plastics and other tools related to the design and distribution of the plant, since it is part of the company's action plan to know all these aspects. Without leaving aside those companies that provide essential services for the operation of the company.

It should be clarified that the needs of the new plant are very broad; therefore, the evaluation of suppliers will be carried out in a general way, the suppliers that can meet the production needs are the following.

2.3 Description of the production process.

The process of obtaining tomato sauce is a simple process, but it requires a series of care and analysis in each of its stages, which is why the care and machinery implemented work with state-of-the-art technology. It must be taken into account that the tomatoes used in this type of production must have very little seed content, this is achieved with grafted or genetically improved seeds.

According to (Garizao, 2018), the most relevant phases of the process are the following.

2.3.1 Selection and procurement of raw material. The tomatoes come mainly from farms, organically grown and growers endorsed by the corresponding organism. It is very important that the tomatoes selected for bottling (cutting) have the right shape, color and size, but even more important are the characteristics related to their intrinsic quality such as acidity, sugar content and dry matter. For this reason, the types of tomatoes most commonly used to make sauce are pear tomatoes and salad tomatoes, because they have less water inside and are better used.

2.3.2 Pre-washing and analysis of PH, sugars and lycopene. After extracting the raw material and taking it to the production center, a small amount of washing is applied, usually with chlorine-free and reused water. In this process, qualitative and quantitative properties are also measured in small batches of tomatoes.

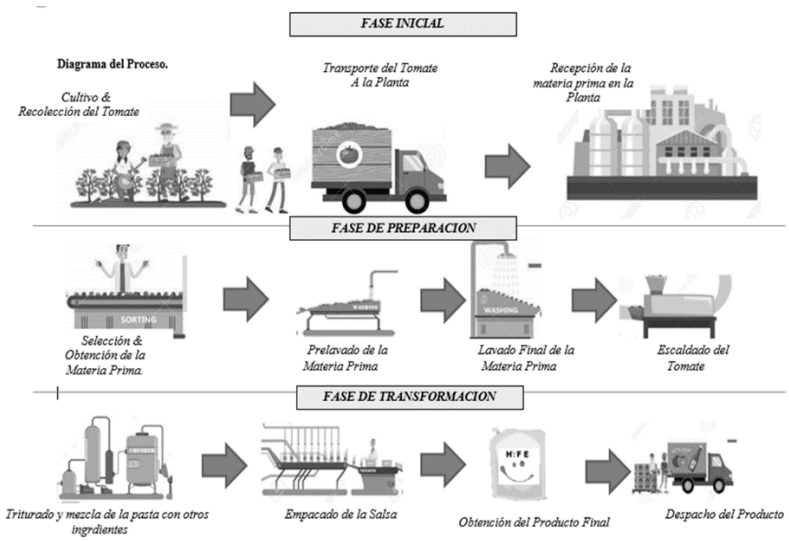
2.3.3 Final washing of tomatoes. Once the tomatoes have been freed from the residues obtained in the cutting process and their analysis, they are subjected to a final washing where only those that have passed the different tests are washed; at this stage of the process the water does not contain chlorine and is used for the first time.

2.3.4 *Tomato blanching and peeling*. In this stage of the process, the tomatoes are subjected to a thermo-physical peeling phase, in which the tomato skin is loosened with steam and then passed through a toothed wheel that removes the skin.

2.3.5 Tomato crushing and mixing with other ingredients. Once the concentrated pulp is obtained, it is boiled for a few minutes with the other components of the sauce (the time necessary for them to mix), avoiding loss of flavor, since the oils from the spices and the acetic acid from the vinegar do not evaporate. The other components of the sauce that mix with the pulp are prepared in this way:

Pour the vinegar into a tank, add the spices and bring to a slow boil. The extraction of the vinegar with the spices is maintained for about 2½ hours, adding sugar and salt almost at the end, mixing everything very well. The vinegar extract is filtered or decanted and added to the tomato pulp. When the pulp is prepared in the same factory, a little before finishing the concentration, the vinegar extract is poured and the paprika and the vegetables are added, it is given a quick cooking and the finished sauce is discharged.

Figure 1. Graphic diagram of the process



Source: (Solís, D & Rivera, F; 2020).

3.Method

The methodology used in the development of the research was practical - descriptive. "Descriptive research comprises the description, recording, analysis and interpretation of the actual nature and composition of the phenomena; descriptive research works on factual realities, and its fundamental characteristic is to present us with a correct interpretation". (tamayo, 2004).

In this same sequence of ideas, a series of practical activities are proposed, which seek to obtain first-hand information, that is to say, information obtained by direct observation and information from people knowledgeable about the subject (teachers, graduates). For this reason, much of the information for the analysis and direction of the project was obtained through field work; however, bibliographic information will also be extracted, which will facilitate the retention of certain theoretical concepts.

4. Results

Through the design proposal and plant layout of the new factory to be located in the Department of Norte de Santander and which is proposed with the aim of contributing to the creation of business and the participation of entrepreneurs to encourage the growth of the economy of the region, three alternatives for the location will be analyzed through the geographical areas of the region, which are Cúcuta, Los Patios and Villa del Rosario, these being the capital and municipalities of the metropolitan area. The macro location was accompanied by the determination of the most important location factors, which can directly or indirectly influence the choice of the appropriate sector to develop the economic activity. In this case, a weight of interest was used, which was valued as a percentage of one to one hundred, multiplied by a consideration factor of one to ten. When the factors of interest were added together, the result was the most appropriate municipality or zone for the needs of the plant, all according to the subjective evaluation of the analysts, who, in this case, are the authors of the research.

Classification of the factors into essential and trivial. The following factors were taken into account for the development of these processes.

Market - proximity to customers. Knowing the delivery time and distances to customers is one of the most important factors when you want to locate a new plant, which creates the need to study very well the location of the new plant, which ensures an approach to people and that these in turn can know what is offered. In this case, having location options between a capital city and municipalities of its metropolitan area, it is expected that the product offered will enter more quickly to the knowledge of the people who will become the next customers. Once located, it will be decided to start looking for those potential customers and generate a large market volume. A factor that is essential because it is intended through this to have more contact with customers.

Labor. This is one of the factors that will be given more attention in the creation of the company, since it is intended to reduce the negative indicators of unemployment in the region, in addition to promoting the economic development of the region, and also with the choice of personnel residing in the region, it seeks to generate a good competence and development of the practical components of the professionals in the region.

Suppliers. The plant must have a constant supply, which is why the suppliers factor is essential for the development of the idea, by having a self-sufficient process, i.e. greenhouses for growing their own raw material, in addition to which inputs such as ingredients for the sauce extract, packaging, boxes, among others, are essential. We will look for nearby suppliers in order to have an efficient delivery time and that they arrive with times that benefit the production of tomato sauce.

Electric power. This resource can be considered as an essential factor, since machinery that requires the supply of electrical energy is required.
CENS public service to have a good performance and availability of the service.

Water. Water is an indispensable resource for our activities and is of vital importance because during the whole stage from the cultivation of tomatoes to the preparation and mixing of the paste. It is an essential factor for the operation of the plant. This factor seeks to be optimized in the best way, making sure that water is reused and if possible treated to offer other alternatives in the region.

Sewage. As it is a food industry, the waste obtained during the process must be handled very well, and forms of supply and drainage are needed to carry out the activities well within the plant. Although it is important, it can be considered trivial since it is not affecting the production of the sauce as such, although it must be taken into account that thanks to the sewerage system we are supplied with water.

Housekeeping. The process does not involve so much waste, and maximum use is made of the resources available. A waste plan must be managed to avoid contamination, even if it is organic waste, and it must be considered an important factor, but as something trivial.

Transportation. Time is an important resource in companies; thanks to transportation, many interested parties can be benefited. For this reason, a good transportation scheme that benefits the company and its environment is considered an essential factor in order for raw materials to arrive on time and for there to be dispatches for the demand to be on time.

Communications. In this case, two types of communication could be considered, one is that which the company must maintain with the environment to acquire resources at any time either through access routes and proximity to its suppliers. Another type of communication consists of the way in which the plant would establish contact with its customers, where factors such as advertising, social networks, among others, are considered. Although this second type of communication would be more in line with the proximity to customers. In communication of either type, there is something in common and it is how the plant maintains contact with any external factor, this is important and is considered a trivial factor because it is not of great relevance for the implementation of the proposed design and layout of the plant.

Quality in the livelihoods of the community. The plant manufactures and distributes tomato sauces; it is a second necessity product in the family basket and would mainly be consumed by any social stratum, regardless of the economic level or quality of life of the community.

In Cúcuta and the metropolitan area people mostly survive on trade and self-employment, which is why the final product will be offered more economically and affordably, since as creators of the project and next industrial engineers what we are looking for is to meet the needs of the population and create solutions that serve for the industrial development of the region. Therefore, it is considered a trivial factor, because its weight in the development of the project is low.

Environmental regulations. All manufacturing companies, regardless of their raison d'être, must strengthen their systems and the environmental issue is one of these, it is important to have the necessary regulations to work in favor of the company and the environment so it is considered an essential factor. Being this factor the central axis of the company's production policies, since these will revolve around the preservation of resources and decrease the use of chemicals or products that pollute the water.

The above factors are located in a more organized way in a table to make their understanding and identification easier.

Table 2. Essential and Trivial Factors

Factors	Essentials	Trivia	Motive
Market-Proximity to customers	**x**		Location and proximity to customers.
Labor	**x**		Personnel required.
Suppliers	**x**		Supply of inputs.
Electric power		**x**	Necessary for machinery.
Water	**x**		Necessary for production.
Sewer		**x**	It does not directly affect production.
Cleanliness		**x**	It is indispensable but does not generate as much harmful waste.
Transportation	**x**		It is favorable in the production and dispatch of products.
Communications		**x**	It allows to know external information.
Quality of the community's means of life		**x**	It does not affect the family basket of basic necessities.
Environmental regulations	**x**		Required to work for the environment.
Free trade zones		**x**	The market is very open.
Business climate	**x**		It is necessary to create a great business climate.
Fiscal aspects		**x**	They are needed to maintain the project.

Source: Own elaboration

Selected alternative regions. The selection of each area was the result of a qualitative and quantitative analysis of all the sectors of the region, of which the selected alternatives were Cúcuta, Los Patios and Villa del Rosario, these places were chosen since Cúcuta is the capital of the department and the two municipalities are of the metropolitan area and in one way or another are the municipalities that generate more activation of the economy. The classification and evaluation of macro location factors. These factors

They were essential for the location of the facilities, since the optimal location was sought among the 3 alternatives (Cúcuta, Los Patios and Villa del Rosario), the one that best suits the needs of the organization, facilitating decision making. Each of the locations was subjected to a thorough analysis, giving a numerical value to each selected factor, with the optimal location being the one that obtained the best final score. The data table format was taken from the book by (Muther, 1990) and the selection of essential and trivial factors was at the authors' discretion.

Table 3. Evaluation Analyst 1

Analyst Name	**Marvin Davila**					**Date: 2020**
Factors	**Weight**	**Alternative Location**				
	%	**Cúcuta**		**Los Patios**		**Villa Del Rosario**
Market - Customer Proximity			0.9		1,05	5	0,75
Labor			1,35		1,35		1,05
Suppliers			0,54		0,63	5	0,45
Electric Power			0,56		0,72		0,48
Water			1,2		1,35	5	0,75
Sewer			0,24		0,24	5	0,15
Cleanliness			0,24		0,24		0,18
Transportation	5		0,35		0,4	5	0,25
Communications			0,16		0,16		0,08
Quality In Community Livelihoods			0,8		0,8		0,6
Environmental Regulations			0,21		0,21		0,21
Free Trade Zones	5	5	0,25		0,45		0,40
Business Climate	5		0,4		0,4		0,4
Fiscal Aspects		5	0,1		0,12	5	0,1
Total			7,3		8,12		5,85

Source: Own elaboration

After observing the data obtained, it was determined that the new Salsa del Oriente production plant should be located in the municipality of Los Patios. Since it is the most favorable location both for the commercialization of the product and the municipal development that it presents, a priori it will be one of the most industrialized municipalities in the region, this location is also chosen because it is the one that offers the best business climate, since competition is scarce. Another factor that had a significant impact on the choice of this area is the proximity of the municipality to other cities and its easy access to national and intermunicipal roads, which is a variable that guarantees the delivery and sale of the product, as well as easy access to inputs and raw materials. Without further ado, we proceed to conduct a micro-location study to identify possible lots for the location of the production plant in the municipality.

5. Discussion

Once the sector where the plant will be located is known, we proceeded to search for lots that meet some basic characteristics both in terms of size and access to the main roads in the country. The selected lots were grouped in a format, in which images, price, name of the company that sells it, value, etc. can be evidenced.

The dimensions of the lot are taken after having designed a sketch of the company's plan, taking into account the volume of machinery and facilities necessary for production, which is why the lots must have a minimum area of 9000 m2 or 9 hectares. However, safeguarding future expansions, the lot to be acquired must have a larger dimension, all this to ensure future adjustments in an increase in production or market expansion.

Evaluation by factors of micro location of the plant. This evaluation was carried out by scoring the factors of each lot, since after locating and knowing each lot with its respective advantages and disadvantages, it is not enough to make a decision. This evaluation was carried out through the use of Word format, and was performed by each of the analysts, these formats are shown below.

Table 4. Micro location evaluation analyst 1

Analyst Name	Author 1				Date: 2020	
Factors	Weight	Alternative Location				
	%	Lot 1 Xxx		Lot 2 Xxx		Lot 3 Xxx
Transportation		0,91	5	0,65		0,91
Premises Size		0,84		0,96		0,84
proximity to the commercial sector		1,2		0,9		1,05
Socioeconomic Stratum	5%	0,3	5	0,25		0,3
proximity to the urban core		1,6		1,2		1,4
Cost of Services		1,4		1,4		1,4
Lot Cost		1,05		1,05		1,05
Total		7,31		6,41		6,96

Source: Own elaboration

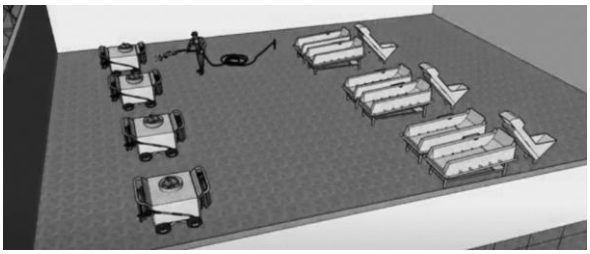
Due to the fact that the micro location study determined that lot 1, located in the San Pedro sector, is the most accepted by the analysts, it is recommended that this lot be the place where the plant will start operations and on which the distribution of the plant will be made. One of the factors that most influenced the choice of this lot was not so much the cost of the land, but the proximity of the lot to an intermunicipal and national road connection, in addition to this of all the lots, it was the one that needed the least machinery, since it had very good land characteristics such as its fullness and shape. However, a factor that caused a stir was transportation, since there is only one bus route for this area, so it is suggested that the company's workers live nearby or have their own means of transportation.

6. Conclusions

For the plant layout, both productive and logistical factors were analyzed, starting with a description of the production process, machinery, inputs and raw materials required to produce tomato sauce. This is

why the following is a description of the production process (Garizao, 2018), the most relevant phases of the process are the following. Selection and procurement of raw material. Tomatoes come mainly from farms, organically grown and farmers endorsed by the corresponding organism. It is very important that the tomatoes selected for bottling (cutting) have the right shape, color and size, but even more important are the characteristics related to their intrinsic quality such as acidity, sugar content and dry matter. For this reason, the types of tomatoes most commonly used to make sauce are pear tomatoes and salad tomatoes, because they have less water inside and are better utilized. In the design of the tomato sauce production plant, spaces were adapted in which employees and machines are as close as possible, all in order to avoid gaps, the plans were designed for direct, indirect and aspiring employees, for the latter a space for training and introduction to the processes when they are hired was enabled, as evidenced below, this image was taken from the 3D plan of the plant.

Figure 2. Flow of materials and process



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