

# Comprehensive management model for MSMEs in the agricultural sector of the department of Quindío Colombia

*Modelo de gestión integral para las Mipymes del sector Agropecuario del departamento del Quindío Colombia*

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## Abstract

Administrative and financial management is an important tool in business performance, for this reason it is essential to propose strategies, objectives and tactics that allow the promotion of a competitive culture for companies. In this sense, this article is the product of an investigation that was carried out in relation to the above mentioned field and in order to propose a management model for MSMEs in the agricultural sector of the Department of Quindío. The research method is descriptive, with a mixed approach, the sample involved 73 companies in the sector to which an instrument evaluated by expert judgment was applied. The results made it possible to propose a comprehensive management model that would facilitate organizational work, help its sustainability, growth and competitiveness in the market. The most relevant aspects of this research effort are presented below.

**Keywords:** Integrated management model; Administrative and financial process; Agricultural sector.

## Resumen

La gestión administrativa y financiera es una herramienta importante en el desempeño empresarial, por tal razón es fundamental proponer estrategias, objetivos y tácticas que permitan el fomento de la cultura competitiva para las empresas. En tal sentido, el presente artículo es el producto de una investigación que se realizó en relación con el ámbito antes mencionado y con el fin de proponer un modelo de gestión para las Mipymes del sector agropecuario del departamento del Quindío. El método de investigación es descriptivo, con enfoque mixto, en la muestra participaron 73 empresas del sector a las que se le aplicó un instrumento evaluado por juicio de expertos. Los resultados permitieron proponer un modelo de gestión integral que permita facilitar el quehacer organizacional, ayudar a su sostenibilidad, crecimiento y competitividad en el mercado. A continuación, se presentan los aspectos más relevantes de este esfuerzo investigativo.

**Palabras clave:** Modelo de Gestión integral; Proceso administrativo y financiero; Sector agropecuario.

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## Introduction

The agricultural sector in Colombia showed growth in the last year, this is how the National Administrative Department of Statistics Dane highlighted the growth of agro by 2.6% in the last quarter of 2019, mainly generated by agricultural crops, which grew 3.4%. MinAgricultura, (2019); therefore, the agricultural sector promises a potential panorama in the productive development of the country.

On the other hand, in Colombia are considered to be micro, small and medium-sized those that the plant personnel does not exceed 10 workers for the micros, for the small business between 11 and 50 employees, total assets increased to 501 and under 5.001 current minimum legal monthly wages, it is important to note that the MSMEs in the last ten years the national and international level have been the focus of attention mainly due to its capacity of employment generation, as well as to the paramount role they play as contributors to the economic improvement of the regions, however, a significant number of enterprises MSMEs end up weakening in the market, and closing later.

With regard to, the economic activity of MSMEs in the agricultural sector has been a topic of interest of many researchers at national and international level which demonstrates the importance of this sector and its influence on the way of managing the companies that comprise them.

In this regard, at the international level Garcia, (2017 pg.593) stresses that micro-businesses in this sector "need to recognize that they need special attention in all aspects, that is, they require multidisciplinary support that contributes to their permanence and growth in the world, because these companies are the basis for human existence". (pg.17).

He also points out some difficulties that this type of Company presents such as low skills, little staff, problems in marketing, transport, storage, and organization for the production of their products. Similarly, at the national level, MSMEs in the sector have taken on great importance in some studies, in this regard, Mora (2014, pg. 97) points out that in these companies.

*Management has not been sufficiently addressed in the academic field, which raises a series of concerns and reflections that can be taken up in other studies to advance, if desired, in the construction of own administrative models that account for the particular reality of companies in the Colombian Agricultural sector. Mora (2014, pg. 97)*

He also points out that companies do not carry out production planning, lack of knowledge regarding action plans, limited medium-and long-term planning and lack of organization in accounting, within business activities. In the same way, these statements are consistent with Perlacios, Astete, & Sotelo, (2019), who argue that from a management model, the farmers of MSMEs producing pecans in Ica, Peru; they can adopt good practices, using indicators and procedures proposed to have a control of the logistics process; and Carrillo, Noguera, Deivi, & Garzon, (2019) those who recognize the need for the administrative management and management of the professional associations to the deficiency in the guidelines organizational that define the future of the same.

On the other hand, regarding the management model, Ariza and Betancourt (2011), define it as a theoretical scheme, usually in mathematical form, of a system or a complex reality, which is elaborated to facilitate its understanding and the study of its behavior. In this order of ideas, Molins (1998) defines a management model as: "the guide that directs the operation of the systems that make up companies or organizations, seeking the effectiveness and efficiency of these, through the planning of functions performed by the staff of a Department, unit or management". Similarly, for Grecco, J. (2013,), a management model should focus on three fundamental pillars in organizations: "processes, people and technology", underpinned by four practices, "culture, structure, performance and execution" that are the key to keeping the company focused on its

business strategies. To Grecco, J. (2013).

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Finally, the professors Kaplan and Norton (1996, p. 16), define the model of management through the balanced scorecard - CMI as a system of measurement and management from four perspectives: "finance, customers, internal processes and training" (p. 32) growth, which is a tool for communicating and aligning organizations with new strategies and the mission of the company, in a broad set of measures of performance, in order to achieve the right structure for the same. From that perspective, this article exposes the main objective of the research base, which is part of designing a management model for companies in the agricultural sector of the department of Quindío, due to the weaknesses and obstacles facing this type of business to stay and survive in the market, since it requires a structure and routing, allowing them to manage their resources and capabilities to achieve stability and hence, sustainability and growth in the market, In response to the target was raised the following question, in what way can the MSMEs in the agricultural sector of the department of Quindío will be able to improve the administrative and financial processes, in order to leverage resources and ensure sustainability and competitiveness?

### ***Materials and methods***

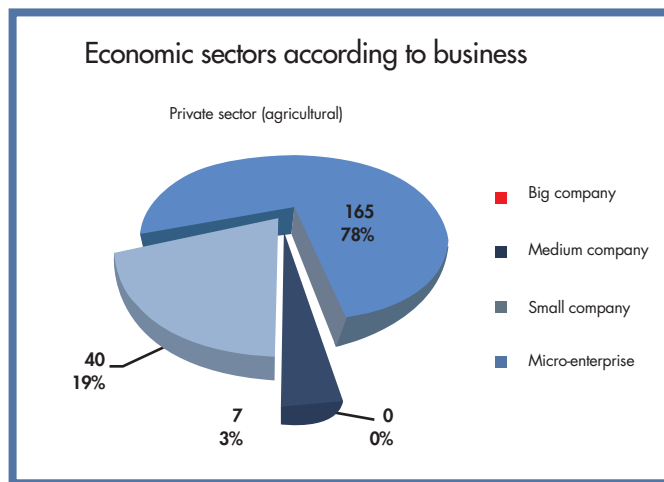
At the beginning of the research that gave rise to this article, we proceeded to the bibliographic review of the theme related to the management models and management that perform the MSMEs of the sector in their administrative and financial operations. The type of study was descriptive with a mixed approach, in order to obtain the information from the enterprises object of the investigation; the general design of the sample is based on the principles of simple random sampling, the population of companies for the purposes of the design of the sample was segmented according to the size and classification of Economic Activities (ISIC) of the Chamber of Commerce of the department of Quindío; the size of the sample, are defined as target population the number of agricultural enterprises registered in the Chamber of Commerce of Quindío department, made up of 73 companies, where spontaneously responded to a tool questionnaire validated by expert judgment and comprised of 23 questions in dichotomous and multiple-choice with single answer, that covered components, administrative, financial, products, people and processes, and that allowed a diagnosis of the integrated management of the companies.

The research process is framed within the line of research Business Development, Faculty of Economic, Accounting and Administrative Sciences of the university of Quindío, which has the objective to build a business model of efficient, sustainable, generator of benefits for the region, adopting general policies of economic development, administrative and financial, by linking teachers, students, graduates of the Higher Institution, Accredited in High Quality and the productive sector. The design of a comprehensive management model for MSMEs in the agricultural sector of the Department of Quindio, was made according to these objectives. In this sense, the development of the research that gave rise to this text was that of the methodology of descriptive type because it allowed it to tell how the MSEM are distributed in the agricultural sector in



the department of Quindio in accordance with its size and activity; in addition, it was classified quantitatively because the analysis of the variables was essential, and allowed it to meet adequately the study of the behavior of the small and medium-sized enterprise to obtain the information of the variables that refer to the diagnosis of firms, such as the direction and management, the structure of the organization, the management of human resources, technology, quality, etc.

Consistent with the above, the population under study were the MSMEs of the agricultural sector of the Department of Quindio and, therefore, the overall design of the sample was based on the principles of stratified sampling in finite populations. For this, it was necessary to define stratification criteria that would be based on the objectives of the study, the information available, according to the population structure and the resources available for the performance of the field work. The population of MSMEs according to the effects of the master design was segmented proportionally to the size, this variable has been defined according to micro, small and medium-sized enterprises. Likewise, the number of companies in each of the strata was obtained from databases registered by the Quindío Chamber of Commerce as can be seen in the following graph:



**Figure 1.** Economic sectors by business size  
Source:Retrieved from business dynamics of Quindío, January-August 2015. Chamber of Commerce of Armenia, (2015)

For the sample size, a total of 213 companies in the sector registered by the Chamber of Commerce of Armenia were taken as shown in Figure 1.

The techniques and instruments taken into account for the collection of information were developed according to the variables. The information was obtained through the implementation of a survey aimed at companies in the sector registered with the Chamber of Commerce of Armenia. The instrument used in this research was the survey, (personal, using as a support a questionnaire) which is defined by Cea (1999, p. 240) as:

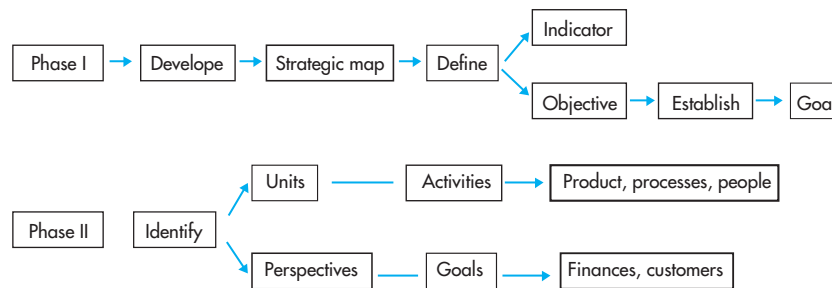
*The application or implementation of a standardized procedure for gathering information (oral or written) from a broad sample of subjects. The sample must be representative of the population of interest and the information collected is limited to that outlined by the questions that make up the precoded questionnaire, designed for this purpose. Cea (1999, p. 240)*

Thus, for the preparation of the questionnaire of the survey instrument, meetings were held with managers to test its operability. In this way it was intended that the questionnaire was accurate and covered information needs, while minimizing possible problems of interpretation and data collection in the preparation of a final questionnaire.

The questionnaire would collect information on:

- Age and size.
- Age and education of owners or managers
- Strategies and competitive factors (strategic planning, partnerships or cooperation agreements)
- Organizational structure and human talent
- Technology, quality and innovation
- Use of ICT
- Accounting and financial aspects

Consistent with the above, a team of student researchers and research assistants is set up for the fieldwork under the Coordination of the research group. Finally, for the elaboration of the integrated management model for the MSMEs of the agricultural sector of the Department of Quindío, the following scheme was performed represented in two phases, adapted from the comprehensive management model of Kaplan & Norton (1996):



**Figure 2.** Phases of the management model.  
**Source:** : the author, adapted from Kaplan and Norton (1996)

## Results

According to the data obtained were analyzed the variables of relative importance related to the administrative and financial management of companies in the agricultural sector of the department of Quindío, with the findings we conducted a diagnostic which identified the following aspects: lack of planning in a formal way, lack of review of their weaknesses and strengths, lack of policy direction, growth of certifications of quality, the companies do not use tools of financial analysis for proper decision making, marketing of their products are done in the regional market, decisions are made based on experience and knowledge of the business; evidence of the hired staff with no qualifications or ongoing training, all of the above enabled us to develop an integral management model from the management model of Kaplan & Norton (1996), that allows to improve the administrative and financial processes, so that the companies under study are competitive and generate value in the future. The main elements of the model are presented below.

*Comprehensive management model for MSMEs in the agricultural sector of the department of Quindío Colombia.* A management model for MSMEs in the agricultural sector of the Department of Quindío is carried out, as indicated above, based on the Kaplan and Norton scheme (1996, p.22), developed in two phases, the first focused on two perspectives and three units, and the second focused on the elaboration of the strategic map.

### **Phase I: identification of units and perspectives:**

The perspectives and units of the model are defined below:

- Financial perspective: the financial perspective or finance, establishes the relationship between the objectives

of each business unit with the strategy, in order to increase revenues and improve operations making use of resources and capital, accurate and updated information of the company at the level of earnings and growth.

- Client perspective: in this perspective measurements associated with the fulfilment of the promise of value to customers are found, but it may also include results of the management of the brand or image of the organization, demonstrating as is seen by current or potential customers, and to serve as support to achieve the business goals of the financial perspective, the goals that arise are focused on satisfying the needs of the users.
- Unity of people: it is the perspective that creates goals for employees to be better and add value
- Unit of products: the set of values of the products must be established, i.e. the degree of adequacy in the offer of customer expectations.
- Process unit: which is the perspective that must be maintained to improve and achieve the objectives, this unit analyzes the adequacy of internal processes in order to achieve customer satisfaction and achieve levels of financial returns.

The model is explained as follows:

Three base units, which are: people, processes and product which describes the activities on which companies should focus in order to achieve targeted results, to the satisfaction of the customers and the management of financial resources that will allow the maximization of the benefits to owning this type of business and MSMEs to grow, to rent and endure in its area of influence.

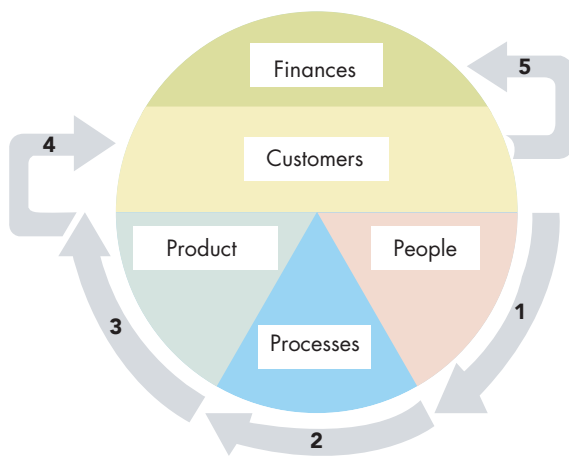


Figure 3. Dynamics of the management model.  
Source: own elaboration.

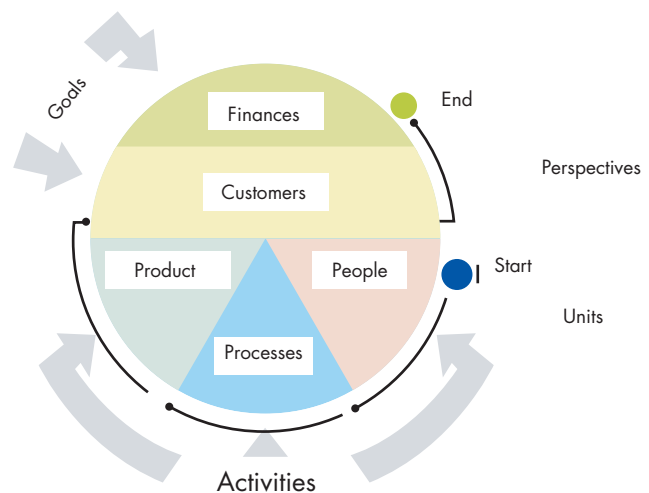


Figure 4. Management model by activities and achievements  
Source: own elaboration.

Referring to the pictures N° 2 and 3 of the model, its functionality shows that the key factor lies in its beginning, which is the unity of the people where it starts, all the productive activity that performs a medium-sized enterprise to achieve the business goals, but to get there requires two (2) more processes, which are the processes and the end product; finally, they facilitate the achievement of two objectives, or perspectives that are to the satisfaction of clients and the scope of the financial goal. The emphasis on the units people, process and products implies that the activities will allow the achievement of the prospects that will lead to the organization of the administrative and financial processes of the sector MSMEs.

**Phase II: development of the strategic map:**

The strategic map is a tool that allows to graphically describe the strategy, providing a framework to illustrate and link intangible assets with value creation processes, through a cause and effect architecture between indicators. "Building a strategic map forces an organization to clarify the logic of how it will create value and for whom". Kaplan & Norton, (2004, p.61).



The main elements of the strategic map are:

**Perspectives:** refers to a key aspect for the formulation of the strategy, it can be understood as a point of view, a perspective or the approach of any of the actors or interest groups of the company.

**Strategic objectives:** they correspond to what is being achieved, what is being pursued.

**Strategic indicators:** Those are the management indicators defined as a set of variables that measure the level of achievement of a process or situation. They are useful for tracking goals, reporting organizational performance, and channeling or directing efforts.

**Goals:** to formulate a goal is to indicate when and how much you want to achieve, therefore, they constitute the qualifying or quantifying element of the objectives.

**Tolerance range:** it is symbolized with a specific color, red, green and yellow, and refers to the degree of tolerance in which the indicator is located, allowing to analyze the variations and take corrective actions. This process of defining the degree of tolerance of an indicator is called semaphorization, and it is nothing but to color the progress that is taken from the objectives and indicators. In the proposed model the colors refer to:

●	<p><b>Optimal range:</b> Indicates an achievable optimal goal or favorable advance; indicates that the achieved value of the indicator is in a range above or below the programmed goal, but remains within the established range.</p>
●	<p><b>Acceptable range:</b> Indicates an acceptable goal, that is, it indicates an average advance in relation to the proposed goals, the company may accept it as a matter of policy, however, it requires adequate strategies to be defined within a certain time limit to achieve it. The yellow color also indicates that the achieved value of the indicator is less than the programmed goal, but remains within the established range to reach the goal.</p>
●	<p><b>Critical range:</b> indicates an unrealized goal; that is, something is not right and that no progress has been made in achieving them. Any goal that is in this range will need an immediate response of strategies.</p>
	<p>Also, it may mean that the achieved value of the indicator is well below the programmed goal or exceeds the program goal so much that it can be considered as a planning failure (that is, the goal was not well established); in accordance with the established ranges.</p>

**Chart 1.** Semaphorization tolerance range  
**Source:** own elaboration.

It is Important to note that, in this strategy map adapted for the enterprises of agricultural sector of the department of Quindío, the targets were set taking into account the results analysed in the instrument of application and diagnosis of the MSMEs sector, in the same way the goals were established in accordance with the macroeconomic variables of the country and the estimated growth of the sector which ranged between 3.4% and 4%, in accordance with the bet of the agricultural policy which is to promote the productive transformation, the agricultural competitiveness and rural development to promote conditions that will stimulate the provision of goods and services, investment, entrepreneurship and the agro-industrial development Agro-business, Valencia, (2019). The goals can be modified according to new projections of the country's economy, according to the behavior and situation of the economy.

Finally, the achievement of targets and the range of tolerance was established by analyzing the different risks to which the sector's SME are exposed, including: financial, biological, and climate risk

						TOLERANCE RANGE		
	PERPECTIVES /UNITS	OBJECTIVES	INDICATOR	GOAL	ACTIVITIES	OPTIMUM %	ACCEPTABLE (%)	CRITICAL (%)
<b>ADMINISTRATIVE AND FINANCIAL MANAGEMENT</b>	Finan cial	Increase sales	(Net profits/total sales )*100	3 5 %	1.Manage marketing and advertising processes to reach new customers.	3,5 %	>=3% < 3,5%	<3%
					2. Search new markets			
					3.Manage discounts on products			
	Lower costs	(Total daily costs/total costs for the period)*100	2 %	1. Design and implement a cost system	2%	>= 1.5% < 2 %	< 1,5 %	
				2. Improve negotiation processes with suppliers.				
	Increase working capital	Customers+ inventory	1 0 %	1. Control inventories	10 %	>= 8% < 10 %	< 8%	
				2. Increase cash sales				
	3. Access external sources of financing, such as soft loans							
Custo mers	Increase the number of customers	(Number of new customers / projected customers)*100	1 5 %	1. Promote the product through different media.	15 %	>= 10% < 15 %	< 10%	
				2. Participate in agricultural and business fairs.				
Increase customer satisfaction	(Number of satisfied customers / total customers)*100	8 0 %	1. Improve information and customer service processes	20 %	>= 15%< 20%	< 15 %		





						TOLERANCE RANGE		
	PERPECTIVES /UNITS	OBJETIVES	INDICATOR	GOAL	ACTIVITIES	OPTIMUM %	ACCEPTABLE (%)	CRITICAL (%)
<b>ADMINISTRATIVE AND FINANCIAL MANAGEMENT</b>	Products	Improve products presentation	(Number of upgraded products / Total products)*100	30%	1. Offer good quality products	10%	>=8% <10%	<8%
		Diversify products	(Number of new products / Total products)*100	20%	1.Offer other complementary products in the market	20%	>= 15%< 20%	< 15%
		Manage marketing and advertising processes	(Number of campaigns carried out / Total campaigns projected)	10%	1.Manage the development of a marketing and advertising program, through government alliances, or educational institutions	10%	>= 5%< 10%	< 5%
		Reduce delivery times	(Number of delivery days / Total days scheduled)*100	10%	1. Improve order control processes	10%	>= 5%< 10%	< 5%
	Processes	Improve the packaging and packing processes of products	(Number of packed products / Total products)*100	10%	1.Adapt the packaging and presentation of the product, according to their characteristics	10%	>= 5%< 10%	< 5%
		Improve billing processes	(Number of invoices made / Total orders made)*100	20%	1.Carry out a follow-up process on the orders and billing of the products	20%	>= 15%< 20%	< 15%
		Manage certification processes in good agricultural practices	(Number of managed certifications / total projected certifications)*100	10%	1. Identify the implications and regulations of the GAP established by government entities	10%	>= 5%< 10%	< 5%
		Improve staff skills	(Number of positions with labor competencies / Total positions in the company)*100	20%	1.Identify skills and gaps, and design a training program.	20%	>= 15%< 20%	< 15%
		Implement occupational health and safety processes	(Number of processes implemented / Total processes projected)*100	10%	1.Conduct a risk landscape study and implement an OSH program through the ARL	10%	>= 5%< 10%	< 5%
		Improve and consolidate recruitment processes	(Number of employees linked to the hiring process / Total employees linked)*100	20%	1.Identify weaknesses in hiring and improve hiring process	20%	>= 15%< 20%	< 15%

Chart 2. Strategic map as development of the charts analyzed from the management model

Source: own elaboration.



Finally, we show the diagram of the strategic map, where we can show how the strategy links the processes of value creation and the relationship of the objectives of the perspectives and units to each other, by cause and effect relationships, their alignment is the key to value creation and propose a focused and internally consistent strategy:

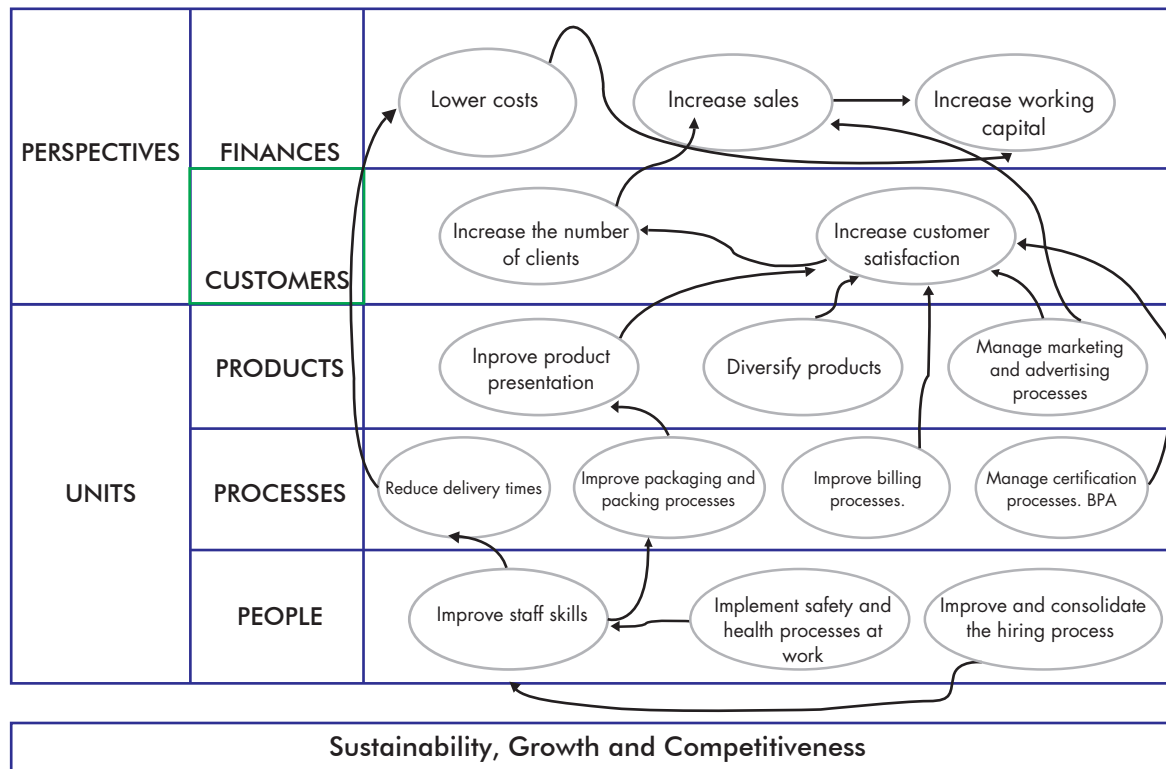


Figure 4. Strategic map for MSMEs in the agricultural sector of the department of Quindío Colombia  
Source: own elaboration.

### Discussion

The findings related above are consistent with other studies conducted in the sector, such is the case of García Pérez, (2017), Mora Rendón, (2014) that show in their work administrative and financial difficulties and from there proposed management models for the studied companies that would improve the situation. The companies in the department of Quindío are not immune to these difficulties, the results show the same administrative and financial difficulties of related jobs, however, a big difference with them, is that, in the companies of the department of Quindío, the owners or managers of MSMEs in a high percentage (46%) have a degree of schooling among master's degrees, specializations and a low percentage has technological studies, therefore it can be appealing to them the implementation of the management model, and continuously assess the results of their companies.

For its part, in Colombia, the management models used in business to determine the dynamics of the same, are models that are mostly designed for the revision of the large companies Pérez Garzón (2009) because these organizations, in addition to being already established, use the management For its part, in Colombia, the management models used in business to determine the dynamics of the same, are models that are mostly designed for the revision of the large companies Pérez Garzón (2009) because these organizations,

in addition to being already established, use the management models as a tool that allows them to further strengthen their structure and to remain on the market, therefore you do not observe management models disseminated to small and medium-sized companies that match the extent of their operation and internal and external processes. To implement a management model in MSMEs, it is important to consider the studies and research that have been carried out around this type of companies, so as to work from the advances developed. However, according to Vera (2012), the results show a low productivity in the dissemination of research related to MSMEs in Colombia, since in the period 2005-2018, the journals analyzed show a low number of publications associated with this type of companies, that is, 25 documents in 13 years, since a significant number of investigations are concentrated in large companies and very little on MSMEs models.

Finally, for the research group of the Faculty of Economic Sciences of the University of Quindío GIAF understand a model as a prototype, a tool that can be applied in a business under certain pillars that will enable the achievement of the primary objectives of Grow, Rent and Endure, based on component Administrative, financial, people and process and products /services, upon which to establish the needs of the different companies that you can reach with the proposal of a management tool that can be adopted and adapted to certain particularities.

The components of the developed model for MSMEs of the department of Quindio, is conceived as integral to the reason to that is based on the different activities that a company should focus for the achievement of its mission and vision, the reason why these pillars that have been defined are displayed as a system where they interact all the activities and tasks

that should become a focus of attention on the part of the directors or owners of companies. And in terms of the four pillars defined converge to the model established by professors Kaplan and Norton (1996), which define the Balanced Scorecard - CMI as a system of measurement and management which is a tool for communicating and aligning organizations with new strategies because it integrates the indicators with the definition of the strategy, what makes it useful because it translates the strategy and mission of an organization into a comprehensive set of measures of performance, in order to achieve the right structure for the same.

It should be noted that the Balanced Scorecard (CMI) measures the organization's performance from four perspectives: finance, clients, internal processes and growth training (1996; p. 16), in order that, once the overall strategic objectives have been defined, they are aligned with the entire organization, thus determining extension objectives for each strategic area or dimension.

## **Conclusions**

The present research project made it possible to develop a suitable integrated management model adapted from Kaplan and Norton, which allows it to improve the way of administration and the achievement of objectives of the MSMEs of the agricultural sector of the Department of Quindio in addition to being competitive to stay and rent. Although somehow, there are missing studies on the administrative and financial management in agricultural enterprises from the academic sector, from here you can create new studies, such as the construction of administrative models or own financial reality of the companies in the agricultural sector, or studies on financial models or financial tools applied to the companies of this sector, forms of investment and profitability, analysis of funding sources, and even topics related to personal finance, or proper handling of the money.

Given the importance of the agricultural sector at the national and international levels, it is necessary to financial, commercial and production aspects, which improve competitiveness and permanence in the market. Likewise, it is of capital importance to clarify the administrative issues and financial companies of the agricultural sector



of the department of Quindío, since they are mainly due to the lack of planning in a formal way, lack of review of their weaknesses and strengths, these do not have a policy direction that will set objectives and targets, the companies also have certifications of quality, they do not use financial information for business decision-making also have a proper management of working capital, it is evident that the producers are betting on in a big way to the regional market for marketing of their products, this due to the lack of knowledge related to marketing plans or marketing, despite the fact that the owners have a diploma in higher studies from master's-level technicians and do not consider the administrative and financial aspects important for the development of the activity and make decisions based on experience and knowledge of the business.

Finally, from an administrative and financial point of view it is suggested to apply the integral management model proposed, which are generally only of use for large companies, so it is recommended that from academic institutions, government, and public policy in the department of Quindío, trainings can be carried out in administrative and financial processes for companies in the sector.

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