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ECONOMIC VALUE OF BUSINESS STRATEGY: THE CASE OF CANTONAL AGRICULTURAL CENTER OF PURISCAL, COSTA RICA

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Abstract:

The Cantonal Agricultural Center of Puriscal (CACP) promotes local participation and improves the agricultural, forestry and natural resource conservation sectors. This study focused on designing a strategic plan to improve competitiveness and contribute to rural development over a five-year horizon in the CACP. The Internal Factor Evaluation Matrix (IFE), the External Factor Evaluation Matrix (EFE), the SWOT Matrix, the Analytic Hierarchy Process (AHP), the Balanced Scorecard (BSC), the Capital Asset Pricing Model (CAPM), the financial analysis of the income statements and the Net Present Value (NPV) were implemented. The main strategy focused on the commercialization of diversified agricultural and forestry products and services, with added value, oriented to the national and institutional market. The results indicated substantial improvements in financial and operational sustainability through the application of the proposed strategies.

Keywords: Business management; planning; financial analysis; agricultural sector; rural development.

Jel Codes: D81, L22.

1. Introduction

The agricultural sector is crucial for the economy, especially in developing countries such as Costa Rica (Montenegro, 2024). Since the transition from the Institute of Agricultural Development (IDA) to the Institute of Rural Development (INDER), public policies and rural development have undergone significant changes. This process, considered multidimensional and multisectoral, analyses local and regional economies. The evolution of these policies was structured in three phases: the inventory of policy instruments in the National Development Plans, the qualitative evaluation of their results and the systematization of public spending in the agricultural sector. This comprehensive approach

covers the economic, social, cultural and institutional dimensions (Barboza Arias, Rodríguez Miranda & Sáenz Segura, 2020).

There are different tools used in the agricultural sector in Costa Rica, such as the Cantonal Agricultural Centers (CAC) created in 1970. This encourages the participation of the population to promote rural development and agricultural, agroforestry, fishing and conservation activities. In this context, the creation of projects is promoted through organizations with different financial characteristics, such as private non-profit entities, with their own capital or recipients of resources from state institutions. Among the main functions of the CACs is to prepare an annual productive development plan for institutions in the agricultural sector, promote productive projects in conjunction with farmers, as well as collaborate with institutions in the sector to promote agricultural production and rural development (Law 4521, 1969).

Regarding the context of the canton of Puriscal located in the province of San José, it emerged through a process of agricultural colonization. Since its beginnings in the 19th century, Puriscal has stood out for its strong agricultural vocation, focused on the local market. For a time, it was characterized by its high productivity of basic grains, however, in certain regions there was a stagnation that affected the rural development of the area (Mora & Chaves, 2013).

Subsequently, in the face of crisis situations in the agricultural sector, on September 8, 1971, a total of 20 farmers founded the Puriscal Cantonal Agricultural Center (CACP), promoting the improvement of the living conditions of producers in the area through projects and services such as credits, advice and training in forest management, suppliers of agricultural inputs, housing procedures, management of the Payment Program for Environmental Services (PPSA) and the coordination of the Puriscal Producer Fair (CACP, 2015). In this way, the organization implements financial programs for agricultural and agro-industrial activities, promoting the diversification of the sector by integrating productive activities such as coffee cultivation, horticulture, forestry and livestock (Perea Badillo, 2018).

In an organizational environment where growth and development depend on efficient and effective strategies, strategic planning can provide a sustainable competitive advantage in the market. This involves understanding the organization and its evolution, promoting innovation, adapting to the market segment, promoting itself, exploring new markets and developing projects and research. Therefore, it is essential that organizations have optimal strategies to grow and develop in a dynamic external environment, as well as internal functioning that allows for optimal business development (Delfín Pozos & Acosta Márquez, 2016).

The main difficulty faced by the CACP lies in the lack of a planned and operational strategic scheme with clear objectives that increase its competitiveness at a local level. In addition, the high dependence on external institutional strategies makes it difficult to make decisions and implement optimal initiatives for the agricultural development of the region, due to the lack of specificity and adaptability of these. Therefore, it is crucial that the organization defines strategies that fit its mission, vision, values, objectives and functions, to improve the efficiency of its operation and, consequently, the benefits obtained.

This study considered economic value through a business strategy aimed at improving competitiveness at the local level, its value chain and an appropriate course of action for the CACP in a 5-year horizon.

2. Literature Review

Strategic planning has been fundamental in the organizational performance of small and medium-sized companies, considered an essential process for decision-making and maintaining a clear long-term vision. By collecting and analysing data on the factors that

induce change in the market, strategic planning provides the necessary bases for making informed decisions. That is, through the real context of the company and the factors that affect the market, it allows directing and adapting to current changes through previously identified strategies (Salazar, 2005). For their part, Ruiz Andrade, Solís Palafox & López Luna (2021), relate it to the ability of managers to monitor and interpret the organizational situation through their values, mission, vision and strategic objectives, deepening in their analysis the application of strategic techniques in marketing to increase organizational performance.

Strategic management can be defined as the formulation, implementation, and evaluation of strategies that can allow a company to achieve its objectives and maintain a competitive advantage in the market. It consists of three main stages, the first consists of the formulation that develops the vision, mission, and the analysis of Strengths, Opportunities, Weaknesses, and Threats (SWOT), so that the company can take advantage of the former and combat the latter. The second and third stages include the implementation and evaluation that assesses the factors that can affect an organization due to the constant change that can occur in the market. This is essential because performance depends on the design and execution of a strategy (Mata, Tarango, Ojinaga, Noriega & Zepeda, 2023). In general, both definitions can be contrasted because management refers to the formulation, implementation, and evaluation of strategies, however, planning focuses on formulation. Even so, both can be established as synonyms (David, 2013).

Strategy is based on the choice or adoption of lines of action, as well as the allocation of resources to achieve the goals and objectives of an organization, achieving an advantageous strategic position compared to the competition in the market. Thus, the lines of action can be reflected in a plan, where the intervention and interaction in the different situations that arise are conducted (Montoya Restrepo, 2009). Therefore, a competitive advantage is defined as the accumulation of internal and external factors used in the production of a good or service. It is not necessarily permanent or absolute since it depends on the strategies of the company, the competitors and the planning (Sobrino, 2002).

The development of competitive advantage can be linked to the adoption of customer loyalty strategies through the implementation of differentiation by preventing the possible rapid desertion of customers. Thus, competitive advantage is based on the use of tactics aimed at increasing the profitability of the organization. The theoretical basis of this advantage lies in the various strategies implemented by managers through integrated activities that facilitate the identification and overcoming of competition (Molina Quispe, 2023).

According to David (2013), the comprehensive model for strategy formulation consists of three main stages. The first is made up of the input stage, which includes a series of matrices for the assessment of internal and external aspects of a company, including the Internal Factors Evaluation Matrix (IFE), the External Factors Evaluation Matrix (EFE) and the Competitive Profile Matrix (CPM). The second stage is the adaptation stage, which focuses on generating feasible strategies considering internal and external factors through the Strengths, Opportunities, Weaknesses and Threats Matrix (SWOT) and the Strategic Position and Actions Evaluation Matrix (SPACE). Finally, the decision stage evaluates the feasibility and choice of strategies through the Quantitative Strategic Planning Matrix (QSPM). Due to the focus of this study, the IFE, EFE and SWOT matrices were used.

The IFE Matrix allows to identify and evaluate the main strengths and weaknesses of the functional areas of an organization. On the other hand, the EFE Matrix provides the impact of the environment through opportunities and threats, as well as the way in which the company or organization is acting in the face of these factors (Bringas Egúsquiza, Garro Ashuy, Quintana Rojas & Rios Saca, 2016). In addition, the SWOT Matrix evaluates these main factors to obtain a diagnosis of the internal situation (strengths and weaknesses) and

external situation (opportunities and threats) of the organization through a perspective of the strategic situation, seeking a balance between both situations (Inocencio & Norieth, 2021).

Studies such as those by Chicaiza Lema, Chicaiza Lema, Velasco Guerra & Mena Garzón (2022) show the current state of administrative management using tools such as the SWOT analysis, complemented by an initial analysis both external and internal of a transport company. This tool allows to identify the areas that require intervention to achieve the objectives of the organization through a general diagnosis of the business situation. This makes it easier to assess whether the company is prepared to face the challenges associated with meeting its goals through an analysis of its capabilities and market environment scenarios, in response to efficiency, rational use of resources and meeting customer expectations.

According to Ocampo Murillo & Quintero Garzón (2020), multicriteria analysis allows multiple criteria to be considered explicitly, to structure a problem and offer a model that allows a rational, explained and justified decision to be made. The techniques can be classified into two groups, the first is through continuous techniques characterized by the number of infinite alternatives that the decision-maker considers. And the second group are discrete techniques that make use of a decision matrix for the analysis of discrete criteria. This last group presents different methodologies, including the Analytic Hierarchy Process (AHP).

The AHP is a method used in decision-making for new products that is viable in a business information system. This method allows criteria to be ranked intuitively and does not require quantitative data on the results of each alternative evaluated. In addition, it tolerates certain levels of inconsistency in human decisions, which makes it especially useful in complex contexts (Font Graupera, 2000). In supply management, the AHP model is used to structure the problem in a key hierarchy, where the decision-maker breaks down the problem into more relevant parts, organized in a structure of general goal or objective, criteria and alternatives (Vergara Rodríguez, Mendoza Ortega & Salgado Ordosgoitia, 2018).

The AHP, through qualitative SWOT strategic analysis, uses scales of factors and subfactors that are transformed into relative priorities through comparisons of multi-level hierarchical structures. During this same process, a pairwise comparison is carried out, which is organized in a matrix that calculates the relative importance of the criteria, factors and subfactors, determining the consistency indices that evaluate the degree of coherence of the judgments compared to those that a large sample of purely random judgments would provide (Rupérez & García, 2023). The integration of the SWOT analysis and the AHP also makes it possible to evaluate the viability, projections and profitability of marketing a product by facilitating the establishment of strategies, allowing decision-making according to the capacity, advantage and competitiveness of the organization through the factors with the greatest relative importance for its respective design (Colquehuanca Calli, 2020).

The Balanced Scorecard (BSC) is a management tool capable of diagnosing and monitoring a situation continuously, being effective for decision-making when defining, communicating and carrying out organizational strategies through comprehensive management indicators. It uses four perspectives, the first is the financial one, which is related to the tangible result provided by the strategy. The second dimension is the customers, in line with the market strategy and the segment to which the organization is directed. The third is the internal processes based on their respective improvement for the fulfilment of the established strategic objectives. And, finally, the learning and growth perspective establishes how the company should improve over time to create future value, focusing on human capital, its capabilities and its knowledge (Ghiglione, 2021).

Financial analysis, known as financial statement analysis, is a technique that allows the identification of the economic and financial conditions in which an organization operates. It is a tool that evaluates the current situation and predicts the future through the analysis of indicators such as liquidity, solvency, indebtedness, performance, profitability and

efficiency, facilitating appropriate decision making (Rojas Celi, 2015). This analysis uses indicators due to the division between monetary amounts of the accounts and the items that make up the financial statements, comparing magnitudes between values (Ramírez & Moctezuma, 2012).

The Cost of Capital is the average cost of the various sources of asset financing that affect capital investment decisions. It is equivalent to the minimum rate of return that must be obtained on investments to maintain the value of the shares (Londoño & Sánchez, 2017). Thus, the Capital Asset Pricing Model (CAPM) allows the cost of an organization's equity to be calculated through the relationship between risk and return on an investment by demonstrating that the rate of return on a financial asset is determined by its covariance correlated with the rate of return on the portfolio (β). Where, beta represents the amount of risk in relation to the market portfolio, obtaining the quotient by dividing the covariance between the return on the asset and the variance (Martínez, Ledesma & Russo, 2013).

3. Methodology

The description of the variables was conducted by collecting information from primary and secondary sources, using quantitative and qualitative research methods. Secondary information on the context of the canton of Puriscal was obtained through institutions such as the Ministry of Agriculture and Livestock (MAG), the National Production Council (CNP), the Rural Development Institute (INDER) and other online research sources. Qualitative information was collected through in-depth interviews and work sessions with CACP administrators. As for quantitative information, it was obtained from primary sources such as financial statements, reports and in-depth interviews with associated persons and other members of the CACP.

For the analysis of external factors using the EFE matrix, primary information was collected through consultations with members of the organization, which allowed us to understand the current position of the CACP in the face of opportunities and threats in the environment. On the other hand, in the case of the IFE matrix, the most important strengths and weaknesses of the organization were defined, where the collection of information and data necessary for this matrix was obtained through administrative personnel and the board of directors of the CACP. In both cases, expert criteria and a process of ranking importance were used, where 1 represents the lowest hierarchy. The identified factors were rated based on the scale used by David (2013): (1) poor response, (2) average response, (3) above average response, and (4) superior or very superior response. This allowed us to obtain a weighting for each factor and a final rating for the external and internal environment.

The determination of the most appropriate strategies for the organization is based on the joint work with the CACP administrators, considering the previous analyses of the EFE matrix and the IFE matrix. In this way, the SWOT matrix was conducted together with the administrators and the board of directors of the CACP, and then the optimal strategies were determined through multi-criteria analysis. Thus, the strategies of strengths and opportunities (SO), the strategies of weaknesses and opportunities (WO), the strategies of strengths and threats (ST) and the strategies of weaknesses and threats (WT) were determined. For the proposed strategies, the level of impact was obtained according to the weights of each factor of the EFE and IFE matrices.

Using the AHP in combination with the SWOT matrix, the alternatives of the strategies proposed for selection are compared by the percentage of coverage for each proposed strategy. This analysis was structured in four levels. The first level was the target objective to be achieved through the decision, the second level was the four groups of the SWOT analysis, the third level was the factors included in each group of the previous level, and finally, the fourth level was the strategies evaluated and compared. The above, through

formula (1) present below as the global (relative) value of the Strategy (Osuna & Aranda, 2007).

$$Vj = W_S \sum_{i=1}^{i=ms} W_{Si} U_{Si,j} + W_w \sum_{i=1}^{i=mw} W_{Wi} U_{Wi,j} + W_O \sum_{i=1}^{i=mo} W_{Oi} U_{Oi,j} + W_T \sum_{i=1}^{i=mt} W_{Ti} U_{Ti,j} \quad (1)$$

The above equation was analysed in parts, so each variable is described below (Osuna & Aranda, 2007).

(W_s, W_w, W_o, W_T): Relative importance of each group of factors (S, W, O and T)

$(W_{S1}, W_{S2}, ..., W_{Sms}), (W_{W1}, W_{W2}, ..., W_{Wmw}), (W_{O1}, W_{O2}, ..., W_{Omo})$ and $(W_{T1}, W_{T2}, ..., W_{Tmt})$: relative importance of the strengths factors (S1, S2, ... , Sms), weaknesses factors (W1, W2, ... , Wmw), Opportunities (O1, O2, ... , Omo) and (T1, T2, …, Tmt).

$U_{Si,j}$: Efficiency of Strategy j in taking advantage of the strength factor Si (i = 1, 2, ..., ms)

$U_{Wi,j}$: Efficiency of Strategy j in lessening the effects of the weakness factor Wi (i = 1, 2, ..., mw)

$U_{Oi,j}$: Efficiency of Strategy j in taking advantage of the opportunity factor Oi (i = 1, 2, ..., mo)

$U_{Ti,j}$: Efficiency of Strategy j in facing the threat factor Ti (i = 1, 2, ..., mt)

On the other hand, based on the most effective strategies selected, a master strategy was defined and he BSC was created for it and for a 5-year horizon including objectives, goals, indicators, and strategic actions.

Subsequently, the financial analysis of the strategy determined the level of investment for its implementation through the valuation of the organization's operating cash flow, where the capital cost follows the proposal of the CAPM model of Sharpe (1964) and Markowitz (1952) through equation (2) and equation (3).

$$Ks(\$) = KF + BETA\ (KM - KF) + RP \quad (2)$$

Where, *Ks($)* represents the cost of equity capital expressed in United States of America dollars, *KF* the risk-free rate of the business, *BETA* is the unleveraged beta of the business, *KM* the expected risk of the business in the market and *RP* the country risk.

To determine the capital cost, the CACP's main business was considered, which is the rental or leasing of the spaces of the Puriscal Producer Fair, generating more than 50% of its annual income. Thus, the CAPM model considered the sensitivity of the real estate rental business to the systematic risk of the industry.

The beta factor used in equation (2) for the real estate rental business is obtained by averaging the global unlevered beta, the United States, Japan, Europe, Austria, New Zealand, Canada, Emerging countries, China, and India. The above with an equivalent average value of 0.58, a standard deviation of 0.15 and a coefficient of variation of 0.26 (Damodaran, 2023).

On the other hand, through an adjustment, the capital cost rate expressed in dollars was converted to local currency using equation (3) below.

$$KS(\text{\textcent}) = \frac{(1 + KS\ (\$)) \times (1 + Inflación\ Costa\ Rica)}{(1 + Inflación\ EUA)} - 1 \quad (3)$$

Where, *KS(¢)* represents the cost of equity capital in local currency (colones of Costa Rica), *KS($)* the cost of equity capital expressed in dollars, *Costa Rica inflation* is the projected inflation in Costa Rica and *US inflation* is the projected inflation in the United States of America.

Regarding the present value of the operating cash flow, this was determined through the analysis of the income statements from 2018 to 2022, together with their respective

projections until 2033, in addition to the operating cash flow projections. This analysis considered the estimated rate of capital cost of equity in local currency. In addition, a comparator was created to model the financial behaviour of the CACP considering the implementation of the strategy.

4. Results and Discussion

4.1 External Factor Evaluation Matrix (EFE)

The EFE Matrix assessment is based on the analysis of political, economic, social, technological, ecological, and legal information in relation to the actions of the CACP. Its values range from 1 to 4, where 1 means that the organization has not taken advantage of the opportunities in an optimal way and has not correctly executed the actions necessary to face the threats. On the other hand, 4 means that the organization has benefited from the opportunities and has protected itself against the threats of the environment through strategic actions. The results of the above mentioned are presented in Table 1 below.

Table 1. External Factors Evaluation Matrix (EFE) in the CACP.

No.	Opportunities	Ranking	Rating	Score	Weight	Note
O1	Agroecological innovation and climate-smart agriculture	1	2	4	0.082	0.163
O2	Innovation in the use of ICT to improve the efficiency of organizations	1	1	4	0.082	0.082
O3	Trend towards consumption of healthy and harmless products adapted to current trends and different market niches	1	2	4	0.082	0.163
O4	Links with Plans, Programs and Projects of entities related to Rural Territorial Development	2	2	3	0.061	0.122
O5	Innovation in mechanisms of association with input suppliers and producers	1	1	4	0.082	0.082
O6	Forest carbon markets for climate change adaptation and mitigation	2	2	3	0.061	0.122
O7	Development and linkages of the main productive activities of the canton	3	1	2	0.041	0.041
O8	Partnership and cooperation mechanisms for innovation in organic agriculture and good agricultural and forestry practices	3	1	2	0.041	0.041
O9	Agreement with CNP to participate in supplying state institutions	1	2	4	0.082	0.163
O10	Needs for dissemination and transfer of technology to producers	4	1	1	0.020	0.020

No.	Threats	Ranking	Rating	Score	Weight	Note
		Sum of weights WO:		**0.632**		
T1	Climate variability	1	1	4	0.082	0.082
T2	Slowdown in the economy and decline in household consumption	2	1	3	0.061	0.061
T3	Effects of global health problems affecting food security and the economy	3	2	2	0.041	0.082
T4	Inflationary fluctuations and rising interest rates	4	2	1	0.020	0.041
T5	Low level of association and participation of producers in the region	1	1	4	0.082	0.082
T6	Decrease in obtaining resources from other institutions due to reduction in public spending	4	2	1	0.020	0.041
T7	Organizational gaps in competitiveness in prices, efficiency and productive chains	2	2	3	0.061	0.122
		Sum of weights WT:		**0.367**		
		Total:		49	1.00	1.510
					Over 100%	**37.74%**

Based on the above, obtaining a score of 37.74% represents a need for the CACP to create a significant effort to improve its strategies by taking advantage of opportunities and acting on threats, due to the remaining 62.26% possibility of improvement.

The CACP can improve by increasing its capacity to form strategic alliances and take advantage of joint opportunities, adapting to consumption trends of innovative agri-food products with added value. It can also diversify its service portfolio and expand into new segments of the agricultural and forestry sector. Furthermore, through collaboration with other companies, it can strengthen partnerships and implement technological innovations that promote efficiency and competitiveness. Finally, it is crucial to adapt and evolve in response to changes in the external environment, proactively adopting technologies and strategic approaches.

It should be noted that the national context regarding trade agreements that have been acquired on environmental issues and sustainable development was considered, so the organization must take advantage of the available instruments through agroecological innovations for sustainable production and climate-smart activities. The author Mite-Albán (2018), in her article entitled "Management accounting strategies applied to Pymes: Literary review" determined among its results the importance of innovation for the sustainability of organizations through the application of technological tools.

Among its opportunities is the innovation approach using ICT to improve efficiency, access to information, decision-making, communication, data management, access to markets, customer service, improvements in marketing, among others. However, Loayza (2021) in the case of the design and implementation of the BSC to improve the business management of an ink factory in Lima, because of the external analysis, it determined the

threat of the advancement of technology in materials, processes and equipment, generating emphasis on the need for innovation in the production processes of the evaluated organization. Due to the above, the results can be contrasted between a threat and an opportunity that differs depending on the geographic area and the type of organization.

4.2 Internal Factor Evaluation Matrix (IFE)

To rate the performance for the CACP in the internal environment on a scale of 1 to 4, where a score of 1 indicates that the organization has neither optimally leveraged its strengths nor adequately addressed its weaknesses. In addition, a score of 4 means that the organization has leveraged its strengths and effectively defended against its weaknesses. So, the results of the assessment of internal factors can be seen in Table 2 below.

Table 2. Internal Factor Evaluation Matrix (IFE) at the CACP.

No.	Strenghts	Ranking	Rating	Score	Weight	Note
S1	Puriscal producer fair project underway	1	3	6	0.063	0.188
S2	Own facilities for the development of other projects	1	2	6	0.063	0.125
S3	Forestry project	1	2	6	0.063	0.125
S4	Business alliances with suppliers of food products for sale	5	2	2	0.021	0.042
S5	Legal support and the public interest of the organization	1	3	6	0.063	0.188
S6	Human capital willing to drive change and oriented towards entrepreneurship and innovation	1	3	6	0.063	0.188
S7	Track record and market knowledge	3	1	4	0.042	0.042
S8	Values and recognition of the organization in the canton	4	2	3	0.031	0.063
S9	Accumulated experience and resilience capacity	6	3	1	0.010	0.031
S10	Transparency and accountability	2	3	5	0.052	0.156
		Sum of weights WS:		0.469		
No.	Weakness	Ranking	Rating	Score	Weight	Note
W1	Improving the competitiveness of agricultural food product prices	3	1	4	0.042	0.042
W2	Lack of own facilities and installed capacity for growth of the Fair	1	2	6	0.063	0.125
W3	Lack of stable agreements and control with fairground workers affiliated with the organization	2	1	5	0.052	0.052
W4	Lack of staff to undertake new projects	3	2	4	0.042	0.083

W5	Lack of operational plans, strategies and effective implementation of control and oversight	2	1	5	0.052	0.052
W6	Lack of innovation and the use of technologies	3	1	4	0.042	0.042
W7	Legal dependence on agreements for the use of central facilities and fair spaces	1	2	6	0.063	0.125
W8	Low investment capacity, very weak financial situation and high sales and administrative costs	2	3	5	0.052	0.156
W9	Low level of evaluation and proposals for new projects	1	3	6	0.063	0.188
W10	Low leverage capacity and access to credit	1	2	6	0.063	0.125
		Sum of weights WW:			**0.531**	
		Total:		**96**	**1.00**	**2.136**
				Over 100%:		**53.39 %**

The final score of the matrix, which obtained an intermediate value of 2.14, indicated that the CACP has important weaknesses to overcome and strengths to take advantage of. In relation to its percentage performance, being equivalent to 53.39%, it is considered low or average, indicating a possible margin for improvement of 46.61%.

Regarding the weaknesses faced by the CACP, they are related to the management of resources to improve its efficiency and competitiveness, as well as the adequate exploitation of the public interest from which it was created. There is also a lack of its own facilities and installed capacity, innovation, and technology, as well as a low investment capacity. On the contrary, its strengths include the knowledge and experience of the organization, in addition to human capital and the capacity of the administrative area.

Arroba Macías & Cobeña Sánchez (2024), through the investigation of the analysis of the administrative and economic management of the Cantonal Agricultural Center of Puntarenas, allowed to compare results and determine similarities in the IFE matrix regarding the weaknesses between the Agricultural Centers. Among its strengths, the experience in the national agricultural market and the high capacity of human talent stands out. However, among its weaknesses are the lack of investment capital to increase capacity, the updating of modern technologies and the adequacy of the facilities to satisfy the entire demand. These weaknesses may be related to the characteristics and operating methods of the Agricultural Centers, influencing their strategic, financial, human capital, innovation capacity, among others.

4.3 Strengths, Weaknesses, Opportunities and Threats Matrix (SWOT)

Using the external factor evaluation matrix (EFE) and the internal factor evaluation matrix (IFE), the SWOT matrix analysis presented in Table 3 was performed. The above resulted in strategies through a comprehensive and competitive approach that manages to enhance its strengths and opportunities, as well as confront its weaknesses and threats.

Table 3. Strengths, Weaknesses, Opportunities and Threats Matrix (SWOT) in the Cantonal Agricultural Center of Puriscal.

Strategies SO	Strategies WO
SO1. Promote innovative products adapted to modern needs.	WO1. Innovation and marketing of value-added products.
SO2. Insertion into the institutional supply program (PAI).	WO2. Strengthen price control and application of protocols at the producer fair.
SO3. Promote new services and/or products related to the forestry sector.	
Strategies ST	**Strategies WT**
ST1. Development and marketing of value-added products.	WT1. Marketing of high value-added products.
ST2. Creation of a collection center and product distribution.	WT2. Promoting the participation of new producers and civil society groups in CACP activities.
ST3. Strengthening the association of new producers and generational integration.	WT3. Secure agreements for the use of fair facilities and spaces.
ST4. Development of agroforestry and environmental advisory services.	WT4. Seeking sales growth through the marketing of innovative products and services with added value.
ST5. Venture into the marketing of bio-inputs for agriculture.	WT5. Efficient control of sales and administration expenses.
ST6. Search for new productive activities and market niches.	WT6. Designing operations and process control tools in various areas to achieve efficiency.
	WT7. Reforming pre-established rules or regulations to achieve efficiency.

In the business strategy proposal for the Cantonal Agricultural Center of Buenos Aires by Arguedas Navarro et al. (2024), similarities are obtained from the SWOT analysis in some proposed strategies such as strengthening existing relationships with institutions such as the PAI and clients to improve working conditions, implementing innovation and the use of technologies for operational management and marketing, as well as generating strategic commercial alliances. On the contrary, strategies focused on the development of training, marketing, financing, and infrastructure projects for the organization were analysed.

4.4 Evaluation and Selection of Strategies for the CACP

By obtaining the results of the sum of the weights for the strengths, weaknesses on one hand and for opportunities and threats to the other hand (the values of 0.47, 0.53, 0.63 and 0.37 respectively) the pairwise SWOT matrix is obtained with its factor's normalized

weights (WSWOT) used in the AHP method (table 4). Each pair above the diagonal line has its mirror image below it.

Table 4. Pairwise comparisons of SWOT factors in the CACP.

Factor	Strenghts	Weakness	Opportunities	Threats	WSWOT
Strenghts	1	0.88	0.74	1.28	0.23
Weakness	1.13	1	0.84	0.42	0.20
Opportunities	1.35	1.19	1	1.72	0.31
Threats	0.78	2.40	0.58	1	0.26
Total	4.27	5.47	3.16	4.42	1.00

The assessment factors representing the relative importance each over each, were obtained for each of the comparison matrices of the different groups, where the matrix of strengths (table 5), weaknesses (table 6), opportunities (table 7) and threats (table 8) are presented with their respective normalized weights. Again, each pair above the diagonal line has its mirror image below it.

Table 5. Comparison Matrix of Strengths Group for CACP

Strenghts	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	WS
S1) Puriscal producer fair project underway	1	1.00	1.00	3.00	1.00	1.00	1.50	2.00	6.01	1.20	0.13
(S2) Own facilities for the development of other projects	1.00	1	1.00	3.00	1.00	1.00	1.50	2.00	6.01	1.20	0.13
(S3) Forestry project	1.00	1.00	1	3.00	1.00	1.00	1.50	2.00	6.01	1.20	0.13
(S4) Business alliances with suppliers of food products for sale	0.33	0.33	0.33	1	0.33	0.33	0.50	0.66	2.00	0.40	0.04
(S5) Legal support and the public interest of the organization	1.00	1.00	1.00	3.00	1	1.00	1.50	2.00	6.01	1.20	0.13
(S6) Human capital willing to drive change and oriented towards entrepreneurship and innovation	1.00	1.00	1.00	3.00	1.00	1	1.50	2.00	6.01	1.20	0.13
(S7) Track record and market knowledge	0.67	0.67	0.67	2.00	0.67	0.67	1	1.33	4.01	0.80	0.09
(S8) Values and recognition of the organization in the canton	0.50	0.50	0.50	0.00	0.50	0.50	0.75	1	3.01	0.60	0.06
(S9) Accumulated experience and resilience capacity	0.17	0.17	0.17	0.50	0.17	0.17	0.25	0.33	1	0.20	0.02
(S10) Transparency and accountability	0.83	0.83	0.83	2.50	0.83	0.83	1.25	1.66	5.01	1	0.11

Table 6. Comparison Matrix of Weaknesses Group for CACP

Weakness	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	WW
(W1) Improving the competitiveness of agricultural food product prices	1	0.67	0.80	1.00	0.80	1.00	0.67	0.80	0.67	0.67	0.08
(W2) Lack of own facilities and installed capacity for growth of the Fair	1.50	1	1.20	1.50	1.20	1.50	1.00	1.20	1.00	1.00	0.12
(W3) Lack of stable agreements and control with fairground workers affiliated with the organization	1.25	0.83	1	1.25	1.00	1.25	0.83	1.00	0.83	0.83	0.10
(W4) Lack of staff to undertake new projects	1.00	0.67	0.80	1	0.80	1.00	0.67	0.80	0.67	0.67	0.08
(W5) Lack of operational plans, strategies and effective implementation of control and oversight	1.25	0.83	1.00	1.25	1	1.25	0.83	1.00	0.83	0.83	0.10
(W6) Lack of innovation and the use of technologies	1.00	0.67	0.80	1.00	0.80	1	0.67	0.80	0.67	0.67	0.08
(W7) Legal dependence on agreements for the use of central facilities and fair spaces	1.50	1.00	1.20	1.50	1.20	1.50	1	1.20	1.00	1.00	0.12
(W8) Low investment capacity, very weak financial situation and high sales and administrative costs	1.25	0.83	1.00	0.00	1.00	1.25	0.83	1	0.83	0.83	0.09
(W9) Low level of evaluation and proposals for new projects	1.50	1.00	1.20	1.50	1.20	1.50	1.00	1.20	1	1.00	0.12
(W10) Low leverage capacity and access to credit	1.50	1.00	1.20	1.50	1.20	1.50	1.00	1.20	1.00	1	0.12

Table 7. Comparison Matrix of Opportunities Group for CACP.

Opportunities	O1	O2	O3	O4	O5	O6	O7	O8	O9	O10	WO
(O1) Agroecological innovation and climate-smart agriculture	1	1.00	1.00	1.33	1.00	1.33	2.00	2.00	1.00	4.00	0.13
(O2) Innovation in the use of ICT to improve the efficiency of organizations	1.00	1	1.00	1.33	1.00	1.33	2.00	2.00	1.00	4.00	0.13
(O3) Trend towards consumption of healthy and harmless products adapted to current trends and different market niches	1.00	1.00	1	1.33	1.00	1.33	2.00	2.00	1.00	4.00	0.13
(O4) Links with Plans, Programs and Projects of entities related to Rural Territorial Development	0.75	0.75	0.75	1	0.75	1.00	1.50	1.50	0.75	3.00	0.10
(O5) Innovation in mechanisms of association with input suppliers and producers	1.00	1.00	1.00	1.33	1	1.33	2.00	2.00	1.00	4.00	0.13
(O6) Forest carbon markets for climate change adaptation and mitigation	0.75	0.75	0.75	1.00	0.75	1	1.50	1.50	0.75	3.00	0.10
(O7) Development and linkages of the main productive activities of the canton	0.50	0.50	0.50	0.67	0.50	0.67	1	1.00	0.50	2.00	0.06
(O8) Partnership and cooperation mechanisms for innovation in organic agriculture and good agricultural and forestry practices	0.50	0.50	0.50	0.00	0.50	0.67	1.00	1	0.50	2.00	0.06
(09) Agreement with CNP to participate in supplying state institutions	1.00	1.00	1.00	1.33	1.00	1.33	2.00	2.00	1	4.00	0.13
(10) Needs for dissemination and transfer of technology to producers	0.25	0.25	0.25	0.33	0.25	0.33	0.50	0.50	0.25	1	0.03

Table 8. Comparison Matrix of Threats Group for the CACP.

Threats	T1	T2	T3	T4	T5	T6	T7	WT
(T1) Climate variability	1	1.33	2.00	4.00	1.00	4.00	1.33	0.24
(T2) Slowdown in the economy and decline in household consumption	0.75	1	1.50	3.00	0.75	3.00	1.00	0.18
(T3) Effects of global health problems affecting food security and the economy	0.50	0.67	1	2.00	0.50	2.00	0.67	0.12
(T4) Inflationary fluctuations and rising interest rates	0.25	0.33	0.50	1	0.25	1.00	0.33	0.06
(T5) Low level of association and participation of producers in the region	1.00	1.33	2.00	4.00	1	4.00	1.33	0.24
(T6) Decrease in obtaining resources from other institutions due to reduction in public spending	0.25	0.33	0.50	1.00	0.25	1	0.33	0.18
(T7) Organizational gaps in competitiveness in prices, efficiency and productive chains	0.75	1.00	1.50	3.00	0.75	3.00	1	0.00

Once the above was determined, by a long discuss and analysis made by de experts, four strategies were established for the subsequent evaluation of the factors. The first strategy is to venture into the commercialization of diversified agricultural products with added value, adapted to modern needs and oriented towards the national market and institutional supply. The second strategy is to venture into the offer of new products and advisory services in the forestry, agro-environmental and natural resource management fields. The third is the development of action plans and budgets focused on cost reduction, efficiency, quality of services and control and improvement of processes. And the fourth is to increase the capacity in the main service of renting spaces.

The evaluation of the strategies according to the factors of strengths, weaknesses, opportunities and threats is presented with their respective weights in table 9 below.

Table 9. Evaluating Strategies Using Weights According to Factors for CACP

Factor/Strategy	Streghts	Weakness	Opportunities	Threats	Average
Strategy 1	0,35	0,33	0,33	0,30	0.3261
Strategy 2	0,31	0,24	0,28	0,31	0.2862
Strategy 3	0,19	0,28	0,18	0,25	0.2250
Strategy 4	0,15	0,15	0,20	0,15	0.1625

Using the above weights, the strategies were selected considering the coverage percentages according to the multi-criteria decision using the average weight. Thus, the first strategy sums its value of 32.61%, the second 28.62%, the third 22.50% and the fourth 0.00% because it last was not selected. Therefore, the first three strategies obtained an acceptance category according to the implementation decision.

As for the master strategy for the period of analysis, it was established to venture into the marketing of diversified agricultural and forestry products and services, with added value, oriented towards the national market and institutional supply. This was achieved through an efficient planning and budgeting framework that covers 100% of the three integrated strategies.

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Table 10. Balanced Scorecard (BSC) for the Implementation of The CACP Strategy with A 5-Year Horizon.

Perspective	Strategic objective	Critical factors of success	Indicator	Year 1	Year 2	Year 3	Year 4	Year 5	Strategic initiative
Financial	Sales growth.	Environmental instability.	Annual growth rate.	5.0%	5.0%	5.0%	5.0%	5.0%	Pre-feasibility project for the collection center, marketing of value-added products and forestry/environmental advisory services.
	Increase profitability.	Environmental instability.	ROE.	14.0%	14.0%	14.0%	14.0%	14.0%	
			ROA.	12.0%	12.0%	12.0%	12.0%	12.0%	
	Increase organizational value.	Environmental instability.	Percentage increase.	4.0%	4.3%	4.3%	5.0%	5.0%	
	Involve the board of directors in financial analysis.	Consent of members of the board of directors.	Number of annual extraordinary sessions.	2.0	2.0	2.0	2.0	2.0	Half-yearly financial analysis of performance and evaluation of operational and commercial management with 4 financial statements per year.
		Knowledge of financial analysis.	Number of reports with observations and recommendations.	2.0	2.0	2.0	2.0	2.0	
	Develop annual operating plan (budget/monitoring).	Consent of members of the board of directors and administration.	Consolidation of the plan (budget for the following year).	100.0%	100.0%	100.0%	100.0%	100.0%	Annual operating plan (budget).
		Consent of members of the board of directors and administration.	(Compliance Activities / Total Activities) * 100.	100.0%	100.0%	100.0%	100.0%	100.0%	Monitoring annual operating plan (budget).
	Establish actions to reduce and maintain operating expenses.	Consent of members of the board of directors and administration.	Operating expenses percentage level.	70.0%	70.0%	70.0%	70.0%	70.0%	
Customers	Maximize satisfaction and loyalty.	Competitive pressure.	Degree of satisfaction.	80.0%	85.0%	90.0%	100.0%	100.0%	Satisfaction evaluation system.
	Strengthen image through digital media and social networks, improving sales and reach.	Dissemination of consumer information.	Percentage of real customers reached by these means.	15.0%	25.0%	40.0%	50.0%	50.0%	Communications and marketing plan.
	Database with information on affiliates	Affiliates agree to provide information.	(Successfully registered affiliates /	100.0%					Effective registration and control of affiliates.

	(economic, social and productive profile).		Total real affiliates) * 100					
	Database with information on producers and developers of forestry projects.	Availability of information and degree of reliability of files and records.	(Forest clients registered correctly / Total real and historical clients) * 100.	50.0%	100.0%				Effective registration and monitoring of clients for forestry project consulting.
	Strengthening image and repositioning.	Consumer information, potential customers and marketing.	Good reputation and recommendation of products and services offered.	70.0%	80.0%	80.0%	90.0%	90.0%	Communications and marketing plan.
Internal Processes.	Implement income and expenditure control software to efficiently obtain information.	Consent to efficient control and management of accounting information.	(Software implementation time / Scheduled time) * 100.	50.0%	100.0%				Annual operational plan and monitoring.
	Provisional work sessions planning for continuous improvement and development of new annual products and services.	Organizational consent for the planning and development of initiatives and projects.	Number of sessions with proposals for activities for the planning and development of the CACP / Total sessions formed) * 100.	100.0%	100.0%	100.0%	100.0%	100.0%	Innovative and diversified development plan.
	Formalize contractual relationship for use of facilities.	Consent of the partners.	Signed agreements for use of facilities.	100.0%	100.0%	100.0%	100.0%	100.0%	Annual operating plan with its respective budget.
Learning and growth.	Continuous improvement in administrative management.	Organizational consent aimed at continuous improvement of administrative capabilities.	Number of annual training sessions on application of knowledge.	3.0	2.0	2.0	1.0	1.0	Staff development and skills acquisition plan.
	Strengthening the environment through intelligent adaptation to change.		Number of proposed meetings on the application of knowledge in the intelligent organization / Total sessions held) * 100.	100.0%	100.0%	100.0%	100.0%	100.0%	Staff development and skills acquisition plan.

4.5 Strategic Action Plan

The balanced scorecard was obtained from the mission, vision and values of the CACP. Where, the mission is to be a trade organization that promotes rural development through different quality services and with high organizational values to agricultural producers of Puriscal and other cantons, to provide the appropriate tools so that agricultural and forestry producers can carry out their services, to offer advisory opportunities to face the difficulties imposed by the market and to identify new niches to ensure the survival, growth and profitability of the organization, counting on the commitment of human capital to promote the development of agriculture, with the constant search for market options and appropriate spaces for clients and users.

On the other hand, the vision is to be the reference organization that offers efficient solutions for the improvement of the agricultural, forestry, environmental sector, food security and the commercialization of Costa Rican agrobiodiversity products. All the above with the values of solidarity, excellence, professionalism, reliability, equality, commitment, responsibility and transparency.

Table 10 presents the BSC according to the four perspectives (financial, customers, internal processes and learning/growth) with their respective strategic objectives, critical success factors, indicators, strategic initiatives and their percentages of compliance over a 5-year horizon.

4.6 Economic impact of strategy implementation

A risk-free rate in dollars with a value of 4.57% was obtained, the country risk of Costa Rica at 8.35% and an expected market risk for businesses in dollars of 9.64% (Damodaran, 2023). Thus, through equation (2) a cost of capital of own resources for the rental business in dollars in Costa Rica of 16.00% is obtained. In addition, given an expected long-term inflation rate in Costa Rica of 6.00% and the expected dollar inflation rate at 4.00% (Banco Central de Costa Rica, 2023a), a cost of capital of own resources in local currency in Costa Rica was obtained through equation (3) of 18.09%.

By analysing the income statements from 2018 to 2022 and their projections until 2033, as well as the capital cost of own resources in local currency for Costa Rica of 18.09%, the present values of the CACP operating flow in local currency and in US dollars were determined in Table 5 with an exchange rate value of 579.47 colones per U.S. dollar as an average for January 2023 (Banco Central de Costa Rica, 2023b).

Table 11. Net Present Value (NPV) of operating cash flow in the scenario without strategy and with strategy in the CACP at a 10-year horizon.

NPV	Current scenario (without strategy)	Proposed scenario (with strategy)
Local currency (colones)	₡50 378 740.18	₡143 564 370.55
Dollars	$USD 86 939.39	$USD 247 751.31

In this way, in the scenario without the strategy, the results of the present value of the operating cash flow projected for a period of 10 years are obtained, acquiring a present value of 50 378 740.18 colones. On the contrary, if a scenario with the implementation of the

general strategy is considered, a higher positive net profit is obtained in the projection of the income statement from 2024 to 2033.

Likewise, through the proposed goals, a sustained sales growth of 5% would be achieved from 2024 to 2028 and a sustained growth of 10% from 2029 to 2033. The above is achieved through the planned strategic actions and a strategic goal of maintaining support expenses at a level of 70% with respect to income. Thus, a present value of positive operating flow with a value of 143 564 370.55 colones would be obtained in a period from 2024 to 2033.

Scientific production on economic assessments of the implementation of strategies in the agricultural sector is scarce. However, in other areas, a study on management accounting strategies applied to small and medium-sized companies, based on a literature review in Lima, showed positive financial results. In this study, the company American Textil S.A. managed to increase its sales, improve its gross profitability, decrease its operating expenses, and reduce its invested capital and cost of capital through the implementation, evaluation, and control of five proposed accounting strategies (Mite Albán, 2018).

Along the same lines, the results present in the design and implementation of the Balanced Scorecard (BSC) to improve business management in an ink manufacturing company in Lima, Peru were analysed. Where, among its projections, an increase in sales of 18%, an increase in profitability from 0.89% to 4.64% net margin, an increase in operational efficiency between 120% and 130% and an increase in the customer portfolio of 22% were obtained. Thus, by improving all areas of the organization, improvements in profitability margins were projected (Loayza, 2021).

Due to the above, improvements in the financial analysis of organizations that have implemented focused and targeted strategies were analysed, considering the implementation, evaluation and monitoring processes of said strategies. These organizations have adapted to the work areas, aligning their strategies with the mission, vision, objectives and business values. This comprehensive approach has generated positive results in profitability, improving operational efficiency and strengthening their position in the market. The ability to continuously adjust and evaluate strategies has allowed organizations to maximize their resources and take advantage of new opportunities, thus consolidating their sustainable growth and competitive advantage.

5. Conclusions

Currently, CACP's main businesses are based on the management of the Puriscal Producer Fair and on consulting services for the Payment for Environmental Services Program (PPSA). Competitive pressure is high, so it is seeking to improve with new projects and products.

In addition, the organization scored poorly on its ability to form strategic alliances and take advantage of consumer trends, indicating the need to improve in these areas. Internal performance is also rated as average to poor, with challenges in resource management, investment capacity and leverage, and a very weak financial situation.

On the other hand, the strategic profile was defined through the mission, vision and values to carry out a five-year plan, promoting a change in organizational culture and the exploration of new business opportunities. Thus, the selected strategy seeks sustainability through the diversification of products and services, improving liquidity and efficiency in planning and control of operations. Even so, it is important to implement strategies to improve the precision and transparency in management accounting, as well as constant monitoring of the financial situation.

The strategic plan allowed the preparation and adjustment of the CACP according to the changing conditions of the environment. However, it is essential to ensure optimal communication and awareness of the plan among members and collaborators, as well as the support of institutions linked to rural development and the social economy. In addition, it

was shown that there are differences and similarities in the strengths, opportunities, weaknesses and threats between the different Agricultural Centers. These differences were related to the specific characteristics of each organization and its strategic, operational, financial, human capital, innovation capabilities, among others.

Finally, there is a lack of studies that evaluate the implementation of business strategies in companies in the agricultural sector. However, studies were found that apply the same methodology in other sectors or through other methods, for example, management accounting strategies applied in the textile sector, business management in an ink factory, customer loyalty strategies in department stores, administrative management in the transport sector, management of business information systems through decision-making on new products, as well as supply management in cheese production and honey production.

For this reason, this study determined whether the implementation of strategies in an organization projects positive results for it in this area. This was done through an external, internal and financial analysis, concluding that the implementation of the strategy showed projections that indicate substantial improvements in financial and operational sustainability in the CACP.

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