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Experience of good practices

Improvement of the operational budget system for fishing industry activities

Perfeccionamiento del sistema de presupuestos operacionales para actividades de la industria pesquera

Melhoria do sistema orçamental operacional para as atividades da indústria pesqueira

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ABSTRACT

The operational budget systems are the set of processes and procedures that a company uses to plan, monitor and control its financial operations and performance, representing tools that allow companies to establish specific and measurable financial objectives for each area of the organization, as well as fundamental work instruments for strategic decision making and the identification of areas for improvement in the companies. The present study assumes this object of research, defining as general objective to improve the process of elaboration of the integral system of operational budgets

in the La Coloma Industrial Fishing Company, from the integration of the statistical system of accumulation, calculation and analysis of the entity's costs. The study used methods of theoretical and empirical levels in the stages of theoretical foundation, diagnosis and design of a work system that formally supported the process of construction of the operational budget program of the entity, presenting as main results the design of the system of activities aimed at strengthening the process of data collection, design of formats, definition of methods of projections of income and costs, analysis and interpretation of deviations, and training of personnel.

Keywords: operational budgets; costs; fishing activities; planning.

RESUMEN

Los sistemas de presupuestos operacionales son el conjunto de procesos y procedimientos que una empresa utiliza para planificar, monitorear y controlar sus operaciones financieras y su rendimiento, representando herramientas que permiten a las empresas establecer objetivos financieros específicos y medibles para cada área de la organización, así como instrumentos de trabajo fundamentales para la toma de decisiones estratégicas y la identificación de áreas de mejoras en las empresas. El presente estudio asume este objeto de investigación, definiendo como objetivo general perfeccionar el proceso de elaboración del sistema integral de presupuestos operacionales en la Empresa Pesquera Industrial La Coloma, desde la integración del sistema estadístico, de acumulación, cálculo y análisis de los costos de la entidad. El estudio empleó métodos de niveles teóricos y empíricos en las etapas de fundamentación teórica, diagnóstico y diseño de un sistema de trabajo que soportara formalmente el proceso de construcción del programa de presupuestos operacionales de la entidad, presentando como principales resultados el diseño del sistema de actividades orientado a fortalecer el proceso de recopilación de datos, de diseño de formatos, de definición de métodos de proyecciones de ingresos y costos, análisis e interpretación de desviaciones, y de capacitación del personal.

Palabras clave: presupuestos operacionales; costos; actividades pesqueras; planificación.

RESUMO

Os sistemas de orçamento operacional são o conjunto de processos e procedimentos que uma empresa utiliza para planejar, monitorar e controlar suas operações e desempenho financeiro. Representam ferramentas que permitem às empresas estabelecer objetivos financeiros específicos e mensuráveis para cada área da organização, bem como instrumentos de trabalho fundamentais para a tomada de decisões estratégicas e a identificação de áreas de melhoria nas empresas. Este estudo aborda este objetivo de pesquisa, definindo como objetivo geral o aprimoramento do processo de desenvolvimento do sistema de orçamento operacional integral da Empresa Pesqueira Industrial La Coloma, por meio da integração do sistema estatístico, de acumulação, de cálculo e de análise dos custos da entidade. O estudo empregou métodos teóricos e empíricos nas etapas de fundamentação teórica, diagnóstico e desenho de um sistema de trabalho que suportasse formalmente o processo de construção do programa orçamentário operacional da entidade. Os principais resultados foram o desenho de um sistema de atividades que visa fortalecer o processo de coleta de dados, o desenho de formatos, a definição de métodos de projeção de receitas e custos, a análise e interpretação de desvios e a capacitação de pessoal.

Palavras-chave: orçamentos operacionais; custos; atividades pesqueiras; planejamento.

INTRODUCTION

Contemporary budgeting systems operate as dynamic financial governance tools, integrating artificial intelligence for strategic planning, real-time cost control and operational performance evaluation, generally related to core business activities. These systems allow setting precise financial objectives through predictive models, optimizing resource allocation under uncertainty and monitoring deviations with integrated efficiency indicators, ensuring alignment between organizational goals and daily operational execution; in addition, these tools optimize the allocation of financial resources, identify critical areas for improvement through performance indicators and support strategic decisions to adapt to volatile competitive environments (Quiroz Zambrano & Gómez García, 2024).

Budgets must comply with essential characteristics among which stand out that they must serve as a tool for forecasting and calculating variables and amounts, and must be constructed taking into account the cost-benefit principle, being a tool susceptible to continuous revision and changes,

requiring high flexibility, the reliability of its data must be supported by monetary and non-monetary arguments, they must have a participatory approach and must be assumed and accepted by all parties involved.

The budget system constitutes a fundamental managerial tool for financial and operational management, facilitating the establishment of strategic objectives, advanced cost control and the optimization of decision-making processes, transcending its traditional accounting function to become an instrument of dynamic governance (Moreno Nasimba, 2022). In administrative processes, integrated financial planning systems are fundamental tools for minimizing operational risks, ensuring that activities remain within the defined strategic limits and facilitating the periodic review of corporate policies. These systems make it possible to quantify corporate actions financially, project income and expense flows accurately and evaluate operating efficiency through dynamic indicators, establishing a strategic link between resources and results and proving to be an economic stabilizer in a context of political volatility and financial scarcity.

La Coloma Industrial Fishing Company (EPICOL), located south of Pinar del Rio and located in the La Coloma Popular Council of the municipality of Pinar del Rio, has as its mission the capture of platform species such as lobster, tuna and scales among others, as well as its industrial processing for the commercialization of its productions in export operations, domestic market in foreign currency, as well as wholesale and retail within the national market, developing an exploratory analysis of the subsystem of costs and the short-term planning system of the entity, allowing to identify limitations associated with this basic function of its administrative structure:

1. Projections that could be associated with optimistic criteria.
2. Integrated management system of operational budgets lacking fundamental cost and expense elements.
3. Historical information associated with budgets by Basic Economic Unit is not valued in a structured manner.
4. Coefficient of planned indirect expenses outside the parameters established to determine cost variations in the industry.
5. Private economic technical plan of information for the projection of production costs and financial statements.

6. No contingency funds are foreseen generating stress in several of the main elements of costs and expenses associated with processes, functions of the extractive and industrial activities.
7. The absence of unified schedules delays the delivery of data between Extractive and Industrial Base Business Units (UEB), generating lags in production budgets.

These weaknesses allow identifying the existence of a general contradiction between the current state and the desired state in the design of the operational budget system of La Coloma Industrial Fishing Company, allowing to define as general objective of the study to improve the process of elaboration of the integral system of operational budgets in La Coloma Industrial Fishing Company, from the integration of the statistical system, of accumulation, calculation and analysis of the entity's costs.

MATERIALS AND METHODS

The research assumes for its development general methods of the theoretical and empirical level, in order to characterize, develop and deepen in the essential particularities of the research object.

The theoretical methods applied were:

Historical-logical: allowing the study of the historical trends of management accounting, as well as the analysis of the evolution of the systems of activities associated with the construction of operational budgets.

Systemic-structural: used to conceive the structural components and the dynamic relations of the object under investigation, from the functional determination of the operational budgets and their dynamic relations, serving as a reference for the definition of the structure associated to the designed procedure and its main methodological activities, allowing to establish the characteristics that support the flows associated to its information systems between UEBs extractive, assurance, industrial, functional and support directions and subsidiary companies.

The logical procedures assumed in the study were analysis-synthesis, abstraction, induction and deduction.

The empirical methods applied were:

The documentary review that includes the cost system of the company and its manual of instructions and procedures, cost sheets, financial statements and budgets by addresses and UEBs; based on resolution No. 235 and 294, as well as the standard No 12 Management Cost that establishes a guide for the elaboration of operational budgets, from the management of the fundamental elements of the cost and expenses derived from fishing, industrial and support activities in the entity.

Participatory observation made it possible to verify, through direct and systematic perception, the current status of the company's operational budgeting process.

The surveys were directed to the professionals of the accounting sciences of the La Coloma Industrial Fishing Company, used with the objective of characterizing the current state of the object of study, and the interviews to the managers of the La Coloma Industrial Fishing Company and to the professionals of the accounting sciences who participate directly and indirectly in the processes of elaboration of the financial planning system of the entity.

RESULTS AND DISCUSSION

Business planning is an essential function for improving the competitiveness of companies. By contributing to the anticipation of market trends and the maintenance of competitive advantages, it transcends the mere forecasting of resources and becomes a nervous organizational system that anticipates critical scenarios (Zhurbenko et al., 2023); this function makes use of instruments developed from management accounting, also known as management accounting or administrative accounting, representing a discipline oriented to the development of critical drivers of sustainable value creation, articulating financial and operational metrics. It is a branch of the economic sciences that transcends the mere financial record to become the circulatory system of business intelligence, projecting impacts in strategic, operational and future dimensions (Llumiquinga Toaquiza et al., 2025); generating tools that support planning and control processes, designing reports for performance evaluation, building relevant financial information that helps managers to make informed decisions on investments, costs and prices, making accurate financial forecasts, estimating the future performance of the company, controlling costs, and optimizing business efficiency.

These factors enable management accounting to function as the central nervous system of modern organizations. By integrating financial and operational data, transcending its traditional role of recording to become a modern ecosystem that feeds planning, control and decision making, from

the predictive data processing, adaptive plasticity and integration of corporate governance processes (Barreto et al., 2025). Currently, its evolution towards predictive and prescriptive models has redefined its essence, not limiting itself to diagnose problems, but orienting its focus towards the anticipation of scenarios, optimization of resources and transformation of economic, environmental and social data into routes of action for efficiency (Johri et al., 2024), confirming that management accounting operates as a critical point between theory and operational practice, operating as mechanisms of strategic translation that materializes environmental and social commitments in protocols of economic and financial measurement (De La Rosa Leal, 2022).

For the durability of contemporary organizations, strategic planning emerges as an indispensable mechanism in the management of dynamic environments, promoting their long-term sustainability and competitiveness (Sandoval Trujillo et al., 2025), with operational budgets being integrated systems that optimize organizational efficiency and facilitate decision making, providing a structured framework for resource allocation and performance monitoring, manifesting itself in critical dimensions associated with management control, alignment with strategic objectives and financial sustainability (Salinas Esteban, 2022); These instruments contribute decisively to strategic management through the dynamic optimization of resources by means of predictive algorithms, the early detection of critical deviations and the generation of sectorial competitive intelligence (Abu-Matar, 2025), using as main elements for their design the company's objectives and goals, the historical series of its main expense elements, technical standards of industrial processes, projections associated with the market, production costs, operating expenses for different levels of activity, cash flows and alternative scenarios, finding among the main challenges that converge in the development of these projections the need to align tactical planning and corporate objectives; to manage the emergence of external disruptors, as well as to strengthen their financial estimates from the introduction of tools derived from the global digital transformation processes (Señalin Morales et al., 2020).

The theoretical-conceptual elements incorporated in the assumed methodology allowed developing an approach to the background of budgets, general concepts of planning and business budgets, characteristics and importance of budgets, objectives of budgets, their advantages and limitations and classifications, to later conceptually define master budgets and their characteristics, as well as the distribution of their different operational budgets and importance. These elements favor the structuring of a system of activities that contribute in a derivative way to the foundation of the

theoretical-methodological and historical aspects related to the operational planning process of the enterprises, to the development of a diagnosis of the existing situation in the construction of the operational budgets of the La Coloma Industrial Fishing Company, allowing to establish as final result of the study the improvement of this system of business planning in the short term from the identified insufficiencies and the theoretical premises that support the elaboration of these basic tools in management accounting.

The study developed is based on assessing the current situation of the planning system of La Coloma Industrial Fishing Company, a leading company in the processing of fishery products in the country and with an important technical, technological and marketing infrastructure, using primary and secondary sources of information to identify its main regularities, as well as possible deficiencies or shortcomings in the process of preparing its budgets and projected financial statements. For this purpose, the methodology developed by Vallejos Díaz (2008) was applied; this methodology is based on two sections, the first one oriented to the characterization of a cost system or its fundamental components, and the second one oriented to establish a system of activities that contribute to the improvement of its tools and basic work systems. The first section is divided into 4 stages:

1. Determination of information needs.
2. Definition of information sources.
3. Design of the formats for information collection.
4. Data collection, analysis and processing of the information.

The main results associated with the application of the activities that make up the first section of the diagnostic methodology will be presented below.

Stage 1. Determination of information needs.

The information analyzed made it possible to establish regularities around the cost planning process of La Coloma Industrial Fishing Company, identifying its main information needs; for this purpose, the assessments of specialists and managers regarding the need to improve its operational budgets were taken into account, taking into consideration:

- Analysis of the behavior of expense standards.
- Historical series.

- Exploitation of installed capacity.
- Quantification of possible reduction measures to be applied.

Among the fundamental elements to be taken into account in EPICOL for the construction of its budgets were found the analysis of cost sheets, consumption norms, variations of the norms and consumption indexes in raw materials, materials, fuel and energy expenses, analysis of the salary budget, indirect expenses coefficients and projection of activity levels. Cost planning is carried out using the groupings of its three fundamental elements and makes the determination of unit costs and fundamental indicators at the level of each activity or area of responsibility feasible, taking as basic references the projections and accounting policies for the development of the business sector as of December 2020, associated with the improvement of the cost system, with the objective of implementing the Specific Accounting Standard No. 12 Management Accounting.

Stage 2. Definition of secondary information sources

In order to characterize the entity's budget system, primary and secondary sources of information are used, selected as part of the regulatory framework of the subsystem:

- The policies, standards and regularities for the development and implementation of cost systems.
- Specific Accounting Standard No. 12 Management Accounting.
- Cost Accounting Manual (Resolution No. 54/2005).
- Agreement No. 8301 of January 26, 2018, of the Council of Ministers, in its section One, numeral 8, establishes among the specific functions of this Ministry those of establishing the accounting and cost policies for all sectors of the economy and the governmental accounting system.

The results of the secondary information sources include data generated from primary sources derived from surveys and interviews. The interviews were conducted with the objective of knowing the main advances and limitations that exist in the national context for the management process of accounting policies associated with the design of operational budgets, and how these impact on the construction of the entity's budget system. 65% of the directors of the Extractive UEBs, Industry and Enterprise UEBs, as well as specialists of the provincial direction of Economy and Planning and apart

from the specialists and technicians of the functional directions of economy that participate in their planning processes, were interviewed.

Stage 3. Design of the formats for information gathering

The documentary analysis made it possible to define the main documents related to the study, allowing the definition of guidelines for the processes of elaboration and application of the surveys and interviews, which were designed from the following tasks:

- Determination of the objectives of the surveys and interviews.
- Elaboration of the questionnaire.
- Establishment of criteria for the selection of the sample to be applied.
- Application of the survey and interview.
- Evaluation of the information collected.

Taking into account the tasks described above, the individual interview guide to be applied and the questionnaire to be applied in the survey were designed as instruments to facilitate knowledge of the general knowledge in the company regarding the cost planning and analysis processes, their importance, considerations regarding cost management in the company by interviewees and respondents, main limitations or weaknesses of the cost and expense planning process and what could be the main aspects to be improved.

Stage 4. Data collection, analysis and processing of information.

Analysis of primary information sources

For the application of surveys and interviews directed to managers, specialists and technicians of the company and base units, it was considered necessary that respondents and interviewees meet a series of criteria:

- Experience of at least 4 years in management, economics or participation in planning or costing processes.
- Have decision-making capacity on behalf of their entity, or in the processes of accumulation of costs and construction of the entity's main planning instruments.
- Willingness, commitment and honesty.

- Communication and participative leadership skills.
- Representing different levels of subordination.

Based on these selection criteria, the composition of the personnel to be interviewed and surveyed is analyzed. In addition, a relevant part of the decision-makers linked to the object of research are represented. The surveys were applied to 24 workers, with work experience ranging from 6 to 30 years, and a reliability analysis was carried out using Minitab 17 software. The main results showed that 75 % of the respondents had some knowledge of the processes of planning, calculation and analysis of costs, 95.83 % of the respondents consider that an adequate planning and analysis of costs represents an essential element for the long-term success of the entity, that it would be convenient in a process of improvement of its basic administrative processes and that, therefore, the integral design of a master budget system would be a significant element in the strengthening of its management processes.

Question 5 associated to the surveys and interviews has an open character, which allows defining areas for improvement within the business planning system, highlighting that their financial plan is not disaggregated from operational budgets and activity levels, there is no separation between fixed and variable, direct and indirect costs, and there is no schedule for the review of budget variations within the boards of directors, Similar results project the results of the management surveys, which ultimately support the relevance that an improvement of the cost and expense planning system would bring to the business decision-making processes by strengthening the analysis associated with the variation in efficiency, volume and price of its cost elements.

Analysis of secondary information sources

The analysis of the secondary information sources is oriented to know the regularities of the procedure for the management of accounting policies associated to the planning system of La Coloma Industrial Fishing Company, which take as reference for their construction cost elements that support the obtaining of the projected activity levels (raw materials and materials, fundamental and auxiliary materials, wear and tear, maintenance expenses, fuel and lubricants, energy, personnel expenses, obligations, depreciation and amortization, maintenance expenses, clothing and footwear, other monetary expenses and transfers).

The guidelines for the planning of the entity's business costs are established through the cooperation of its functional directions, contributing the documentation of each process to the planning area, which provides a perception of the operating performance observed in recent periods and allows the economic management to identify trends and recognize opportunities that influence the results and that are relevant variables in the entity's annual plan, which is structured in three base models:

1. Income and Expense Balance Sheet

This model is planned for the next year, starting in the second half of the base year, and its objective is to define the company's financial and results indicators. The body of the model used for the preparation of the plan is composed of 15 rows that are organized in indicators, accounts and sub-accounts, establishing from row 4 to column 15 the proposed amounts for the 12 months of the year of:

- Total income: sales, production sales, other income and other.
- Total expenses: cost of sales, general and administrative expenses, distribution and selling expenses and financial expenses.
- Variance between actual and predetermined cost and other expenses
- Profit or loss for the period

2. Cost of production and merchandise sold

The methodology used by the entity plans its costs for the coming year starting in the second half of the base year and projects expenses by items derived from its production flows, optimization programs and historical analysis, consisting of 15 columns:

- Row 1: items to plan.
- Row 2: units of measure.
- Row 3: proposal for the planned year.
- From row 4 to row 15 are the projections for the 12 months.

The fundamental control elements are those on which the rows of the model are structured: raw materials and materials, fuels, energy, total consumption, material, salaries, other taxes, fees and contributions, depreciation and amortization, and other monetary expenses.

3. Employment and income

The last base model within the cost planning system at La Coloma Industrial Fishing Company aims to evaluate under the definition of standards the productivity of labor efficiency and effectiveness levels, which is structured by 16 rows: row 1: defines the code of the different accounts and indicators; row 2: establishes the system of indicators and accounts; row 3: defines the units of measurement in which the content of the model is expressed; row 4: establishes the proposal for the planned year; it is estimated from row 5 to 16 the disaggregated data for the 12 months of the year.

In the lines, the base indicators are established as value added, gross production, material expenditure, purchased services, labor productivity, average number of workers, wage fund, average monthly wage, and average wage - productivity correlation.

These elements in their analysis integrated to the interpretation of the results generated from the primary information sources allowed to establish limitations and weaknesses that would constitute base elements for their improvement process within the framework of the research objective, among which are the following:

1. Limitations in the documents that are part of the cost system file (updating of the master budget and journal entries for the accumulation and variation of costs).
2. The operational budgets were not adjusted to the entity's conditions in a context of monetary order and the integrated operational budget management system lacks information associated with EPICOL's cost system.
3. The cost sheets as a base instrument of the entity's planning system present insufficiencies in the distribution of conversion costs and in the definition of their coefficients per weight of direct salary.
4. Limitations in the design of the reports that establish the analysis of compliance with the plan and the causes of its deviations.
5. Economic technical plan lacked of information for the projection of some of the fundamental elements in the conformation of production costs and financial statements.

Proposal for the design of the operational budget system of La Coloma Industrial Fishing Company

The second section of the methodology developed in the research is divided into 4 stages that allow an organized and coherent work, presenting the main results associated with the redesign of the planning system of operational budgets of the entity, structuring an orderly framework for the establishment of a conception associated with the system of activities that structures the central segment of the research, being its fundamental stages:

1. Study and evaluation of the regulations in force.
2. Study of the technical-organizational and productive characteristics of the entity.
3. Analysis of the planning, recording, calculation and analysis of costs.
4. Redesign of subsystems.

Stage 1. Study and evaluation of current regulations

The process of improving the cost planning system started with the review of the main theoretical references and methodological bases that support the elaboration of the operational budget system, being the legal framework associated with the object of research defined from the diagnostic section of the study.

Stage 2. Study of the technical-organizational and productive characteristics.

La Coloma Industrial Fishing Company was created by Resolution 507 of the Ministry of Economy and Planning, dated October 9, 2001, subordinated to the PESCACUBA Business Group of the former Ministry of the Fishing Industry. It was approved as a company in Business Improvement by agreement 4603 of the Executive Committee of the Council of Ministers dated November 20, 2002, granting it Business Category I on February 12, 2002. In 2011, the Food Industry Business Group, which is currently part of the Fishing Group, was created to serve the organization's business system.

The structure of the company has been conceived as a network of Basic Business Units that interact with each other, contributing to the object and mission of the company, being formed by seven UEBs, 6 dedicated to the capture of lobster, tuna and scales, and one to industrial production. The Extractive UEBs are structured by three fishing fleets, made up of vessels used to catch species in high demand

in the international and domestic markets, which are deposited indistinctly in storage centers located in different fishing zones, which are then transferred for industrial processing and elaboration in the different production lines for subsequent distribution and marketing.

Stage 3. Analysis of the particularities of planning, recording, calculation and analysis of costs.

Planning and budgets have great relevance within the productive process of the entity, they combine people, processes and technologies, constituting an instrument of control and evaluation of the economic management of the organization. It should be analyzed periodically; for its formulation, a standard cost system is used, representing a starting point to establish the efficiency and effectiveness of its operations and to predetermine the indispensable expenses to obtain a given volume of production, as well as the unit and total costs of each product according to the assortment and level of activity, which allows the analysis of the behavior of expenses and predetermined costs. The definition of the main regularities of the cost system of the UEB Extractive "La Coloma" is determined from the system of activities used in the first section of the methodology, establishing the main regularities that guide the redesign of its short-term planning system.

Stage 4. Elaboration of the integral system of operational budgets

The core of the results associated with the research is framed in the design of guidelines that facilitate and strengthen the processes of construction of the entity's operational budgets. The construction of this system as a base result of the research starts from the limitations regarding the insufficient formal references for its elaboration, which generated inconsistencies in the evaluation processes of the financial and monetary resources that circulate in the organization's environment towards the solution of the basic needs in the fulfillment of its activity levels. The flow of information developed for the construction of this planning system is presented below, given its organizational structure and basic objectives of the entity in terms of its financial results and economic efficiency; the system of activities designed towards the development of budgets oriented towards the Extractive UEBs, the industrial activity and the rest of the general functions of the entity is structured.

Systems of operational budgets for Extractive UEBs

The productive operations system of La Coloma Industrial Fishing Company is based on the success generated by its operations in terms of catches and efficiency associated with its basic and support

processes. Within the framework of the research, a system of budgets associated with these activities is established, which ultimately contribute to reduce the failures that affect the projected volume of fishing campaigns and the quality of its operations, defining the need to develop 4 operational budgets linked to these specific activities:

- Extractive Budgets
- Direct Material Budgets
- Direct Labor Budgets
- Indirect Production Expenses Budgets

Production Budget in Extractive Units

The budget system designed for the extractive establishments has the objective of organizing the capture processes of the different species, these are based on their capture budget (lobster, bonito, flake, conch, cucumber, oyster and crab), being oriented to estimate their production plans by months, representing an essential element in the determination of the level of activity in which the entity could move for a fiscal year, being structured from the following system of columns and rows.

- Columns: species, catch indicators, units of measurement and months.
- Rows: species.

The basic elements for its construction are considered to be the adequate establishment of the level of inputs necessary for the expected level of activity (fuel, gear, nets, hooks); the structure of crews and indirect personnel, maintenance and repair programs for equipment and vessels, technical status, licenses and permits necessary for fishing activities and insurance to protect against possible eventualities, among other aspects. Critical variables associated with available biomass, yield per unit of effort, closed seasons, fishing systems, programmed fuel consumption, fuel availability, storage capacity, cold chains, catch quotas, environmental regulations, frequency of engine maintenance, useful life of fishing gear and availability of spare parts, among others, are considered.

Budget for Direct Extractive Material Consumption

The construction of this budget starts by defining the basis for estimating all the supplies that are delivered to the fishermen, given the characteristics of the fishing operations that make up each campaign. This budget was structured on the basis of 10 columns and 6 rows.

- Columns: indicators, units of measurement, species.
- Rows: indicators, units to be caught, direct material consumption norms, direct material required, unit cost of direct material, cost of direct material consumption.

The basic elements for its design were established as the inter-annual valuation of the levels of variations in prices, volume and efficiency, corrections derived from these deviations, breakdown of planned inputs by type of campaign, updating of prices based on data generated from the inventory subsystems, main ProPes offers, sector inflation and price variations throughout the year. In addition, an update of the technical standards defined by the fisheries operations department for fuel consumption per ton of catch, labor per ton of catch, storage capacity associated with the trips - ton ratio, maintenance standards in USD per ton, and the establishment of the discard ton - target ton ratio, It is advisable for the calculation of these standards to manage time series, update annual standards, use benchmarking techniques and establish training programs from the fisheries operations management to reduce man-hours by using more efficient fishing techniques.

Direct Labor Budget

The direct labor budget for extractive activities has the objective of planning the salary costs associated with the personnel directly involved in the fishing catch processes (fishermen, sailors, fishing technicians, among others), being a relevant instrument in the planning of human resources necessary for to carry out the catches efficiently, the budget being structured in the framework of the research by 7 columns and 10 rows:

- Columns: species, unit of measurement, total catches, hours, rate (including payments for results), and amount.
- Rows: species, lobster, bonito, state flake, commercial flake, conch, cucumber, oyster, crab and total.

For its preparation, the budget must take into account the composition of its crews, scale group, position, occupation, salary system and hours planned for catch levels from the reports defined by the human resources, economy, fishing operations, extractive and quality departments, taking into account the need to review hiring and training processes, the establishment of competitive salaries, safety and occupational health costs, continuously evaluating additional costs associated with bonuses, insurance and social benefits, performance and productivity, identifying opportunities for improvement, establishing review schemes that allow for continuous follow-up to identify deviations and design corrective measures.

Indirect Production Expenses Budgets

The indirect production expenses budget focuses on the breakdown of the expenses that support the extractive processes of the entity, which allows completing the production cost structure as a basis for establishing competitive sales prices and identifying possible areas for improvement, being structured for its construction in 4 columns and 11 rows:

- Columns: expense elements, salary, indirect expense rates or coefficients, amount.
- Rows: month, species, concepts, 110 000 raw materials and materials, 300 000 fuels and lubricants, element 400 000 energy, 500 000 salaries, 700 000 depreciation, amortization and wear and tear, 800 000 other monetary expenses or services with third parties, element 900 000 transfers to production.

Operational Budgets associated with UEB Industry - Functional and Support Divisions

The productive process associated to the entity's capture activities concludes with the transfer of the captured volumes to the industry for processing, storage and commercialization, which allows from the structure and composition of its functional and support activities to build an integral system of operational budgets that represents an essential element in the entity's planning process, establishing as a base indicator for its design the level of activities planned for the economic period based on expected production levels and the reference prices associated to the distribution levels in the different markets.

Sales budgets by cost centers

The sales budget focuses on evaluating factors associated with historical series and market trends to project future revenues, implying this concept the need to develop market research as a basis for the design of activity level projections. Its construction in the framework of the present study takes into account these criteria and is structured in its presentation by cost centers, coinciding in a very representative way with the products or assortments to be commercialized, distributed according to the following system of columns.

- Columns: products by cost centers, unit of measure of each product, quantities, sales price and amount.

An analysis of the fishery products market is taken into account for its preparation, identifying global trends in the fishery sector in Europe, China, and in the country, potential competitors, potential customers and growth opportunities, production capacity derived from the technical conditions of the base production lines of the UEB Industry, historical series of sales by customers, taking into account factors associated with seasonal conditions, closed seasons or unforeseen fluctuations in the capture processes by fleets and variations in demand, being necessary to integrate specialists from other directions, as well as the definition of a schedule that favors performance evaluation processes, updates and inventory rotations that reduce maintenance costs, refrigeration and the quality of productions with risks of perishability.

Industrial production budget

The production budget will be by definition the expression of the total units to be produced in the planned period according to the results obtained in the sales budget, showing the volumes of the different productions that are processed in the UEB, defining as base data for their construction:

- Sales per units
- Desired ending inventory
- Desired initial inventory

The financial expression associated to the table is: budgeted sales in units (+) Desired final inventory in units (-) Desired initial inventory in units, being referential aspects for its design the updating of

the costs of production under semiannual periods or in conditions that require it, the evaluation of the productive capacity and a cost and inventory control system.

Direct Material Budget

The direct material budget for the entity's industrial activity is relevant due to the implications that its materials and inputs have on the entity's production flow to guarantee the levels of activity foreseen for its functional processes. This instrument is made at the level of products and cost centers, being elaborated from data derived from the projected annual production and the technical standards defined for its different assortments, being able to estimate purchases from necessary stock levels of materials and unit prices updated from the inventory accounting subsystem and the most relevant purchase invoices and offers. The basic informative inputs for its elaboration are:

- Production budget
- Technical standards
- Unit purchase price

The base financial expression is defined as the multiplication of the direct materials required in units by the unit costs of direct material, assuming the entity does not work for annual budgets with final inventory, managing to market and distribute everything produced. The aspects to be taken into account for its preparation were the evaluation of technical standards and suppliers to ensure the quality of inputs and competitive prices, and the establishment of inventory controls to ensure their availability at the time they are required for the different production processes.

Direct Labor Budget of the Industrial Activity

The design of the direct labor budget of EPICOL's industrial activity is focused on the application of fundamental rules for the use of the labor force according to the productive cycle of its industrial processes, being closely related to the production budget. For its elaboration, concepts associated with basic salaries and the payment by results systems defined by the Human Resources Department of the entity (direct labor by hours, piecework payments) are taken into account, and the budget is disaggregated by cost center. To calculate the cost of direct labor, the time needed per unit of product according to the labor performed, the level of production capacity of each assortment line and the primary elements for its construction are taken into account:

- Production budget (units)
- Direct labor per unit
- Hourly rate (including the different concepts)

The following are defined as the fundamental financial expression associated with the budget: direct labor hours per unit per hourly rate, and the main aspects to be taken into account for its preparation are identified as a review in the event of variations in production activities, review of time standards in the event of changes in installed technology, variations derived from training programs, review of costs associated with wages and use of monthly data generated by the entity's control and follow-up systems.

Indirect Production Cost Budgets

The entity's indirect production cost budget estimates the expense levels of the different indirect resources to be projected to achieve the planned activity levels, so that each area of responsibility knows in advance the resources to be consumed and efficiency levels to be operated for elements of raw materials and materials, fuels, energy, salaries, vacations, depreciation and amortization, other monetary expenses and maintenance, using as its base financial expression:

- Direct labor by Indirect Production Overhead Coefficient.

Key elements in its construction are the adequate review of its accounting accumulation processes, variable and fixed distribution, comparison with cost standards according to technical norms, analysis of deviation levels, variations in prices and efficiency of the previous economic period, as well as the evolution of historical series in the determination of the coefficients of its aggregate elements and relation with the actual and projected activity levels.

General and Administrative Expense Budgets

The budget establishes the general and administrative expenses incurred to support the levels of activity foreseen in the productive cycle and for the entity's functional and support activities, being disaggregated by expense elements (raw materials and materials, fuel, energy, salary, vacations, depreciation and amortization, other monetary expenses, clothing and footwear) and by cost centers

(mainly associated to functional directions), projecting their annual amounts from the following financial expression:

- Salary obtained defined from the direct labor budget by Coefficient of general and administrative expenses.

The fundamental elements in its design are defined as its calculation, from the projected levels of activity, establishment of financial goals, consideration of external factors, implementation of control and follow-up systems, as well as review programs that allow adjusting them according to needs and changes in the business environment.

Distribution and Selling Expenses Budget

The distribution and selling expenses budget proposed for the company takes as reference expense elements involved in these activities (essentially salary, vacations, depreciation and amortization and other monetary expenses), assuming as base financial expression:

- Direct salary by distribution and selling expense ratios.

The basic considerations for its construction are the development of cost analysis related to the distribution and sale of fishery products, including transportation, storage, *packaging*, advertising, among others); updating of the relationship between sales expenses - sales *forecasting*, evaluation of distribution channels, process optimization and design of expense control and follow-up programs.

Financial Expense Budgets

The entity's financial expense budget establishes as basic criteria for its preparation: (1) the projection of sales by products and prices planned in the estimate of sales taxes projected for the period and the territorial contribution for local development, (2) projections associated with personal income as the taxable base for salary and corporate taxes (special social security contribution, personal income tax, social security contribution and tax for the use of the labor force); (3) contribution to the top corporate management body, (4) financial expenses derived from amortization schedules of loans for investments and working capital and lines of credit, and (5) financial expenses associated with interbank operations developed from the real time settlement

systems. These figures are taken into account in the estimation of these figures from the procedure designed:

- National economic and financial context and for the fishing sector.
- Analysis of operating and financial costs, fixed and variable.
- Clear associated financial goals, optimal financing structure, cash flows and projected cash budgets.
- Design of a financial expense control and tracking system.

Cost of sales budget

The production cost budget focuses on assigning costs to products and services based on activities, products and services, involving the allocation of costs to each stage that makes up a production flow, being built for the company from of each of the productions derived from the industrial processing of each species (lobster, tuna, flake, conch, cucumber, shaped, canned and crab), adding the fundamental elements of the projected cost in the different industrial processes of the entity within the projected economic period (direct material, direct labor and expenses associated to production). This takes into account the expected levels of initial and final inventory of production in process as a basis for the overall finished production, adding and subtracting initial and final inventories of finished production in the projection of their cost of sales, establishing as guidelines for the valuation of their figures:

1. Design of a cost of sales tracking and control system.
2. Changes in raw material prices, transportation costs, taxes and duties.
3. Detailed analysis of the competition and the market.

Budgeted income statement

The integral operational budget system designed for La Coloma Industrial Fishing Company concludes with the preparation of the budgeted income statement, which integrates the projections developed for the economic period being planned. It is structured taking as a reference the profit levels defined from the financial performance statements, starting from the planned sales for each product, minus its estimated sales costs, establishing a planned gross profit that minus general and administration expenses, distribution and sales expenses and financial expenses estimate the operational profit,

before interest and tax, before taxes and net profit as basic financial goals in the company's operational management, allowing to establish basic financial projections for the construction of a sensitivity analysis that estimates variations in profit levels from deviations in critical variables associated with movements in their levels of unit revenues, activity, as well as efficiency, volume or prices of the fundamental elements of the cost or expenses of their capture, industrial and support activities, also allowing to estimate the relative importance of these elements.

The design of operational budgets is an essential tool within the managerial accounting and planning processes of any economic unit, allowing the coordination of strategies, and generating financial expressions of an organization's goals in a forthcoming period. Operating budgets quantify management expectations in relation to activity levels, revenues, operational flows and changes in financial positions, ultimately contributing to communication between the functional and support structures of an entity, the establishment of benchmarks for the development of performance evaluations, facilitating learning, motivating managers and employees.

These elements also help define the relative importance of risks associated with fluctuations in the availability of fishery resources, dependence on imported inputs (fuel, spare parts, nets, and processing equipment), obsolete or poorly maintained machinery, risks of poor domestic transportation of perishable products, limited cold storage capacity, variable costs of inputs in the international market, reduced margins due to fixed or regulated prices in the domestic market, lack of foreign currency financing, dependence on centralized allocations, strict fishing regulations associated with catch quotas, non-compliance with environmental standards, hurricanes, floods, economic sanctions that limit exports, fluctuations in demand for shrimp or lobster exports, as well as lack of personnel qualified in modern fishing techniques or budget management, rigidity in decision-making, and low autonomy to adapt to sudden changes, among others.

The study developed was oriented to the design of a work system that facilitates the construction of the operational budget system for La Coloma Industrial Fishing Company, taking as a reference the characteristics of its organizational structure, the flows established in its information systems, the historical references generated from the statistical and financial series of the entity, and the updates of the standards associated to its productive processes.

To this end, the study developed activities aimed at projecting activity levels by assortment, taking into account catch plans, industrial capacity, destinations and target markets, prices, contracted and

reference rates, as well as inflation levels associated with the fishing sector. The consumption norms for the extractive and industrial processes, the definition of prices for raw materials and fundamental inputs, and the time norms for direct salaries were updated as essential elements for the processes of distribution and allocation of expenses. The methodology used considered key fishing variables associated with resource availability, catches per unit of effort, oceanographic conditions, fuels per nautical mile per vessel, industrial yields associated with percentages of exploitation and wastage due to deterioration, electricity consumption in plants, rejects due to mishandling, quality standards associated to rejects due to mishandling, corrosion levels due to marine environment, spare parts availability, studies of load and capacity, expense coefficients by elements, increase in sales and seasonal demands, sanitary regulations and sustainability costs, among others.

The research also established procedures that would facilitate the updating of hourly rates, additional payments and payments by result or piecework, the definition of indirect cost value drivers, updating of indirect production cost coefficients for each aggregate element**,** general and administrative expenses, and distribution and sales expenses, definition of cash flows associated with financing activities, tax and interbank operations**,** estimation of financial results associated with capital repair and ordinary maintenance programs, the design of training programs, concluding with the presentation of models and reference elements for the construction of budgets based on the characteristics of the flows generated by the entity's information systems.

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Conflict of interest

Authors declare no conflict of interests.

Authors' contribution

Yailín Rodríguez Peña participated in the study design, data collection, analysis and interpretation of results and manuscript preparation.

Eduardo Rubén Espinosa Rodríguez participated in the study design, analysis and interpretation of results and manuscript preparation.

Reinaldo Castaño de Armas participated in the study design, data collection and interpretation of results.

Miladys Garrido Cervera y Gustavo Jesús Costales Barrera participated in data collection and interpretation of results.

All the authors reviewed the writing of the manuscript and approve the version finally submitted.