

Characterization of the Tax Conditions of the Palm Oil Sector in Villanueva (Casanare): A Case Study with a Balanced Scorecard Approach

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ABSTRACT

This research delves into the fiscal reality faced by the oil palm sector in Villanueva, Casanare. Rather than limiting ourselves to figures and financial statements, we combined direct fieldwork with a descriptive-correlational approach to better understand what is truly happening. As a methodological guide, we used the Balanced Scorecard (BSC), adapting it to the rural context to analyze how tax regulations interact with — and at times create tension within — the daily operations of these businesses. At its core, the study seeks to understand what genuinely drives tax compliance in an environment where state regulations do not always align with the productive dynamics of the countryside.

The findings show that, although producers formally comply with their tax obligations, this compliance has an important underlying nuance: it does not stem from a consolidated internal strategy, but largely depends on external accounting services that handle operational matters. In other words, regulations are met, yet tax management is not integrated as a core component of the business itself. We also identified a significant relationship between the level of administrative professionalization and the use of tax planning tools. Finally, through an international comparison with models from Malaysia and Indonesia, we conclude that reactive compliance predominates in Villanueva, consistent with the Slippery Slope framework. This reveals important gaps both in the effective use of tax incentives and in the development of a stronger institutional tax culture within the sector.

KEYWORDS: Balanced Scorecard, palm oil sector, tax compliance, tax planning, agro-industry; Colombia.

INTRODUCTION

Strengthening the tax culture in the productive sectors is key to ensuring fiscal sustainability and regional development, especially in emerging economies that depend on agribusiness. In these environments, complying with taxes is not only a matter of rules and sanctions: trust in the State, the perception of fairness and the organizational capacity of those who produce also have an influence. As the international literature has pointed out, compliance is not sustained solely by the fear of the fine, but by the legitimacy that taxpayers attribute to the system.

In the rural world, this reality becomes more complex. Many productive units operate with family structures and with low levels of administrative formalization, which creates a gap between what is required by law and what can actually be managed on a day-to-day basis. Informality not only generates disorder, but also limits access to tax benefits and incentives that could strengthen the producer. Therefore, talking about taxes in the countryside implies talking about fiscal governance: about how the State, the productive sector and the real capacities of the territory dialogue.

In Colombia, the tax framework – defined mainly by the Tax Statute and structurally reformed in 2016 – establishes clear obligations for individuals and companies. However, in the agro-industrial sector, effective enforcement depends less on the existence of the standard and more on the administrative capacity to implement it strategically. Although there is formal compliance, weaknesses persist in tax planning, accounting training and taking advantage of incentives.

Casanare, and in particular Villanueva, offer a privileged scenario to analyse these tensions, given the weight of oil palm in its economy. Despite its relevance, there are few studies that comprehensively examine how taxation is managed in these intermediate contexts, combining the normative dimension with the organizational and human dimension.

To address this gap, the study adopts the Balanced Scorecard (BSC) as an analysis tool, adapting it to the tax field. This perspective allows us to go beyond traditional financial indicators and understand tax management as part of the business strategy. More than verifying whether or not it is paid, the research seeks to understand how obligations are managed internally, what limitations exist and what opportunities are being lost due to lack of planning. Ultimately, a methodological route is proposed that can be replicated in other territories and contribute to fiscal governance in the Colombian countryside moving from discourse to evidence-based practice.

METHODOLOGY

To capture the reality of the palm oil sector in Villanueva (Casanare), we decided to approach the problem from a mixed approach. This commitment allowed us to cross the rigor of the numbers with the richness of the reality in the field, achieving an analysis that is both exploratory and descriptive. As Hernández-Sampieri et al. (2014) point out, the value of this integration is that it offers us a complete picture: not only do we stay on the surface of measurable variables, but we also delve into the beliefs and routines that define the behavior of producers.

In the qualitative field, direct contact was the key. We rely on on-site observation and interviews without a rigid script; these fluid conversations, under the premise of Taylor and Bogdan (2000), are the best way to unravel what is behind the taxpayer's behavior. It was this close dialogue that allowed us to see the nuances of the "know-how" and "thinking" of local actors, details that would never have appeared in a multiple-choice survey.

To give these findings statistical strength, the quantitative arm of the study was in charge of standardizing the information. We applied structured surveys that, following again Hernández-Sampieri et al. (2014), allowed us to organize the data in a way that was actionable and comparable, thus closing the circle between individual perception and the general trend of the sector.

The research had an exploratory and descriptive scope, insofar as it sought to approach a phenomenon that has been little studied in the regional context and to characterize the tax conditions of the sector without establishing causal relationships between the variables analyzed (Hernández Sampieri et al., 2014). The population under study was made up of palm growers located in the municipalities of the department of Casanare with productive activity in the cultivation of oil palm. Based on this population, the municipality of Villanueva was selected as

the unit of analysis, due to its relevance in terms of planted area and palm oil production, according to available sectoral information (Fedepalma, 2018).

The sample consisted of 50% of the palm growers in the municipality, selected through intentional sampling, according to criteria of accessibility and representativeness of the sector, a strategy commonly used in exploratory and field studies (Hernández Sampieri et al., 2014). Primary instruments were designed and applied for the collection of information, complemented by the review of secondary sources of a normative, institutional and statistical nature.

The analysis of tax conditions was structured in three methodological phases. In the first phase, the tax and fiscal regulations applicable to the palm oil sector were compiled and reviewed, as well as the academic literature related to tax culture and fiscal management in the agro-industrial sector. In the second phase, the information collection instruments were developed and applied, preceded by tax socialization activities aimed at the participants. In the third phase, the analysis and interpretation of the results obtained was carried out.

The Balanced Scorecard (BSC) model, developed by Kaplan and Norton (1996), was used as an evaluation and diagnostic tool, which allows the integration of indicators from different perspectives to evaluate organizational performance. In this research, the model was adapted to the analysis of the tax conditions of the palm oil sector, from the perspectives of regulations, business dynamics and tax behavior, facilitating the identification of strengths, weaknesses and opportunities for improvement in administrative, accounting and fiscal management.

The delimitation of the study population was carried out based on the identification of the municipalities of the department of Casanare with palm oil growing activity, considering variables such as planted area, harvested area and production volume. Although the municipality of Maní concentrates the largest proportion of planted area (45.57%), Villanueva was selected as the unit of analysis due to its strategic relevance in terms of business consolidation and productive dynamism within the departmental context (Table 1).

Table 1 Distribution of planted area, harvested area and oil palm production in municipalities of the department of Casanare

Municipality	Percent age	Planted area	Harvested area	Production
Villanueva	14,07%	10500	9900	39600
Yopal	1,27%	945	820	2460
Peanuts	45,57%	34000	14000	44800
St. Louis	0,23%	173	165	578
Tauramena	9,58%	7150	3500	13300
Hato Corozal	0,05%	40	15	45
Aguazul	2,81%	2100	1100	3080
Monterrey	1,29%	964	630	1890
Nunchía	1,00%	750	510	1734
Orocué	24,12%	18000	15000	51300
TOTAL	100%	74622	45640	158787

Source: Own elaboration based on Fedepalma (2018) and Statistical Information System of the Palm Sector (1997).

In order to facilitate the comparative visualization of the territorial distribution of oil palm cultivation in the department of Casanare, **Figure 1** presents the relationship between planted area, harvested area and production by municipality, evidencing the productive concentration in Maní and Orocué, as well as the strategic relevance of Villanueva in the departmental context.

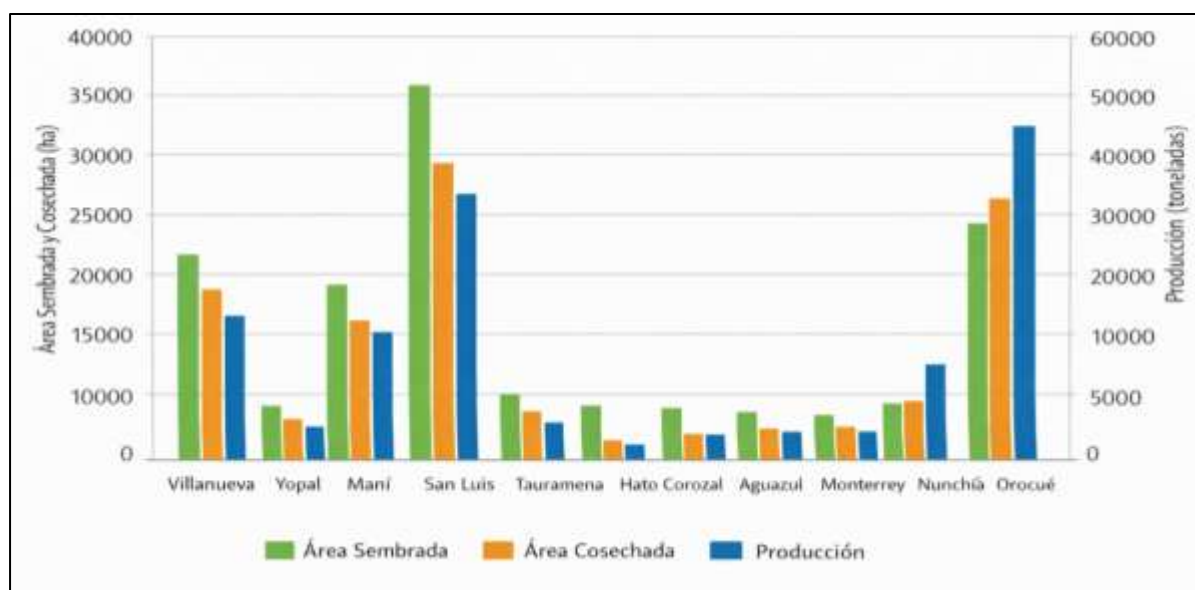


Figure 1. Distribution of the planted area, harvested area and production of oil palm in municipalities of the department of Casanare.

Source: Authors' elaboration based on sectoral data (1997; 2018)

To structure the empirical analysis, the main taxes and contributions applicable to the palm oil sector of the municipality of Villanueva were identified, taking into account the national, departmental and municipal levels.

Figure 2 summarizes the taxes considered in the study and constitutes the basis for the subsequent evaluation of the tax conditions of the sector.



Figure 2 Taxes identified for the palm oil sector of the municipality of Villanueva

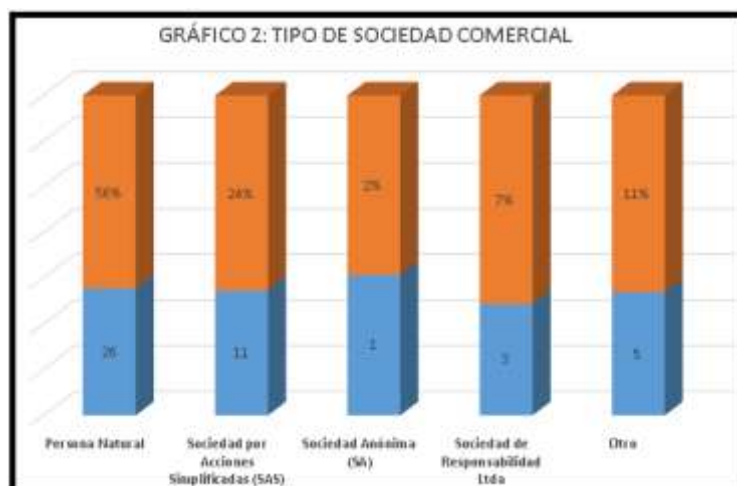
RESULTS

The results show that most palm growers recognize the tax obligations derived from their productive activity, such as income tax, sales tax and other territorial taxes, established in the Colombian fiscal system (Congress of the Republic of Colombia, 1989). However, regulatory knowledge does not always translate into strategic tax planning, which limits the use of incentives provided for in current legislation.

The analysis of the information collected allowed to characterize the tax conditions of the palm oil sector of the municipality of Villanueva, department of Casanare, based on variables associated with regulations, business dynamics and tax behavior. The results are presented in a descriptive way, supported by the instruments applied and the Balanced Scorecard (BSC) model.

In relation to regulatory aspects, it was identified that 67% of the surveyed palm growers are registered with the Chamber of Commerce, while 56% carry out their activity as natural persons, as can be seen in **Figure 3**.

Figure 3. Type of business company



Likewise, 39% recognize the National Tax and Customs Directorate (DIAN) as the main tax control entity, followed by other sectoral and territorial entities, as shown in **Figure 4**. Similarly, 87% said they were aware of the tax obligations derived from the palm oil activity, including income tax, sales tax, industry and commerce tax, property tax and the contribution to the Palmero Development Fund.

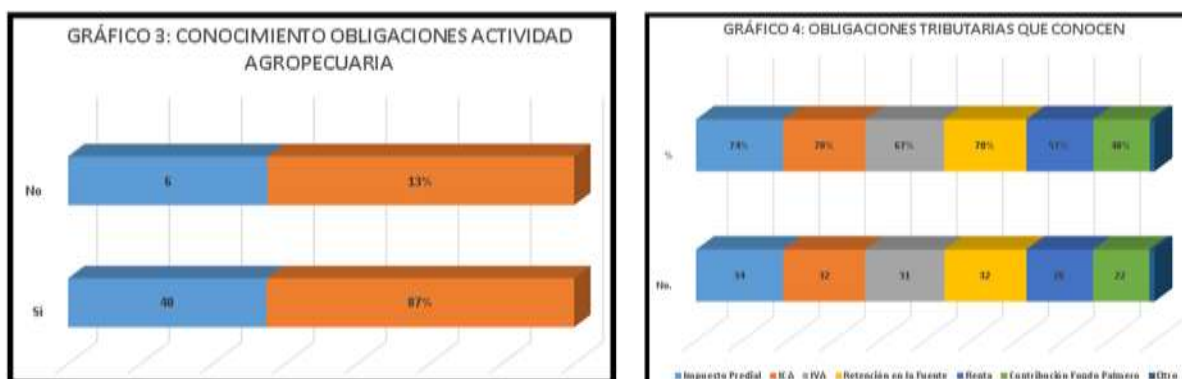


Figure 4 Obligations of the tax activity

Regarding business dynamics, the analysis showed that 46% of palm growers use some type of tool or information system to record their operations, while 61% do not have training programs aimed at their workers. This situation is related to the existing labor linkage schemes in the sector, where there is a limited formalization of employment and a low incorporation of personnel under stable modalities, as shown in **Figure 5**. Similarly, more than 50% of producers do not have staff or formal contracts other than the occasional provision of services.



Figure 5 Employee engagement

Regarding tax behavior, 80% of palm growers stated that they have accounting advice for compliance with their tax obligations. Knowledge of tax regulations was identified as the main factor influencing compliance with these obligations (65%), followed by the availability of financial resources in the administrative area. However, it was evident that 57% of those surveyed do not take advantage of tax benefits, despite the fact that these are provided for in current legislation, a situation illustrated in **Figure 6**.

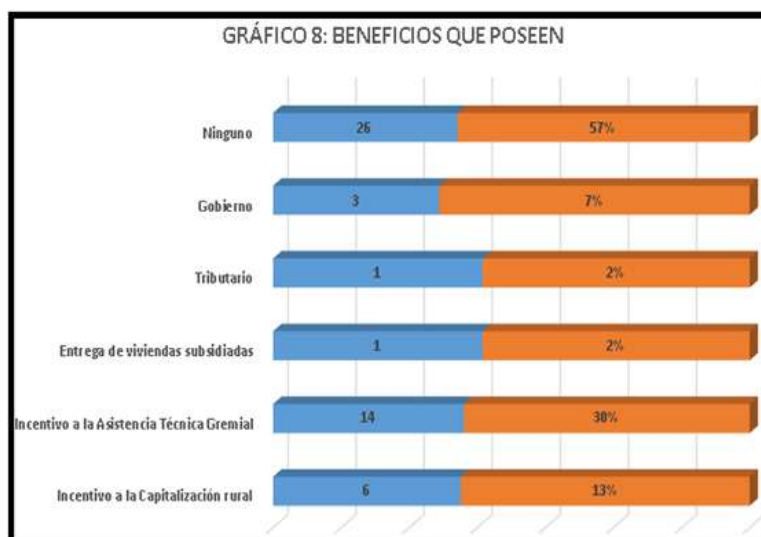


Figure 6 Benefits they possess

Additionally, the results show that palm growers carry out activities of a solidarity and social nature, such as donations and support to different sectors, although these practices are not always articulated with fiscal planning strategies. The activities carried out are presented in **Figure 7**, showing that, although there is participation in solidarity initiatives, there is still a lack of knowledge about the tax benefits associated with this type of investment.

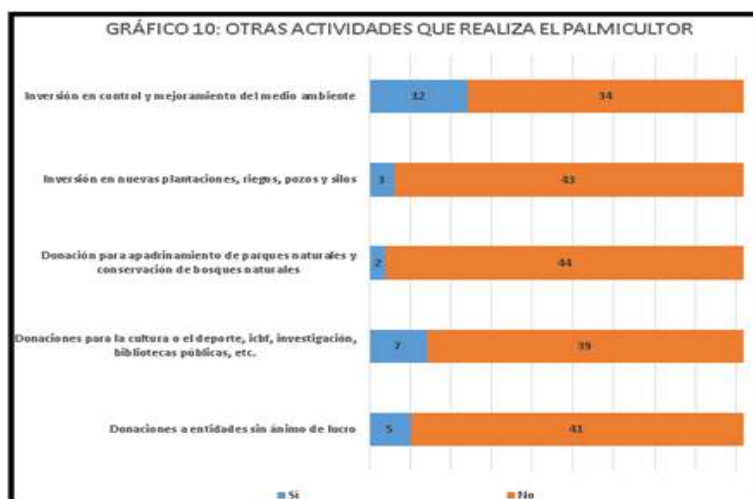


Figure 7 Activities carried out

Staff education

In Villanueva, most of the managers of the palm cultivation business are not professionals. According to **Figure 8**, only 28% of them have a professional degree. 56% of palm growers are natural persons who are not formally organized as commercial companies, they correspond to small agricultural producers who directly manage the productive activity.

Most workers in the palm oil sector have barely completed primary school (**Figure 8**). The few who completed high school are the direct labor of the crop and those who made a technique are among those who manage the specialized part of the crop, such as the planning of the cultural practices of the crop. On the professional side, there are administrators, accountants, engineers, who are part of the administrative body in each company (see **Figure 8**). The data indicate that the palm oil sector presents job opportunities at different levels of training.

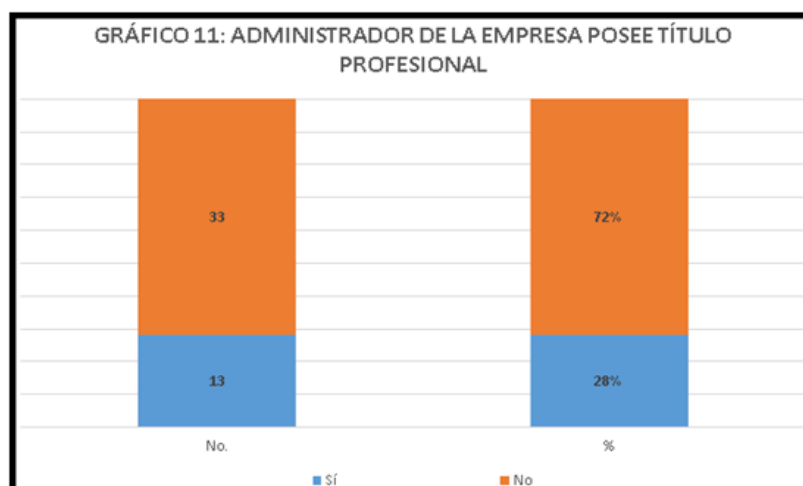


Figure 8 Professionalization

Factors that influence compliance with tax obligations

Knowledge of tax obligations, the accounting advice that companies can count on, the economy, the taxpayer's customs and the benefits granted by the public administration are factors that in some way influence this aspect, either directly or indirectly.

The data indicate that a significant proportion of palm growers report accounting practices aligned with current regulatory requirements, applying them in the different tax reports, declarations and presentation of tax information required by the State through the different control entities and leaving evidence of compliance with each of these reports by stating that most have not been required by these government entities. Additionally, they are aware of the penalties that come with non-compliance with each declaration or type of information that must be complied with, such as exogenous information, a mechanism used to verify the accounting movements of the economic facts that each business makes with the declarations filed, whether national, departmental or municipal. On the other hand, it is important to highlight the sense of solidarity that exists with the vulnerable population, regardless of the knowledge that palm growers have of the benefits that the contract of such personnel entails; however, if they had the advice of an accountant, they would be able to take advantage of the benefits of hiring this type of population in the tax returns and would be reflected in the profits in the income statements.

Synthesis of the characterization of the tax conditions of palm growers in the municipality of Villanueva (department of Casanare)

In order to observe more clearly the behavior of the variables analyzed in the research, Figure 9 and Table 2 show a summary, in which the traffic light technique is used to see the status of each of the variables according to the results found.












Figure 9 Balanced Score Card (BSC) methodology

The traffic light methodology or BSC is based on the behavior of the traffic light, in which each color indicates an alert: if it is red it indicates an unfavorable alert, if it is yellow it indicates a moderate situation with a tendency to become unfavorable and if it is green it indicates a favorable situation.

Table 2 Characterization of tax conditions under the Balance Score Card methodology

Outlook	Criteria	Predominant response	%	Management level
Regulations	Registration with the Chamber of Commerce	YES	67	
	Commercial Society	Natural person	57	
	Control Entities	DIAN	39	
	Obligations of the activity	YES	37	
	Benefits	None	57	

	Requirements	NO	76	
Business dynamics	Information tool or system	YES	46	
	Training Program	NO	61	
	Plant Staff	It has no	35	
	Personal OPS	It has no	61	
	Contractor Personnel	It has no	52	
	Tax behavior	Accounting Consultancies	YES	80
Factors for compliance with tax obligations		Knowledge	65	
Financial resources in the administrative area		Less than 30%	13	
Financial resources in the operational area		Between 31% and 60%	48	

Source: Authors' elaboration based on an applied survey (2024).

Next, the descriptive analysis of the traffic light or BSC methodology is carried out:

Perspective 1. Regulations: according to the traffic light methodology, regarding the first variable about the knowledge of tax regulations by palm growers, the results were favorable, where 72.10% of the surveyed population has a basic knowledge about the operation of the tax system because they belong to the palm growers' guild.

Perspective 2. Business dynamics: Regarding this variable, the results of the traffic light methodology affirm that the palm growers of Villanueva have a relative dynamic of 50.92%, which indicates that more work must be done, since it covers issues such as the training programs that companies provide to workers, the tools or business information systems and the way in which they are hiring personnel.

Perspective 3. Tax behavior: regarding tax behavior, the traffic light methodology shows an average balance of 51.60%, which indicates that the mission objectives of palm companies must be strengthened and an interest in knowing the treatment of the economic facts that arise on a daily basis is demonstrated, so that, in this way, it is possible to know what can influence when carrying out compliance with the tax regulation and thus give good treatment to the resources that are allocated to develop the activity of palm cultivation.

Inferential and Correlational Analysis

In order to validate the robustness of the findings and determine the interdependence between the dimensions of the Balanced Scorecard (BSC), a relationship analysis between the critical variables was performed in Villanueva.

Impact of Professionalization on Management: It was identified that the educational level of the administrator acts as a determinant in the adoption of technological tools. Although only 28% of managers have a professional degree, this group is more likely to implement information systems for the registration of transactions, which are used by 46% of the

sample. According to Kaplan and Norton (1996), this learning component is the engine that drives efficiency in internal processes.

Contradiction between Tax Advice and Tax Planning: A relevant finding is the disconnect between technical support and tax optimization. Although 80% of palm growers have accounting advice, 57% of those surveyed said they did not take advantage of any legal tax benefits. This phenomenon indicates that external advice in the region has a merely operational focus and compliance with formal duties before the National Tax and Customs Directorate (DIAN), lacking a vision of strategic fiscal planning.

Vulnerability according to Legal Structure: The predominance of natural persons (56%) over formalized companies correlates with the low availability of financial resources in the administrative area, reported by a significant proportion of the sample. This confirms that the lack of a robust business structure limits the ability of producers to manage fiscal risk and take advantage of the incentives provided for in Law 1819 of 2016.

DISCUSSION

The results obtained show that the palm oil sector of the municipality of Villanueva presents a relatively favorable level of formal compliance with its tax obligations, particularly in relation to commercial registration, accounting advice and recognition of applicable taxes. However, this compliance seems to respond more to a logic of basic regulatory obligation than to a comprehensive strategic management of taxation. This finding is consistent with the approaches of the "slippery slope framework" model, according to which tax compliance can be derived from both coercive authority and institutional trust (Kirchler, Hoelzl, & Wahl, 2008).

In the case analyzed, the high dependence on external accounting advice suggests that compliance is mediated by technical support rather than by full internalization of the tax culture. From the perspective of tax morale, authors such as Alm and Torgler (2011) argue that citizens comply more willingly when they trust institutions and perceive clear rules. In Villanueva's agriculture, this takes on a special nuance: as they are mostly family-owned and less formalized companies, the closeness to the norm is more emotional and trusting than purely bureaucratic. One of the most revealing points of this research is the lack of tax incentives. Palm growers make investments and donations that could reduce their tax burden, but they do not use them. This tells us that the problem is not the will to evade, but a management gap. As the OECD (2019) warns, low professionalization in the field limits the ability of producers to use the system to their advantage, turning taxation into a reactive exercise and not a tool for competitiveness.

By applying the model of Kaplan and Norton (1996), we were able to see what the cold figures do not show. While the normative perspective yields acceptable results (you pay what you owe), the dimensions of learning and internal processes are neglected. The fiscal sustainability of the sector does not depend on complying today, but on how the company organizes itself to manage its taxes strategically in the long term. Ferreira and Otley (2009) already warned: without internal articulation, financial performance is fragile. The findings suggest that requiring more standards is not the solution. To strengthen the tax culture in the palm oil sector, it is necessary to build bridges of trust and simplify procedures. The key is collaboration: if the unions, the State and the producers work to improve local administrative capacities, compliance will cease to be an imposed burden and become a natural and efficient practice. This study shows that in the agribusiness sector, tax compliance is a multidimensional phenomenon. It is not enough to look at the law or the

sanctions; You have to understand the organizational culture and the technical limitations of the producer. Although in Villanueva there is a stable compliance, this is "borrowed", since it depends on external operational advisors. The future challenge is for the palm grower to internalize this management, professionalize their administration and turn their tax obligations into a strategic advantage for their business.

This finding confirms that regulatory effectiveness depends on the administrative and organizational capacities of the productive actors. Contrast with the Palm Farming Sector in Malaysia and Indonesia.

The comprehensive characterization of the tax conditions in Villanueva allows the Colombian palm oil sector to be placed in a framework of global competitiveness against the powers of Southeast Asia.

In Malaysia, the palm industry has managed to integrate tax planning with sustainability certifications (MSPO), using tax incentives as levers for reinvestment in technology (OECD, 2019). In contrast, the results in Villanueva show a "reactive" compliance, where the regulatory knowledge identified in 72.10% of the population does not translate into an improvement in profitability through tax benefits, which are ignored by most local producers.

As in rural areas of Indonesia, in the municipality of Villanueva there is a critical gap in the professionalization of personnel, where the workforce with only basic primary education predominates. While Indonesia has implemented governance policies to strengthen tax morale in small producers (Torgler, 2007), in Villanueva there is still limited training aimed at workers (61% of the shortage), which affects the ability to internalize a true institutional tax culture.

The findings of this research validate the conceptual framework proposed by Kirchler et al. (2008), by demonstrating that compliance in the palm oil sector of Villanueva is mediated by the "power of authority" and external technical advice. To move towards "voluntary compliance", it is imperative to strengthen institutional trust and administrative professionalization, reducing the gap between the regulatory obligation and the strategic management of the rural enterprise (Alm & Torgler, 2011).

CONCLUSIONS

The case study in Villanueva (Casanare) made it possible to determine that the tax compliance of the palm oil sector responds mainly to a basic regulatory logic, supported by external accounting advice, rather than to internalized strategic management. Below are the final deductions from the research.

Operational Dependency: The high presence of external accounting advisors guarantees formal compliance with obligations such as income and VAT, but does not ensure tax planning that optimizes profitability through legal incentives.

Educational Obstacle: The low professionalization of managers and the limited training of workers constitute the main barrier to evolve from reactive to strategic compliance.

Structural Limitation: The predominance of the figure of natural person in small producers restricts access to robust business management tools, increasing vulnerability to regulatory changes.

Effectiveness of the BSC Model: The adaptation of the Balanced Scorecard proved to be a superior diagnostic tool to traditional financial indicators, allowing us to identify that fiscal sustainability depends directly on learning and internal organizational processes.

Towards Rural Governance: The strengthening of the tax culture in the palm oil sector requires an articulation between unions and the State that prioritizes technical training and administrative simplification to consolidate voluntary compliance.

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