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Research Article

The Market System of the National Olive Oil Sector: Situation and Possibilities for Improvement; Case of the JIJEL Region

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ABSTRACT

The enhancement of local resources in terms of quality and productivity has proven to be a highly beneficial approach. It enables the revitalization of local production systems by meeting the needs of the domestic market and leveraging international markets, where these products demonstrate strong competitiveness. This strategy has been a guiding principle for developed countries. In most Western nations, the agri-food systems were predominantly based on local resources. The "local terroir" supplied the majority of daily food consumption, and culinary traditions were built around this resource spectrum (Fischler, 1990). In France, three-quarters of the food consumed nationally is derived from the agri-food industry (Dedeire, 1997).

Keywords: derived, agri-food industry, predominantly

1.Introduction

Despite the opportunities presented by both domestic and international markets, the development of certain sectors remains hindered by significant weaknesses. Algeria, for example, possesses substantial potential that could enable it to achieve a leading position in international markets. Among these sectors is the olive oil industry, which is considered a strategic agri-food sector of great economic interest. This sector occupies approximately 32% of the national arboricultural area and contributes to supplying the domestic market with vegetable oil.

For decades, however, Algeria's olive oil sector has exhibited signs of crisis. A duality exists between a traditional system, which is less competitive due to geomorphological constraints (particularly in mountainous regions) and limited institutional support, and a modern system primarily focused on producing table olives (Hadjou et al., 2013).

To address this, a national program for the development of the olive oil sector was launched in 2000. This program aims to increase national olive oil production through annual plantations, the establishment of processing units, the creation of training institutes, and the development of new organizational frameworks for the activity. The implementation of these actions involves the active participation of local stakeholders in the valorization process.

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Despite efforts in plantation and the provision of technical and financial support, local production remains insufficient to meet the growing needs of local consumers, particularly for olive oil. This production shortfall is a limiting factor for expansion into international markets, where there is strong demand for olive oil. National production represents, on average, only 1% of global production.

The processing of olives, or olive milling, constitutes the most value-adding segment of the olive oil sector, transforming a generic product into a high-value-added specific product. However, the local olive oil industry is equipped with a significant number of processing units, with milling capacities far exceeding the natural supply capacity of regional olive farms. This mismatch has led to a decline in the operational rate of oil mills and the profitability of the activity (LachibiMoussa, 2019).

Meanwhile, this sector has undergone significant transformations across all producing countries by improving production and marketing systems to meet various consumer needs. Competitiveness has intensified among countries where the product enjoys preferences and significant trade advantages, such as bilateral and regional trade liberalization agreements, quotas, etc.

Research Problem

This study seeks to address the following question: Why is the local olive oil market system deficient, and what corrective measures can be implemented to enhance its competitiveness?

2.Methodology and Theoretical Framework

To examine the state of the local olive oil market system and the opportunities for its development, this study relies on the following methodological elements:

- A survey of 28 olive mill operators selected through a poll identifying the preferred mills by olive growers for processing their olives.

- Surveys and interviews with institutions and resource persons involved in the olive oil sector.

- A review of research related to the issues of the local and international olive oil sectors.

- Let me know if you'd like adjustments or further refinement.

Theoretical Framework

Market Mapping: Market mapping is a method that leads to the development of a "market map," a type of diagram that describes the entire market system for a given sector, including its actors and their relationships within the commercial and institutional environment in which they operate.

According to Albu M. and Griffith A. (2006), market mapping serves two main purposes:

1. It provides a framework for conceptualizing the commercial and institutional environment in which rural producers operate.
2. It is a practical tool for market facilitators to develop their knowledge, represent it visually, and communicate it in a concise manner to the various stakeholders involved.

The market map has two key objectives:

- For policymakers and rural development planners, it offers a conceptual structure for considering the commercial and institutional environment, especially when small-scale producers are less influential (including smallholder farmers).
- For practitioners, it is a potentially participatory tool that can be used to represent and communicate knowledge about specific producers, their market chains, institutional environments, and service needs.

The market map consists of three closely interconnected components:

1. The chain of actors and their links.

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2. The business environment and factors driving their activities.
3. Service providers.

A prior diagnostic, identifying the specific product and the different existing channels within the local market, is essential for effectively utilizing and leveraging the map. The reference map represents the ideal structure of a complete and mature market where all components are configured with the necessary functional links.

The general framework is illustrated in the diagram below, showing the relationships and characteristics of each channel in the market map.

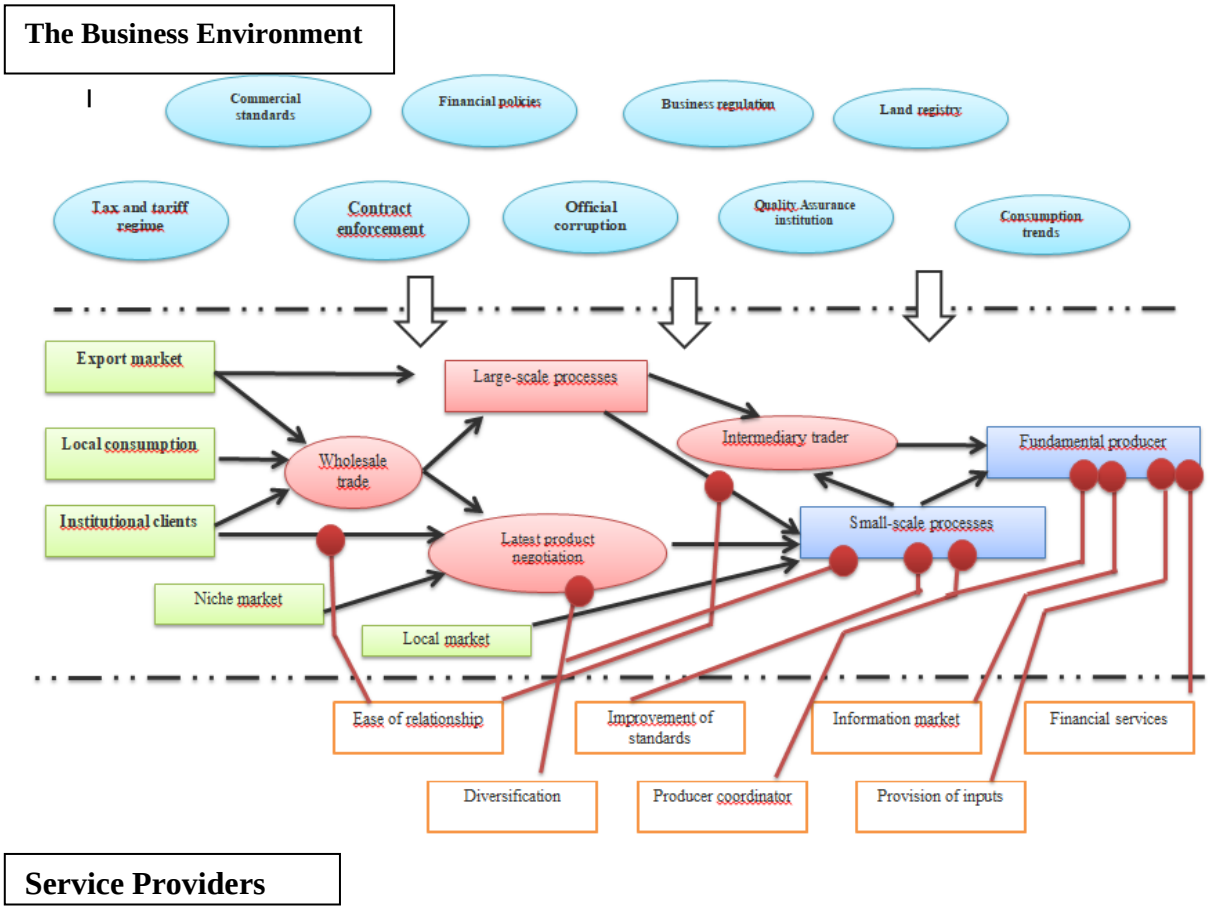

Figure No. 1: The Complete Mapping of a Market System for an Agricultural Sector

2.1The components of cartography:

2.1.1The Actors in the Market Map

The central component of the structure is built by mapping the economic actors who actually own and process a specific product and tracking how it moves through the market chain—from the primary producer to the final consumer. This includes small-scale farmers, large-scale producers, traders, processors, transporters, wholesalers, retailers, etc.

The objective, connected to this chain of actors, is to identify inefficiencies, inequalities, and losses that could be addressed or value additions that could particularly benefit small producers. While many markets are characterized by unequal relationships between actors, a clear objective of market mapping is to help stakeholders achieve mutual benefits by improving the "systemic efficiency" of the chain. The

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key lies in assisting stakeholders in better understanding the functions and processes of the chain necessary to meet the demands of the most profitable or reliable markets.

2.1.2The Business Environment

The second component of the Market Map is a diagram that identifies critical factors and trends shaping the market environment and operating conditions, which can also drive change. These "enabling business environments" consist of factors generated by structures and institutions beyond the direct control of economic actors in the market chain.

The purpose of mapping such an environment is to understand the trends affecting the entire market chain and to examine the forces and interests driving change. This knowledge can help identify realistic means and opportunities for action, lobbying, and policy-making aimed at entrepreneurship.

Transaction costs are often a dominant theme in ongoing rural economic policy initiatives. It is widely anticipated that agricultural productivity can be significantly enhanced through technological development, storage improvements, processing techniques, and investments in infrastructure (e.g., roads, electricity, irrigation).

In rural economies, transaction costs within market chains tend to be disadvantageous due to production diseconomies, the dispersion of cultivated plots, inaccessible legal systems, unclear property titles, and a generally low level of trust.

2.2 Key Factors in Agricultural Market Chains

ConcerningMarketDemand:

- Consumption trends (volumes, prices, and quality expectations).
- Taxes and tariffregimes.

ConcerningProcessingActivities:

- Infrastructure (constraints and investmentpolicies).
- Technological development (seeds, species, inputs, processing, etc.).
- Transport permissions and regulations.

Concerning Transaction Activities:

- Systems for agricultural financing.
- Types of liability in business and financial operations.
- Propertytitles.
- Commercial law and practices (including contract enforcement).
- Trade permissions and regulations.
- Production levels and quality assurance.

On the market map, the specific factors in question are identified based on their influence on market chain operations. They are recorded along the market chain itself. However, their characteristics allow the identification of issues that sometimes have a considerable impact on market chain operations and may even necessitate changes to the chain.

2.1.3 Service Providers

In most efficient market chains, the economic actors forming the chain (producing the primary product) are supported by inputs and services from other supporting businesses and organizations. Once a

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business is established, it requires immediate access to various types of services, markets, and technologies to grow and maintain its competitiveness.

The third component of the Market Map framework aims to identify and map the services that currently support or have the potential to support the "overall efficiency of the market chain." The range of services that can add value is potentially vast and includes:

- Inputs: wood, seeds, livestock, fertilizers, etc.
- Market information: prices, trends, buyers, suppliers.
- Financial services: such as credit, savings, or insurance.
- Transport services.
- Quality assurance: standards and accreditation.
- Technical expertise and advisory services.
- Support for product development and diversification.

Mapping these services involves identifying specific service needs and their positions in the market chain to gain a complete picture of opportunities for using services to enhance the chain's efficiency or fairness. This mapping is a prerequisite for evaluating the most appropriate mechanisms for service delivery in terms of accessibility, sustainability, and cost-effectiveness.

Strengthening support services necessarily involves creating institutions and structures, as well as improving their missions and responsiveness to better meet the needs expressed by market operators.

The Market Map, in its entirety, has proven to be an excellent tool for visually and succinctly representing specific market knowledge of actor chains, as well as the exploitation of contexts and needs by different stakeholders.

Given the importance of the transformation segment in sectors characterized by downstream activities involving raw material processing and marketing, conditioned by quality and packaging requirements, this segment constitutes the most critical stage in the product valorization process.

The general level of performance and valorization of the sector largely depends on the actors' performance level and their ability to capture and maintain market shares, either domestically or internationally, depending on their context.

2.2 Strategies of Actors

Today, the focus has shifted from comparative advantages to competitiveness. Griffon defines competitiveness as "the ability to offer a product with unit costs lower than the market price and those of competing sectors, in a sustainable manner."

Fraval (2000) adds that "in the context of African agricultural sectors, competitiveness refers to the ability of sector actors to develop strategies that enable them to capture and sustain market shares in the long term." Competitiveness can thus be measured by observing actors' ability to respond to price reductions at the international level and adapt to competition.

The concept of competitiveness is often associated with cash crops, but it is equally applicable to food sectors. For instance, cereal products in Africa face intense competition from imported food products.

This competitive nature of market transactions encourages actors to adopt appropriate strategies and behaviors to maintain and maximize their profits. Depending on the market conditions and opportunities, actors employ specific strategies, including:

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Internal Performance Improvements:

- Enhancing internal operations and work organization.
- Reducing production costs.
- Managingsupplychainseffectively.
- Efficient stock management.
- Maximizing profit margins.

External Performance Strategies:

- Securing raw material supplies of competitive quality and price by building trust-based relationships with suppliers. Diversifyingsuppliersalignswellwiththis goal.
- Establishing trust with raw material suppliers, including farmers, collectors, and industrialists.
- Ensuring the quality required by clients.
- Managing the portfolio of activities effectively.

2.3 Coordination Among Value Chain Actors

Coordination is a mechanism that enables value chain actors to achieve specific objectives in a competitive environment where competition is strongly focused on securing raw material supplies to ensure the continuity of operations. In this context, Jaffée (1992) developed a relevant model outlining suitable relationships for managing such activities within the value chain. This model proposes five forms of contractual arrangements:

1. Spot Market Integration: Coordination is ensured by price mechanisms. In this case, no specific contracts exist between actors.

2. Vertical Integration: This represents hierarchical coordination through upstream control. In addition, there are three intermediate forms:

- Mutual Reciprocal Agreement: Informal relationships guaranteed by trust and loyalty.

- Product-Specific Contractual Arrangement: Agreements concerning the nature, quality, location, and precise timing of delivery. Prices in this arrangement are set before or during the exchange.

- Input-Based Contractual Agreement: An arrangement where input supplies (e.g., raw materials, advisory services, credit) are provided under the condition that production delivery is guaranteed.

This model, particularly suited to value chains in developing countries, provides a comprehensive framework for understanding the various forms of coordination that enable an agent to secure the supplies necessary for their operations (Padilla &Bencharif, 2001).

3. Results and Discussion

3.1 Mapping the Market System for the Olive Oil Sector in Jijel Province

Achieving overall performance within the value chain segment requires efficient and effective optimization of the sector. Mapping the value chain of the olive oil sector allows for identifying and visualizing bottlenecks, inefficiencies, and potential relationships among the actors involved in the entire chain.

Through the survey conducted with processors and interviews with officials from various structures involved in the sector, we were able to map the olive oil market in Jijel province.

This market mapping for Jijel province is illustrated in the following figure.

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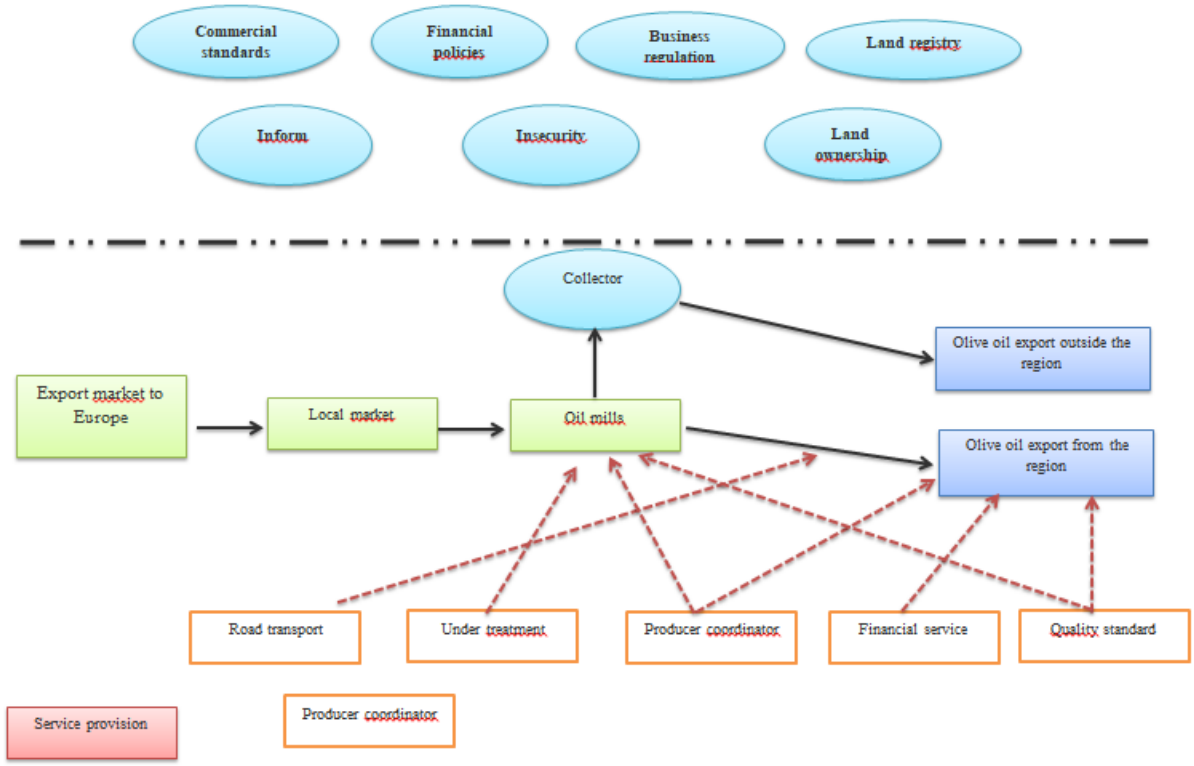

Figure n°2: state of the mapping of the olive market system in the wilaya of Jijel

It is evident that the development of the sector relies on improving the efficiency of the various operators. By mapping the olive oil market system in the Wilaya of Jijel, we identify the main factors hindering the advancement and overall development of the sector. After analyzing the key stakeholders involved in the activity, we proceed to assess the business environment and support services, two crucial components in organizing and enhancing the sector.

Situation of the local sector market system:

3.2 State of the Business Environment

The business environment consists of factors generated by structures and institutions that lie beyond the direct control of economic players in the market. These factors condition the development of value creation processes by different actors. For olive growers and oil producers in the Wilaya of Jijel, the business environment is characterized by:

1. **Potential actors lacking property titles**: These actors are mainly agricultural operators who distrust the property titles issued by the state, as these titles often do not grant them effective ownership but rather collective ownership. This is particularly the case for EACs (Collective Agricultural Exploitations), where individual shares remain undefined, leaving the land tenure they work on unsecured.
2. **Absence of a regulated olive market at the local level**, resulting in disruptions in the commercialization of oils, with prices being inconsistent and unstable.
3. **Weak cohesion among actors**, particularly within collectives such as agricultural cooperatives and professional associations. This results in a lack of consultation among themselves and with the relevant authorities to discuss and establish mechanisms that could address the sector's challenges.

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4. **Significant gaps in specialized structures responsible for quality control and compliance with olive oil standards**, leading to the commercialization of uncertified products without health guarantees. This constitutes a major obstacle to elevating local products to professional standards of recognition and certification.
5. **Lack of a regulatory framework for the establishment and distribution of oil mills across the region**, resulting in the proliferation of informally operating mills and an unbalanced distribution across territories.
6. **Deficiencies in organizations tasked with supporting the sector**, observed at multiple levels, including:

- Insufficient dissemination of good olive-growing practices, especially for newly introduced varieties, and a lack of knowledge about the quality of these varieties among olive growers.
- Absence of coordination mechanisms with technical institutes (ITAFV) and agricultural research institutions (INRAA) to improve quality and cultivation practices.

2.3 Support Services

With the development and increasing complexity of economic systems, services have become a key element in strengthening and ensuring the efficiency of market circuits. However, the needs of the olive oil production activity primarily include:

1. **Lack of after-sales services for firms selling equipment to oil mills** at the local or national level. Oil producers face difficulties in sourcing spare parts, often being forced to acquire them independently from neighboring countries, despite being unprepared for such efforts.
2. **Absence of an information system**, particularly regarding prices, global market trends, and all types of suppliers.
3. **Limited financial support from banks**, and when available, the cumbersome procedures significantly delay investments.
4. **Lack of training opportunities in research centers or technical training institutions**, particularly in grafting techniques, pruning, plant quality, processing techniques, and the specificities of olive oil products. These institutions should serve as repositories for preserving industry knowledge and expertise.

4. Findings on the Business Environment and Support Services

Through an analysis of the business environment and the state of support services, it is evident that many segments—key elements of the olive oil market—are underperforming and marked by deficiencies. These shortcomings hinder the completion of a market system capable of producing a high-quality sector.

5.Sustainability in the Activity: Perceptions

Although the development and enhancement of the local olive oil sector are highly dependent on the growth of the oil production segment, which serves as the driver of significant value addition, the socio-economic situations of individual oil producers vary. As such, their ability to adapt to the competitive environment differs. To understand their position regarding sustainability in the activity, oil producers were asked the following question:

How do you perceive continuity in the activity?

The responses to this question are presented in the following table:
Table No.01: Oil producers' perceptions of sustainability in the activity.

(Number of responses - Evaluation of sustainability)

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Number of responses	perceptions of sustainability
10	++
8	+
10	-

Source: Created by us based on survey data

++: Continuity

+: Uncertain continuity

-: Cessation of activity

Based on the statements from oil producers regarding their abilities and perceptions of continuing in the olive oil production activity, three positions were identified:

For continuity: These are oil producers who recorded the highest performance and profitability compared to others. They also have experience in the field, which grants them the ability to adapt to changing contexts, even with lower financial profitability. The investment in equipment and transportation means to ensure local or external olive supply signals their intention to remain in the business.

For uncertain continuity: These oil producers face some challenges but have alternatives outside the industry to secure their income. While they are not highly efficient, they face deficiencies in managing the olive campaign. Increased competition in the sector, particularly regarding services and investments in high-quality equipment, has jeopardized their ability to continue in the business.

For cessation of activity: This group of oil producers recorded low operating rates during the season and minimal financial profitability. They face management constraints related to human factors (age, education level), technical issues (obsolete equipment, lack of investment), and financial limitations (low profitability). Competitive strategies, particularly in olive supply and unfair practices, have made the activity unprofitable for them. As a result, some producers in these two latter groups have attempted to relocate their activities to regions with higher production, notably in the western parts of the country. Their main motivations were:

Ensuring olive supply for their new location.

Escaping local competition, as the olive production in the region has become insufficient to meet the needs of all the mills, while other regions have fewer mills.

Reducing crushing costs if the processing volume is high.

Staying in the activity.

Conclusion

The olive oil industry, primarily located in rural areas with high production, faces challenges that hinder its development. These include the lack of technical support, absence of a collective professional organization that ensures the general interest of all stakeholders in the sector by setting long-term goals aimed at the international market, which would provide significant opportunities and enhance the competitiveness of the entire industry.

Thus, the sector exhibits insufficiencies, gaps, and organizational shortcomings that hinder efforts and expectations for good valorization, similar to the market systems in developed countries, where the market plays a crucial role in elevating local products to high levels of valorization.

However, the presence of a substantial industrial fabric dedicated primarily to the valorization of a local agricultural product in rural areas is a valuable economic asset, addressing rural employment issues and fostering the economic dynamics of these regions.

The analysis of the market system of the local sector through market mapping reveals gaps and deficiencies within the system that hinder its fluidity and its role in regulating and developing the local sector, as seen in other global sectors. Key failures identified include: the absence of a regulated olive market, lack of coordination among stakeholders, weak organization, limited technical and financial support, and insufficient involvement of research institutes in the development process of the sector.

Despite the anomalies and under-valorization of the local olive oil sector, the existence of a natural potential and an olive oil industrial base suggests significant and prosperous development prospects. To this end, we offer the following orientations and suggestions aimed at improving the overall performance of the sector:

Orientations for Reorganizing the Sector

Given the current decline of the sector at almost all its stages, reorganization and quality improvement of each component of the supply chain are essential and represent the most appropriate means for the growth and development of the sector.

Thus, we propose a comprehensive valorization strategy that can mobilize all local capacities and potential, breaking away from negative practices that reduce the overall quality of the sector.

Upstream of the Sector:

Raise awareness among olive producers about the importance of implementing cultural practices to increase production.

Improve the density of olive groves to better utilize available land and increase yields per hectare.

Adopt an effective olive planting system, primarily based on the species' capacity to adapt to suitable agro-ecological stages, minimizing negative impacts of poorly planned plantations. This system ensures proper allocation of resources.

Create mechanisms to increase mechanization in cultural operations, leading to qualitative leaps in production.

Adopt a suitable densification system to increase the profitability of the currently very low potential.

Improve the quality of local species, particularly in terms of yield and shape, to facilitate exploitation.

Downstream of the Sector:

Redefine the organization of the olive oil industrial base to ensure proper distribution across the territory, creating rationality in the allocation of services, especially in marginalized areas.

Create a local olive oil market to enhance the performance of the transaction system.

Revitalize professional organizations related to the sector, placing greater emphasis on collective efforts aimed at product valorization.

Increase the level of support for oil producers, particularly in terms of technical assistance, by encouraging equipment manufacturers to establish local presence for spare parts and technical advice.

The research conducted to address the main research question, which primarily concerns the valorization of the local olive oil sector, used appropriate tools and methodologies. Several constraints and issues were raised, affecting and hindering the valorization process at all stages of the sector. These research avenues remain a contribution focused on identifying the best paths for increasing production and productivity. Further complementary research is necessary for better scientific support to the sector.

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