

The White Meat Sector: Management Reality and Strategies to Address Challenges – The Case of Algeria –

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Abstract:

The study aims to explain and analyze the current situation of the white meat sector in Algeria and its relationship with rural development, with a particular focus on identifying an appropriate strategy for its effective management. The research paper concludes with several findings, the most significant of which is that the white meat sector represents an important component of rural development and has experienced noticeable growth, as the state supports this sector through the enactment of laws and the implementation of strategic plans aimed at its development. The study also reveals fluctuations in the consumption prices of white meat.

attributable to several factors that are clearly explained within the study. Among the most important recommendations of the study is the need to give greater attention to poultry farming and to increase support for this sector in order to achieve sustainable rural development based on sound biological, environmental, and economic foundations.

Keywords: Poultry, White Meat, Strategy, Development.

Jel Classification Codes: Q13 ,Q19.

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I. INTRODUCTION

Through this study, we seek to address the issue of the development strategy of the white meat sector. Given that rural development is broad and encompasses multiple fields, the poultry sector was selected due to its importance as a primary component of consumption. Moreover, meat in its various forms constitutes a staple food demanded by different populations. Accordingly, this study analyzes the current situation of the white meat sector in Algeria, with particular emphasis on the challenges it faces, especially the fluctuations in prices during certain seasons of the year. This research paper is divided into two main sections. The first section presents general theoretical background information on the concept of white meat, while the second section examines the reality of the white meat sector in Algeria.

Within this framework, the study raises the following research problem:

How can the poultry sector in Algeria be evaluated, and what strategies contribute to its development?

This main question can be divided into the following sub-questions in order to facilitate the organization of the paper:

- What is the concept of white meat?
- How can the management of the white meat sector in Algeria be evaluated?
- What are the constraints faced by the poultry sector in Algeria, and are there proposed solutions?

In order to address this research problem, the study proposes the hypothesis that white meat consumption in Algeria exceeds the available supply, which constitutes the major weakness of the poultry sector in the country.

➤ Objectives of the Study:

To present general concepts related to white meat and the differences between white and red meat;

To analyze the meat industry in Algeria;

To identify the main shortcomings affecting the poultry sector in Algeria;

To examine the relationship between rural development and the white meat sector;

To analyze how the white meat sector is managed in Algeria.

➤ Scope of the study

- Algeria was selected as the case study to analyze rural development through the poultry sector.

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- The study focuses on data from the poultry sector since 2000.

1. The Concept and Characteristics of White Meat

1.1 The Concept of Meat

To define the concept of white meat, we start with a general definition of meat. Meat is one of the primary sources of animal protein in the human diet. It comes in several forms: red meat, white meat, and fish. Each type plays a specific role in human nutrition.

Meat is commonly understood as a group of animal tissues that can be used as food, or more precisely, animal tissues that undergo essential biochemical changes after death and become suitable for human consumption. There is no universally fixed definition of meat, but it is sometimes defined as tissues or parts from mammals (e.g., cattle, sheep), poultry (e.g., chickens, ducks, geese, turkeys, rabbits, ostriches, quails), game birds that humans commonly eat, or marine animals (e.g., fish and crustaceans), provided they are of an appropriate age, disease-free, and safe for human consumption.

Meat can also be defined as the edible parts of an animal after skinning, cleaning, and removing inedible portions. These parts may include muscles, intestines, liver, kidneys, heart, brain, connective tissues, nervous tissues, some lymph nodes, and fat.

Poultry meat is characterized by fine and firm fibers with little fat infiltration. The meat of chickens, fattened cocks, and turkeys is white, while that of ducks, geese, and pigeons is darker. Ostrich meat, on the other hand, is red. (sidkhan & alaa mohamed, s.d.)

1.2 A Comparative Overview of White and Red Meat with a Focus on the Nutritional Value of White Meat: (islam, 2024)

1.2.1 White Meat:

White meat, such as poultry and fish, tends to be tender and contains significantly lower fat levels compared to red meat. It is characterized by its light color, whereas red meat typically has a darker hue.

Sources of white meat include rabbits, poultry (like chicken and turkey), and certain types of fish—excluding tuna, sardines, and a few other species.

In general, white meat contains less fat and is high in protein, making it a preferred option for many individuals. Although red meat also offers certain health benefits, its consumption should be balanced and moderate.

1.2.2 Red Meat:

Red meat is derived from various mammals, including cattle, sheep, camels, and other large animals commonly consumed by humans. It is

distinguished by its strong flavor and aroma, as well as its dark red color, which results from its higher hemoglobin content.

While red meat can be consumed regularly, it is advisable to eat it in moderation due to its fat content, which may increase the risk of certain health conditions, such as cancer.

There is ongoing debate regarding the classification of meat from ducks, geese, and pigeons. Some consider these birds to belong to the white meat category, while others classify them as red meat due to their darker flesh and higher fat content.

1.3 Nutritional Value of White Meat

A 100-gram serving of white meat contains only 165 calories, making it a suitable choice for maintaining a balanced diet. It also provides 31 grams of protein, which contributes to the building and regeneration of muscle tissue.

As for fats, 100 grams of white meat contain only 3 grams of fat—a very low amount—making it a heart-healthy choice. Moreover, it includes significant amounts of essential minerals:

- Calcium: 15 mg
- Potassium: 256 mg
- Sodium: 74 mg

These contribute to various essential bodily functions. White meat is also rich in B-group vitamins. It provides:

- 69% of the daily recommended intake of niacin
- 30% of vitamin B6
- 6% of vitamin B12

Additionally, it supplies 39% of the recommended daily intake of selenium, an important mineral that plays a vital role in supporting the immune system and thyroid health.

1.4 Meat Production and Its Relationship to the Meat Industry: (boujnan & mabtouche ajla, 2024)

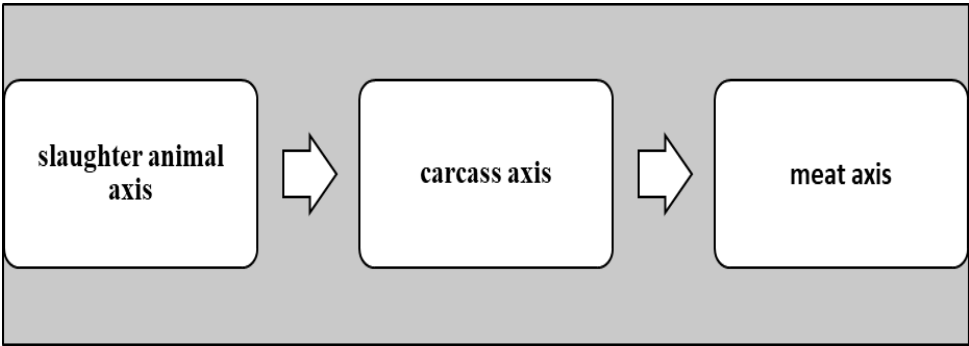
The foundation for developing and advancing the meat industry lies in the **production phase**. Without effective production, the subsequent stages of slaughtering and processing cannot progress or thrive.

In countries where meat production faces challenges or weaknesses—such as in most Arab nations—this limitation inevitably affects the performance of the later stages of the supply chain.

By contrast, the experiences of developed countries, which exemplify the concept of integration in the meat industry, show a different approach. These countries began by prioritizing the first stage: production. Once the necessary foundations for this stage were established and matured, they naturally moved on to the

second stage: slaughtering, followed by the third stage: processing/manufacturing.

Figure (1): Biological Aspects of Meat Production: These include:



The Source: Prepared by the researcher based on the reference (Khalidiya & Mabtoush Al-'Ajla, 2024, p. 31)

The biological aspects of meat production can be divided into three main, interrelated axes that are sequentially connected:

- **The Meat Animal Axis:**
This refers to assessing meat production efficiency, or more narrowly, feed conversion efficiency. This axis serves as the primary criterion for quantitative meat production.
- **The Carcass Axis:**
This focuses on the qualitative and quantitative characteristics of carcasses after the removal of slaughter waste.
- **The Meat Axis:**
This pertains to consumer preferences for specific meat cuts, fat content, and cooking methods. Thus, this axis represents the **qualitative** production aspect of meat.

1.5 Rural Development in the White Meat Sector

This study begins by presenting a brief definition of rural development and its relationship with the poultry sector, as follows:

Rural Development; Rural development is the process aimed at improving life in rural areas, enhancing its quality, and providing economic support to individuals living in these regions. The objectives of rural development include: (Alshamayleh, 2020, pp. 1-3)

- Making full use of all arable land that contributes additional resources to humanity.
- Identifying the best methods to promote rural development.
- Providing the basic needs of the rural population.

Rural development is also considered *“a process of improving the standard of living of a large segment of low-income rural residents, while ensuring their participation in preserving the achieved levels of development.”*

In addition, rural development aims to raise the living standards of rural inhabitants, both economically and socially. It is a comprehensive process involving several dimensions, with its core goal being the development and welfare of the rural community.

The importance of rural development lies in the following:

A high percentage of the population lives in rural areas

- Agricultural production is insufficient to meet local needs
- Agricultural returns are lower than those of industry
- Living standards in rural areas are lower than in urban centers (education, healthcare, population, etc.)
- Continuous migration of skilled human resources
- Urban areas attracting most types of investments at the expense of rural communities

1.6 Poultry Farming Project

Poultry farming is one of the key agricultural activities that contribute to the supply of fresh meat and protein-rich eggs. It plays a vital role in meeting people's nutritional needs. As such, poultry farming is considered a valuable and profitable investment opportunity, enjoying widespread popularity due to its ease of management and the essential food products it provides to families.

Despite being relatively simple and small-scale, poultry farming requires careful and professional planning to ensure the success of the project and achieve the desired financial returns through a well-prepared feasibility study: (Economic, s.d.)

1.6.1 Products Provided by the Project

The poultry farming project supplies food products with high nutritional value for both adults and children. The most important of these products include:

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- Poultry meat
 - Eggs

1.6.2 Project Objectives:

The poultry farming project represents a viable, sustainable investment opportunity in the agricultural and food sectors. It is an ideal choice for those looking to enter the agricultural field and achieve economic success and stability. There are several key objectives that the project aims to accomplish, which a feasibility study helps to fully understand and implement effectively:

- Meeting the growing demand for poultry products
- Providing employment opportunities for farmers and workers in the sector
- Generating substantial profits in a short period
- Supporting the economic and social stability of many families
- Gaining a competitive market share in the agriculture and food sectors
- Supplying fresh, high-quality products

Boosting the local economy and reducing reliance on imported agricultural products

1.6.3 Project Advantages:

Many people seek small-scale, low-capital projects to generate income and secure a livelihood. Poultry farming is among the easiest successful ventures, requiring only effort and dedication. It offers several advantages that make it an attractive opportunity for those seeking long-term financial stability. The most notable of these advantages include:

- **Growing demand** for poultry products
- The project **generates substantial profits**, especially considering the relatively low initial capital required
- It provides **healthy and safe food products**
- It **helps create suitable job opportunities** and contributes to reducing unemployment

1.6.4 Project Requirements

The poultry farming project requires several key elements to ensure the health of the birds and the production of high-quality products, which in turn guarantees the project's success and sustainability. The most important requirements include:

- A suitable **location and space** for raising poultry
- Proper **housing facilities** that ensure protection, comfort, and allow free movement for the birds

- **Balanced and nutritious feed** rich in essential nutrients to promote the health of poultry and improve meat and egg productivity
- Regular **monitoring of poultry health** and providing necessary **vaccinations and medical treatments** to prevent diseases and infections
- An effective **ventilation system** and proper **cooling system** to maintain optimal temperature conditions within the farm

Maintaining **general farm hygiene** and **personal hygiene** of workers to prevent the spread of diseases.

2. An Analytical Assessment of White Meat Production in Algeria

White meat is considered one of the important food sources for humans, and the demand for it has increased in Algeria in recent years due to the rising prices of red meat and fish, which are the main competitors to white meat (poultry). Therefore, it became necessary to prepare such a study to assess the reality of the poultry meat market and identify the most important variables affecting the quantity demanded and the quantities produced of this type of meat. This serves as an economic indicator to guide policymakers and decision-makers in determining the appropriate measures to address the existing shortage in the local supply of these meats, given that they account for the largest share of meat consumption.

2.1 Poultry Sector in Algeria

The national production rate in the poultry sector is estimated at 50,000 chicks from poultry grandparent stock, in addition to about 2 million chicks from parent stock, which in turn produce chicks that are sent to slaughterhouses after the fattening period. However, more than 70% of producers and breeders in this sector operate illegally, from acquiring chicks to obtaining feed and medicines. Experts in the poultry field believe that the sector has been facing the same crises for nearly three decades, with either the breeder or the consumer being the victim at different times. They explain that fluctuations in white meat prices, whether increases or decreases, are linked to production levels and the importation of poultry parent stock.

This was confirmed in a presentation on national market needs, estimated at 5 million parent-stock chicks annually, of which 2 million are produced locally, while between 2.5 and 3 million chicks are imported to meet national demand, which is estimated at 650,000 tons of white meat per year. Although Algeria's production capacity can reach 1 million tons of white meat annually, market demand compels producers to stick to this level. Algeria is one of the few

African countries that has developed two types of American grandparent poultry breeds in the provinces of Djelfa and Tlemcen.

Authorities have been urged to support those interested in developing the sector and breeding new strains to meet the market's demand of 5 million parent-stock chicks, and to eliminate imports entirely. Poultry grandparents are the breeds that produce parent stock, while parent stock produce chicks destined either for white meat consumption or for table-egg production. A poultry grandparent produces 45 parent-stock birds, while a parent bird produces 120 chicks (rafik, 2021).

The sector also recorded a significant increase in 2017, reaching 5.3 million quintals compared to 2.092 million quintals in 2009, an increase of 153%, according to the Minister of Agriculture, Rural Development and Fisheries.

The poultry sector, which is 90% dominated by the private sector, has experienced substantial growth in less than a decade, with a massive livestock population estimated at 240 million chickens and turkeys. Egg production followed the same upward trend during the same period, reaching about 6.6 billion units in 2017, up from 3.8 billion units in 2009. In terms of value, poultry production rose significantly by 184%, reaching 155.5 billion DZD compared to 54.8 billion DZD in 2009. Over the past decade, the poultry sector has grown by 10.3% in white meat production and 6.2% in egg production.

According to the same report, the poultry farming sector provides livelihoods for thousands of families nationwide. This activity, practiced in 1,322 municipalities across the country, has enabled the creation of 500,000 jobs. A quarter of national production—around 1.6 million tons—comes from four provinces known for poultry farming: Batna, Sétif, Bouira, and Médéa. (Aida, 2023/2024)

2.2 The Reality of the White Meat Market in Algeria (2000–2019)

During the 1990s, the agricultural sector in Algeria experienced a difficult situation that had significant negative impacts, causing farmers and breeders of sheep, cattle, and poultry to migrate to urban areas. Many were forced to abandon their agricultural lands and sell their livestock assets. In this context, it is noted that 9.8 million people were rural inhabitants. Furthermore, the difficult

financial situation during this period—resulting from the decline in oil revenues—did not allow for the implementation of effective policies to support and develop the agricultural sector.

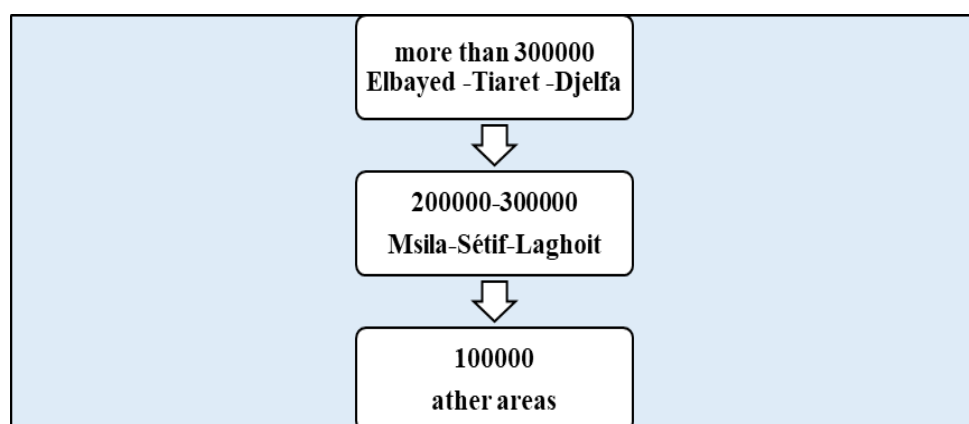
With the improvement in security conditions and the rise in oil revenues beginning in the year 2000, the government worked on rebuilding the facilities that had been damaged, in order to provide the necessary conditions for farmers to return to their land and agricultural activities. In addition, several forms of

support were provided, including assistance for constructing and renovating homes.

The government also contributed to establishing youth investment programs, from which young people benefited, particularly in the creation of livestock wealth through the expansion of cattle and poultry breeding activities. (boujnan & mabtouche ajla, 2024).

As for red meat production in Algeria, the following figure illustrates this:

Figure (2):: Red Meat in Algeria



unit of measurement: 100000 sheep-2017

The Source: Prepared by the researcher based on the reference : Ministry of Agriculture and Rural Development - <https://madr.gov.dz>

It is evident from the figure that red meat production is concentrated in certain regions more than others. For example, production is higher in interior provinces and the High Plateaus, such as El Bayadh, Tiaret, and M'Sila, which have abundant livestock. Consequently, their production is readily available, and prices are relatively reasonable and acceptable to consumers compared to regions that require the supply and storage of these meats.

Despite this, consumers show a greater demand for white meat, as its prices are more affordable. Even fish prices are higher compared to poultry meats such as turkey and chicken.

2.3 Local Production of White Meat in Algeria (2008–2019)

White meat in Algeria is widely consumed compared to red meat, mainly because its prices are relatively compatible with consumers' purchasing power. However, white meat lacks diversity, as it largely depends on poultry. In recent years, there has been a growing trend toward consuming turkey. The following table illustrates this:

Table (1): Local Production of White Meat in Algeria (2008–2019)

Year	Production (thousand tons)
2008	142.08
2009	190.83
2010	190.83
2011	267.41
2012	365.40
2013	418.40
2014	284.76
2015	293.44
2016	515.44
2017	529.81
2018	539.49
2019	555.49

The source: Annual Book of Arab Agricultural Statistics, Volumes 37 & 38, Arab Organization for Agricultural Development, Khartoum, Sudan.

From the table above, it is clear that the production of poultry meat has steadily increased due to the expansion within the sector. This growth resulted from government support, investment programs, and initiatives aimed at youth employment, which were particularly embraced by young people from rural areas returning after displacement in the 1990s. Additionally, the provision of essential production inputs—such as feed, corn, vaccines, and other necessities—has contributed to this growth. Poultry breeders have also adopted modern production methods, while the government has removed value-added tax and customs duties on key poultry inputs.

The development of the sector was further encouraged by new commercial activities, as poultry became a primary material for restaurants and fast-food

outlets, which have proliferated in recent years. Moreover, population growth and rising individual incomes increased the demand for agricultural products, particularly animal products. This, combined with higher prices of alternative goods such as fish and red meat, shifted consumer demand toward poultry meat. One of the most prominent aspects of rural development in Algeria's poultry sector is highlighted in the following table:

Table 02: Rural Development in Algeria's Poultry Sector

Aspect	Description
Achieving Self-Sufficiency	The poultry sector in Algeria has experienced significant growth, enabling the country to achieve self-sufficiency in white meat since 2000.
Job Creation	The poultry sector provides thousands of job opportunities in rural areas, employing more than 500,000 people.
Support for Breeders	The government implements measures to support poultry breeders, such as providing low-interest loans, reducing customs duties on production inputs, and operating a storage system for white meat to absorb surplus production.
Feed Industry Development	Algeria is developing its local feed industry to reduce reliance on imports and lower production costs.
Market Regulation	Measures are taken to regulate the poultry market, such as controlling the import of parent-stock chicks and exporting surplus eggs, aiming to stabilize prices and balance supply and demand.
Disease Control	Vaccines and veterinary medicines are provided to protect poultry flocks from diseases, such as avian influenza.
Guidance and Advisory Services	Agricultural directorates play an important role in guiding and advising breeders, providing necessary information on best agricultural practices and poultry farming.
Rural Development Projects	Numerous development projects aim to improve the poultry sector in rural areas, including establishing modern poultry farms, providing necessary infrastructure, and training human resources.

The source: Prepared by the researcher

The table summarizes the relationship between rural development and poultry farming. After reviewing various data points, it became clear that the poultry

sector is a fundamental pillar of rural development. Therefore, we attempted to summarize each aspect separately, presenting its relationship to production, feed imports, and human resources.

The presentation addressed the role of the white meat sector in rural development, which has become a significant factor in the economy.

It is clear from the table that white meat is not just a consumer item, but a product that has an impact on several other sectors such as the feed industry, the pharmaceutical industry (e.g., animal vaccines), and the poultry feeding machinery industry, for example.

2.4 Challenges Facing the White Meat Production Sector in Algeria

The poultry sector in Algeria faces several challenges that can affect both the consumption and production of white meat. Key challenges include:

- **Feed Price Fluctuations:** Variations in feed prices significantly affect production costs, leading to price instability in the market.
- **Animal Diseases:** Diseases such as avian influenza pose a serious threat to livestock, including poultry.
- **Climatic Variations:** Certain climatic factors can negatively impact livestock in general, not just the poultry sector.

Other notable challenges include:

- **Competition Between White and Red Meat:** This is driven primarily by shorter production cycles, higher conversion efficiency, and the use of modern technologies imported from outside the Arab world, which have facilitated management and marketing processes.
- **Competition Between Plant and Animal Production:** Cereals provide more than 50% of an individual's energy and protein needs, whereas animal products supply 17% of energy and 32% of protein needs. Significant differences exist between developing and developed countries; for instance, daily protein intake per capita in developing countries is about 6g/day, compared to 30g/day in developed countries.
- **Competition Between Humans and Animals for Grain:** This occurs in countries with limited grain production, as is the case in most Arab countries. Livestock in these regions consumes about 20% of total grain production, whereas in developed countries, livestock consumes 60–70% of total grain production, eliminating direct competition. One key trend likely to increase red

meat production in the Arab world is the shift from traditional livestock systems to intensive production systems, which will require large quantities of concentrated feed and could result in increased competition for resources.

5.2 New Mechanisms Adopted by the Ministry of Agriculture to Develop the Poultry Sector (Hamdesh, 2025)

The Ministry of Agriculture has implemented several measures to support and regulate the poultry sector:

- Regulating the import of parent-stock chicks according to national market needs.
- Exporting surplus table eggs to organize the domestic market.
- Activating a mechanism for storing surplus white meat to stabilize the sector.

The Ministry emphasized that these steps aim to strengthen agricultural policy and ensure market balance, benefiting both producers and consumers.

The National Federation of Poultry Breeders initiated a request for a coordination meeting, which was held on **June 2, 2025**, at the Ministry of Agriculture, Rural Development, and Fisheries, under the supervision of the Directorate of Animal Production and Regulation. According to the federation, the main points discussed included:

- Declining white meat prices (less than 170 DZD/kg for live chicken).
- Increasing losses borne by breeders.
- Surplus production of table eggs.

Following this meeting, the Ministry pledged to implement the following recommendations:

- Launching a storage program to absorb the surplus of white meat.
- Granting licenses to export table eggs to foreign markets.
- Regulating the import of parent-stock chicks in line with national market needs.

The federation praised the Ministry's responsiveness and confirmed its commitment to ongoing monitoring and field-level follow-up to ensure the effective implementation of these measures, in fulfillment of its obligations to breeders and sector professionals.

II. Methods and Materials:

This study adopts the inductive-deductive approach, which begins with theoretical description and applies it through analysis to a case study. In this case,

we begin with a theoretical framework on white meat in general, then apply the analysis to the context of Algeria.

III. Results and discussion :

Through the study, a set of results was reached, which can be summarized as follows

- **Rural Development Aspects:** The poultry sector contributes to rural development in several ways, including achieving self-sufficiency, providing employment opportunities, supporting breeders, developing the feed industry, regulating the market, controlling diseases, offering guidance and advisory services, and implementing rural development projects in poultry farming.
- **Challenges Over Time:** Poultry experts indicate that the sector has faced similar crises for nearly three decades, sometimes affecting breeders and sometimes consumers. Price fluctuations of white meat are linked to production rates and the importation of parent-stock poultry.
- **Consumption Patterns:** White meat in Algeria is widely consumed compared to red meat, mainly due to its relatively affordable prices. However, it lacks diversity, being largely focused on poultry, with a growing trend toward turkey consumption in recent years.
- **Sector Challenges:** Key challenges include price volatility, poultry diseases, and competition between white and red meat, especially during certain seasons.

IV. Conclusion:

In conclusion, white meat is a highly demanded product among consumers, experiencing increased demand during certain seasons of the year. When comparing it to red meat, it is clear that price plays a significant role in consumers' preference for white meat over red meat, although red meat also continues to enjoy widespread demand. Considering Algeria as a case study, it is evident that the white meat market, particularly poultry, has witnessed notable expansion in both production and consumption, reflecting a clear relationship between supply and demand.

Given that this sector is closely linked to rural areas, the development of the poultry sector is a key component of rural development. However, the hypothesis that white meat consumption is consistent throughout the year is incorrect, as consumption fluctuates according to seasonal occasions. For example, demand

significantly increases during Ramadan. Therefore, it is not accurate to claim that there is a mismatch between supply and demand. The effective strategy for balancing supply and consumption of white meat lies in organizing and managing the sector efficiently, involving the Ministry of Agriculture, private stakeholders, and all actors in the sector.

Future Study Perspectives

- Studying and analyzing marine fishing resources and their relation to rural development.
- Strategies for developing beekeeping in Algeria as an important branch of rural development.
- Challenges facing rural professions.
- Stages of entrepreneurial project development in rural Algeria.

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