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**THE DEVELOPMENT PROSPECTS OF RABBIT SECTOR IN TUNISIA  
BASED ON A VALUE CHAIN DIAGNOSIS.**

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## THE DEVELOPMENT PROSPECTS OF RABBIT SECTOR IN TUNISIA BASED ON A VALUE CHAIN DIAGNOSIS

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### ABSTRACT

This study is to identify barriers to the development of rabbit sector in Tunisia using value chain approach, as an instrument of strategic analysis and value-cost optimization. To this end, a survey was conducted with a representative sample of industrial rabbit breeders. The results prove that the development of the rabbit value chain is conditioned in promoting the efficiency and the quality at the breeding system. Rabbit feed quality is the main constraint for the majority of breeders, followed by animal feed prices. This justifies the increase of the consumer sale prices of rabbit meat, affecting its domestic supply. Thus, the growth of the Tunisian rabbit sector is based on a reform and an upgrade of the productive systems and also on a better organization of the sector through the promotion of the vertical and horizontal integration. Promoting rabbit meat consumption is also a determining factor of rabbit sector development.

**Key words:** Rabbit, Value chain, Tunisia.

### INTRODUCTION

Rabbit breeding in Tunisia is dominated by traditional systems, but during the last decades the industrial systems are in increase. Industrial rabbit breeding is characterized by the installation of modern breeding system, using races with more successful exotic origins and in fenced hutches installation (Tunisian Office of Livestock and Pasture, 2014). This sector is confronted with several constraints, mainly technical, such as the poor quality of production factors (animal feed, livestock buildings) and the low technicality of the breeders (inappropriate food supply, problems of reproduction control, bad hygiene) (Bergaoui, 1992). This situation leads to a low productivity and profitability of the rabbit breeding. In addition, the rabbit breeding in Tunisia suffers from marketing problem and from low request. In this context, and because of the contribution of this sector to food security and rural development, a strategy for upgrading the Tunisian rabbit sector is essential. (Tunisian Poultry and Rabbit Association, 2012)

This work proposes a functional and organizational diagnosis of the rabbit breeding sector in Tunisia, using an analysis of the value chain to investigate the barriers to the development of this sector and to identify its progress perspectives.

### MATERIALS AND METHODS

#### Value chain approach

Value chain is the complete range of the different activities to bring a product or a service, from the conception to the final elimination after use, including the production (combination of physical transformations and intervention of diverse services) and the delivery to the consumers (Kaplinsky, 2004). In the case of the agriculture sector, Miller and Da Silva (2007) define value chain as a set of process and of flows from the farm at the table, a set of private and public actors, and also a set of the value-added activities carrying a product from production phase to the consumers. This value chain

approach includes diverse aspects: physical, economic and social logistics between the raw product and the consumer, supply chain, flows of remuneration which set the generated margins. It allows the authorities and especially the breeders to approach the value chain questions, to maximize the value during their commercial transactions (BIT, 2012).

### **Survey with Tunisian industrial rabbit breeders**

To make the diagnosis of the Tunisian rabbit value chain and to analyze it, according to the degree of vertical integration of breeders in this sector, a survey was realized with 10% of total industrial rabbit breeders (260 breeders) (Tunisian Poultry and Rabbit Association, 2015), practicing or not the slaughter.

The sample selection was based on the total number of female units. In fact, breeders with more than 7106 units females offer 26% of the total production of rabbit meat from industrial rabbit breeders. It's a purposive sampling. Subsequently, the sample was structured of industrial rabbit breeders, having more than 7106 female units, spread over the regions of Nabeul, Jendouba, Sousse, Sfax, Monastir and Mahdia. 73% of them practice only rabbits breeding activity. 77% use artificial insemination and 27% practice the slaughter.

The survey was conducted on face to face with the selected breeders, using an interview guide. It covered technical and economic, quantitative and qualitative, aspects of the breeding system, to:

- explore the main constraints in rabbit breeding,
- identify needs and expectations of industrial rabbit breeding,
- study the structure of the rabbit meat cost.

### **Data processing and organization**

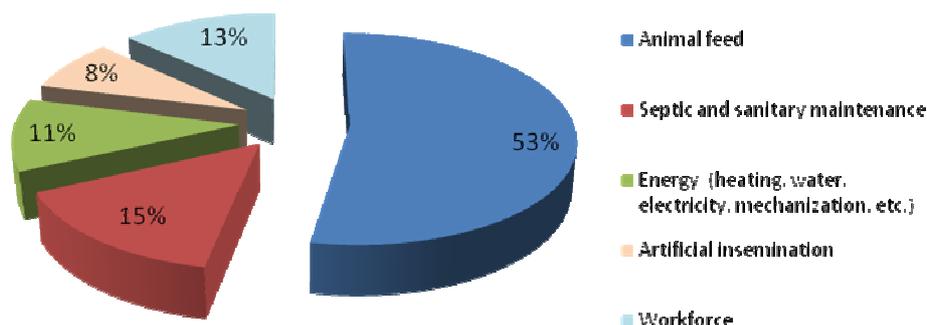
Processing and organization of the collected, quantitative and qualitative, data is based on the model of Porter. Porter's Value Chain is based on primary activities, support activities and margin.

Primary activities are processes, directly involved with producing a delivered product. It includes inbound logistics, operations of transformation of inputs into a product or service, outbound logistics, marketing and sales, in addition to all services that support the ongoing value of the product to the customer after it has been purchased. Support activities facilitate each of the primary activities without being directly involved with producing the product. It includes procurement, human resource management, technology development and infrastructure. The profit margin is the value created and delivered to the customer minus the total cost of the production. To maximize it, developing value adding activities across the system and eliminating activities adding no value are needed. (Porter, 1998)

## **RESULTS AND DISCUSSION**

The results are presented according to the Porter value chain model above seen: primary and support activities and margin.

An organized supply on raw materials can help rabbit breeders to reduce the costs and to be more competitive on the market. The supply concerns essentially the supply in reproductive rabbits and in rabbit feed. To renew the reproductive livestock (males and females), 80% of the interviewees stock up with approved breeders centers (among five in Tunisia). The others produce their own females. Concerning rabbit feed, the availability is averagely criticized: 43% of the breeders complain about the regularity of the supplies. 57% of the breeders judge that its quality is binding and not approvable. Because of the low tonnage of rabbit feed comparing to other farm animals feed and because of the seasonality of rabbit breeding in Tunisia, the producers of animals feed do not guarantee a perfect quality of feed for rabbits, especially regarding content and nature of fibers. Furthermore, the major problem of raw materials supply is the increase in prices, particularly for animal feed. These represents more than 53% of the total cost of rabbit breeding. In addition, septic and sanitary maintenance and workforce represent respectively 15% and 13% of total rabbit breeding cost (figure1).



**Figure 1:** Total rabbit breeding variable cost

The production capacity and the technologies are involved in the typology of rabbit breeding systems and influence their profitability. The survey shows that 65% of the Tunisian rabbit breeders use "paving stone" buildings and the others use "in vault" buildings, knowing that a technical statement of work governs breeding buildings and equipments. The artificial insemination is used by 77% of the interviewees, it's practiced systematically in the case of unique band and also in conduct in multiple bands, but occasionally in weekly conducts. The conducts in unique band is the dominant and it's in increase. 94% of the rabbit breeders, practicing artificial insemination, regularly follow a crawl space. About human resources and according to the survey, only 4% of the breeders appeal to the outside workforce, in particular for the insemination, the cleaning and the disinfection.

Based on the survey, the distribution system of rabbit is dominated by alive rabbits sale (73%) via multiple trade channels, such as municipal markets, specific points of rabbits sale in conglomerations, as well as on the weekly markets. Besides, vertical integration of breeders in rabbit value chain via practicing slaughter and distribution, in addition to breeding, is in increase. It's accompanied with the development of the marketing activities. It targets niches markets such as tourist market (hotel units), institutional catering (Ministry of defense, schools, hospitals, etc.) and mass-market retailing. But it's facing some commercial constraints such as the commercial standards and the competition of the other categories of white meats.

Competition between simple breeders and those with vertical integration in the Tunisian rabbit value chain can be considered as uneven because the latter have access to the mass-market retailing and have consequent ways for the promotion and the marketing of their products. The relationships between these two types of breeders are relationships of customers to suppliers. The big structures supply the simple breeders with reproductive rabbits. Besides, a rivalry becomes established between breeders with vertical integration and distributors because of the weak growth of sales due to low consumption, the attempts of integration of breeders giving them more independence and a better marketing for their products, and also because of the breeders concentration due to the immensity of the investments in front of a stiff, seasonal and risked market.

To be able to add value, breeders have to reach up to the final markets, to respect the standards and to satisfy the request of the final buyers and consumers. The Tunisian Poultry and Rabbit Association (2015) asserts that the consumption of rabbit meat far exceed the domestic offer and that it's in regular progress (it's equivalent to 0,25 gr/capita/year in 2014). It has a big development potential because of its health benefits and because it's widely below than the consumption of the other categories of white meat. This requires concerted efforts of advertising.

Supply chain management implies management of the interactions with the suppliers and with the customers and an optimal organization of the transport and the use of products. It can provide a value to the buyers and to the sellers by putting on sale the product at the right time and at the right place. In this case of rabbit value chain, functions of rabbits transport (to / from the slaughterhouse), slaughtering and packaging, freezing and also storage of the rabbits meat shall be ensured by breeders

with vertical integration. They represent respectively 24%, 64% and 12% of the total variable cost of slaughtering. These functions weigh on the structure of rabbits meat cost. So for the cost containment, a better management of the supply chain is required.

Given the importance of Innovation and Research, there is Research and Development activities which have for essential mission to develop rabbit products and to create tracks of differentiation. The Tunisian Poultry and Rabbit Association have a distinctive unit for information and raising awareness of Tunisian rabbit breeders.

### CONCLUSIONS

Tunisian rabbit sector presents a high potential of development. More productive and big rabbits farm are recommended. Specialized units, unique bands conducts will allow an optimization of places and working time, and in consequence allow economies of scale. In order to increase rabbit breeding productivity and to reduce its variable cost, agreements are required between breeders and manufacturers of rabbit feed to ensure the availability and the quality of this raw material and to control the continuous increase in its price. Supply contracts are also required between breeders, slaughterhouse and customers (Distributors, Tunisian Ministry of defense, etc.) through the Tunisian Poultry and Rabbit Association assistance to guarantee a rather remunerative prices of rabbits meat. Initiatives of organization of the breeders should be established via the promotion of the vertical and horizontal integration in the rabbits value chain. A better valuation of the rabbits meat is necessary among distributors and consumers via the product certifications, the cut encouragement, the packaging and the advertising of rabbits meat.

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