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# A COMPARISON OF THE HUNGARIAN MANGALITZA AND DUTCH ORGANIC PORK CHAINS

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**Abstract:** The aim of this paper is to present the Hungarian mangalitzta pig and Dutch organic pig supply chains and, in interrogating the differences between the two sectors, to make suggestions for the efficient operation of the Hungarian mangalitzta breeding sector. The information about the two was sourced by a depth interview and literature reviews. It is established that there are few similarities between the two segments. In both sectors, the pigs are kept outdoors in large paddocks, there are also National Associations: in Hungary, the Association of Mangalitzta Breeders (NAMB), in The Netherlands, the Organic Pork Growers. They hold a general meeting every year, where they discuss issues such as volume, quality, price, marketing and the future challenges and opportunities. There is strong demand both for the mangalitzta and also for Dutch organic pork products on foreign markets. The main difference between them is their information systems. In The Netherlands, information flows via FarmingNet, but in the mangalitzta sector, no such system exists. Yet, such a system would represent a breaking point for the adequate flow of data and efficient production for the NAMB, because then, Hungarian farmers would be forced to supply data.

**Keywords:** mangalitzta pig, Dutch organic pork, supply chain management, information system, FarmingNet

## 1. Introduction

Supply chain management (SCM) not only presents the product flow from the producer to the consumer (Balogh et al., 2009). Coordination and collaboration among chain actors have a significant role over sourcing, production and logistics management (Naspetti, 2009, Szabó et al., 2009). The precise knowledge of traceability is essential to analyse the supply chain and to provide secure and good quality food products for the customer (Pakurár et al., 2010). Because of the changes in consumer demand which have occurred of late, substantial transformations have been seen in organic food chains. Increasing numbers of studies describe comparisons and the performance of organic supply chains, noting that the production, processing and sale of organic products are not the same as in conventional chains. This difference is explained by how, in organic chains, collaboration, information flow and the production of high quality products are of high priority. The main organic pork producers in Europe are Germany, Denmark, France, the United Kingdom and The Netherlands (European Commission, 2010). The market share of the Dutch organic pork sector in 2010 was 1.9 %, and this is expected to increase continuously in the future (Monitor Duurzaam Voedsel, 2010). In the Dutch organic pork sector, a strong increase has been seen over the past few years. While most of the Dutch production is exported, domestic consumption is increasing continuously. The share of organic meat in gross pig meat sales in The Netherlands is higher than anywhere else in Europe. The reason for this strong showing is the

strength of the Dutch supply chain, the foundation for which was laid in the past (Vermeer, 2011). In Hungary, demand has been growing for organic products and the mangalitzta pig represents the organic line in the Hungarian pork sector. However, this breed is not organic, even though consumers are of the opinion that this breed is organic in and of itself, because its products are viewed as being healthier and tastier than commercial pork. The mangalitzta supply chain is unique not only in Europe, but worldwide, because the segments of this chain function in close connection and interdependence, even though the producers and traders of mangalitzta products appear on the same market as competitors.

## 2. Materials and methods

The paper is based on the methodology of supply chain management. Pork supply chains consist of similar stages all over the world, but structural differences between each other can be observed (Trienekens and Wognum, 2009). This paper presents the main structural differences between two similar, but not uniform, segments in two European countries.

The information on the analysed mangalitzta sector was derived from a depth interview with the secretary of the National Association of Mangalitzta Breeders (NAMB), Dr. Péter Szabó. In the course of the interview, most questions focused on the mangalitzta breeders, slaughterhouses, processing companies, export and home retailers. The other area of research was an analysis of the organic pork chain in

The Netherlands. I processed key annual reports and literature involving the Dutch organic pork production and chain. On the basis of this information, I prepared the flow charts for both segments.

The main aims of this research are to compare the mangalitzta and the Dutch organic pork chains and to identify their differences, in order to make suggestions for efficient production in the mangalitzta pork sector.

### 3. Results and Discussion

#### 3.1. The mangalitzta breeding in Hungary

The Hungarian mangalitzta pig sector has experienced numerous structural changes in the past few decades. From a record low of approximately 200 pigs in 1990, when the breed was on the edge of extinction, last minute demand from the Spanish market suddenly appeared and the pig stock has increased dynamically ever since (Magyar, 2005). Since the millennium, the number of pedigree stock has continuously increased until 2007 and reaching a level of 9,200 sows. From 2004, a strong climb ensued in the number of mangalitzta. The reason for this was the target programme from the year of 2005 for the keeping of animals representing high genetic value, as the breed is indigenous (MRD, 2004). Subventions were in place until 2009; however, from the third year of the application period continuous decline can be observed. The main reason for the decrease was the drastic growth of feed costs because of the drought damage in 2007 (Kovács and Balogh, 2011). Another reason for the decline was the global economic crisis in 2008, which forced many farmers to stop breeding and to liquidate their livestock. Since 2010, a further period of supports has been in place, which will be maintained until 31<sup>th</sup> December 2014. The aim of the subvention is to preserve the genetic stock of protected indigenous and endangered agricultural species represented in low numbers in breeding programmes (MRD, 2010). This programme will stop the decline, and even to the end of the supporting period will contract more than half of the farmers 50 % growth in the sow number. Figure 1. illustrates the change of mangalitzta sow numbers from 1988 to 2011.

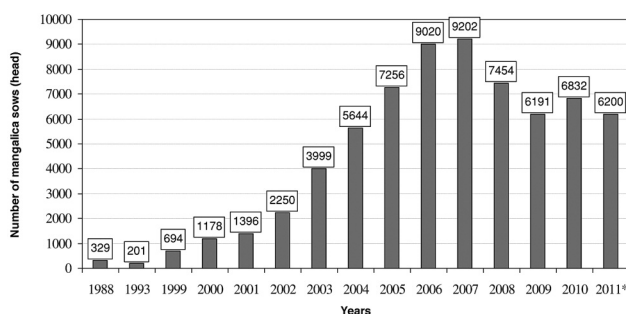


Figure 1.: Mangalitzta sow number from 1988 to 2011.

\*2011: estimated value

Source: NAMB, 2011

#### 3.2. The Hungarian mangalitzta pork chain

In 2011, there were 115 controlled mangalitzta breeders in Hungary. Approximately 6,200 sows were kept, i.e. one-third less than the 9,000 sows kept on average in previous years. This sow number resulted in about 46,100 mangalitzta slaughter pigs being bred.

The Hungarian mangalitzta breeders are supplied with boars by the NAMB co-ordinated nucleus farms. At about half of the total number of farms, boar breeding was initiated to preserve the 27 mangalitzta lines. In the mangalitzta sector, there are 3 main integrations. Three large-scale producers are in possession of one-third of the total number of sows, with 600–700 sows/farm. Their share in the slaughter pig output is 40 per cent. Slaughtering, processing and the production of several end-products are arranged at Pick Szeged Inc. and Surjány-Meat Ltd., in a ratio of 75–25 %. Approximately 2,000 tons/year of bony thigh (legs), chuck and deboned pork chops are exported to Spain as raw materials, from which the world-famous Serrano ham is made. To Japan are transported about 300 tons/year of pork chop and tenderloin. The domestic processing products (salami, sausage, lard, fat) are produced and sold in Hungary. The 21 medium-sized producers and sellers possess 18 % of the entire number of sows and the total share of slaughter pig sales is 20 %. Slaughter and processing are performed by several larger or smaller factories. Some major slaughterhouses and processing companies are the following: Lac-Meat Ltd., Maros-Meat Ltd., Pásztor-Meat Ltd., Mangary Ltd. Palatin Ltd., PIMI 2000 Ltd., Szilvánhús Ltd., Balaton Meat Ltd. represent the processing plants. 91 small-scale producers keep half of the total breeding animals and the share of the slaughter pig sales is similar to that of large producers. Most of the small breeders keep the animals in extensive keeping technology, which is why the breeding period is longer and the production is less efficient. This is the reason why these breeders can only obtain 6 piglets/sow/year, as compared with the number of piglets on large farms (9.25 piglets/ sow/year). Festivals and markets are organised several times each year in some Hungarian cities to target domestic consumers with the products of large and small-scale farms.

The reliability of the mangalitzta sector has declined in the past several years. In 2008, the NAMB gave certificates to just more than 26,800 slaughter pigs, but today that number is not much more than 16,100. The NAMB coordinates the breeding and determines the future conceptions. This organisation certifies mangalitzta pigs, thereby officially guaranteeing the origin of genuine mangalitzta products (Olmos and Tóth Ltd., 2011).

Accordingly, the NAMB associates the chain actors, thus solving the problem of information flow. However, the supplying of data – or rather – complete information flow results in problems. There exists no central system through which the information flow would be suitable to provide key information to the breeders, slaughter-houses and processing companies. Yet, exactly such an interchange of information would make their combined production more efficient. The Hungarian mangalitzta pork chain is represented by the following figure (Figure 2).

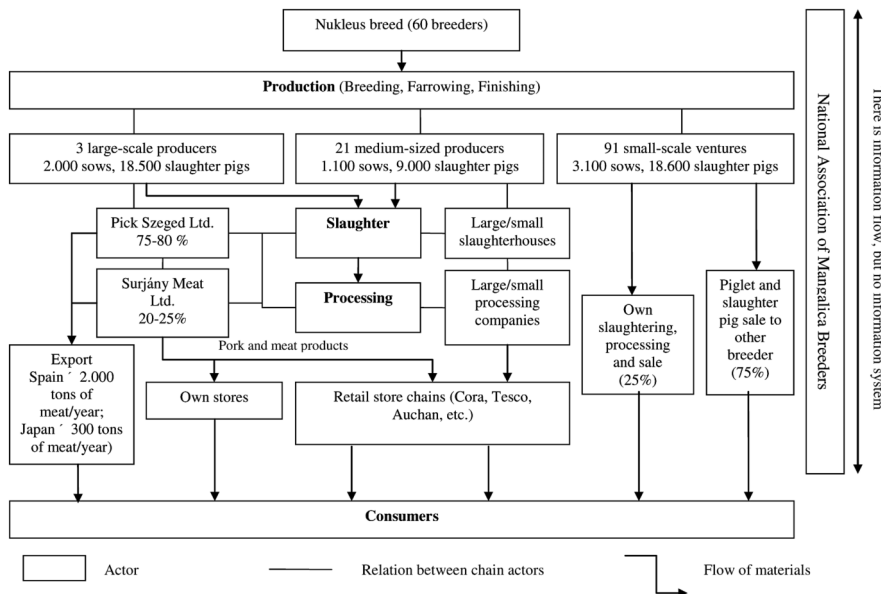


Figure 2: The mangalitzta pork supply chain in Hungary  
 Source: On the basis of NAMB, 2011 own compilation

### 3.3. Organic pork chain in The Netherlands

The organic pork sector in The Netherlands is relatively small. In 2009, there were 87 organic pig farms. The gross sales from organic pork grew by 4.4 % in 2009 (Vermeer, 2011). Organic products are 40–50 % more expensive than non-organic pork products, because animals are kept longer, are provided with more living space per animal and also because organic feeding increases production costs, as in the mangalitzta breeding. Nevertheless, it is keeping technology problem that more piglets die after birth, as the sows and their piglets are not fenced off from the other animals, meaning that piglets are more easily trampled to death, reducing the efficiency of production (Nijhoff-Savvaki et al., 2008).

The Dutch organic pork chain is streamlined; the products are sold largely by conventional retailers. The major player in the organic pork sector in The Netherlands is The Groene Weg, which is fully owned by the Vion Food Group (Oosterkamp et al., 2009). The long-term planning of The Groene Weg is to elaborate the only franchising formula with considerable growth and a strong position in supplying supermarkets and export. The fresh pork products are sold by The Groene Weg's own stores and other retails/distributors and export outlets. The Groene Weg, as a central meat processor, makes the information flow possible between chain actors via an electronic information system, FarmingNet. This is an intercompany system designed by Vion Foods. Via FarmingNet the farmers obtain information from the slaughter details and it helps the pig farmers to optimize their operations and make modifications to efficient production (Nijhoff-Savvaki et al., 2009).

Organic pork meat became a regular assortment in supermarkets and the largest butchers. Sixty per cent of the products are sold by supermarkets, 36 % by specialists. The sale of out of

home sector increased from 0.6 % in 2009 to 2 % by 2010 (Monitor Duurzaam Voedsel, 2010). Figure 3. represents the Dutch organic pork chain.

## 4. Summary

Mangalitzta breeding would be a breaking point for Hungarian agriculture, because of the growing demand in foreign markets and the unique supply chain of the sector. Dutch organic pork production plays a significant role in the EU, because the share of organic pork meat in gross pork meat sales in The Netherlands is the largest in Europe and the Dutch have one of the best performing economies. In the mangalitzta supply chain, there are few problems. The main problems are the problems with

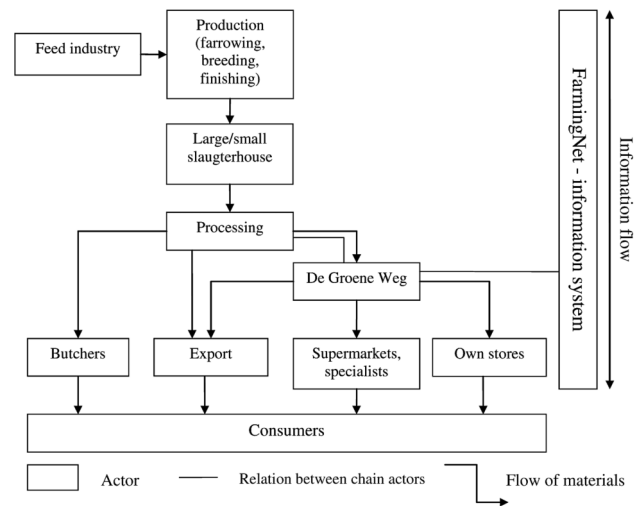


Figure 3: The organic pork supply chain in the Netherlands  
 Source: On the basis of Nijhoff-Savvaki et al., 2009 own compilation

information flow and the lack of data. In Dutch pork production, there is an information system, FarmingNet, which makes the data connection between chain actors possible and helps the pig farmers to make their production efficient. With a system like FarmingNet in Hungary, the problems with information flow could be solved. The system would be operated and financed by the NAMB.

## 5. Acknowledgement

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