

Challenges in Cattle-Beef Product Supply: KLPK's Value Creation Strategic Plan

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Abstract. The demand for cattle-beef products and livestock has kept increasing in recent years. Therefore, various national agendas have been organized to ensure that the country's food security continues to be able to face all challenges, especially the needs of the country. Kedah Corporation Plantation Group (KLPK), a key player in the cattle-beef industry in Kedah expected to play a vital role in developing a feedlot industry in Peninsular Malaysia. Thus, this conceptual paper uses document analysis from various sources to gather data information and interview approaches in discussing on company's supply chain strength and strategic plan for future direction. Based on the findings, the study proposed the KLPK's blockchain approach for the company's future digitalization way forward. This study is expected to give a comprehensive overview of the company's constraints and strategy to succeed in the national and company agenda for the long term.

1 Introduction

Currently, the agricultural sector is driven by the National Agro-Food Policy 2.0 (2021-2030) as well as the 12th Malaysia Plan (RMK12) (2021-2025) [1] with a special focus on the transformation of this sector through the Industrial Revolution 4.0 (IR4.0) [2]. The goal is to encourage the private sector to venture into modern injection in production lines. Food-based importation for internal use become the main issue in Malaysia [3]. Beef consumption in 2019 was around 197,600 tons while the population keeps rising each year [4]. In addition, companies with import permits have imported more than 1,000 tons of meat to be distributed to the local market, but the quality of the meat is a critical question because of the mixing method between solid meat and low-quality meat parts (fat, veins and internal organs of animals) [5]. This is different from the quality offered by cattle and meat industry players who prepare their final products by offering solid meat in addition to focusing on high-end products for high-end restaurant requests [6]. Furthermore, the significant difference offered by this industry player is based on the demographics of the Malaysian community focusing on the demand for this product for the purpose of ethnic local dishes compared to the demand of luxury restaurants that serve dishes based on the quality of meat taste [7]. This tendency leads to large-scale production of livestock products

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†having to focus on producing the maximum quantity with the principle of cost savings in the provided value chain [4]. Therefore, this study attempts to identify the challenges faced by local industry player and create value in their cattle-beef product supply strategic plan by implementing a digitalization approach in their operation.

2 Research Methodology

In this study, existing documents in printed and electronic form are assessed using an approach called document analysis. One of the analytical methods employed in this study was the finding, selection, assessment, and synthesis of the data in the document. The distribution of KLPK's cattle-beef product supply in Malaysia and the development of value in the strategic plan are the focus of this study's compilation of research findings from various sources. The steps involved in this include reviewing the data that is available, interpreting it to gain a full understanding, figuring out its relevance, and furthering scientific study [8,9]. This study's data were acquired from a variety of sources, including relevant journal articles, related publications, newspapers, annual reports, official broadcasts, scientific articles, official organization reports, websites, and numerous additional publicly accessible information. All resources than confirmed by KLPK's top management and additional information is also supplied by the company's management while using a prompt interview approach to avoid any misinformation that tarnishes the company's reputation in the future [10].

3 Findings

Kedah State Economic Development Corporation (PKNK) plays important role in the development of plantation and agribusiness policies in Kedah. The establishment of *Kumpulan Ladang-Ladang Perbadanan Kedah Sdn Bhd (KLPK)* or Kedah Corporation Plantation Group as a business arm for PKNK is to strengthen state various economies opportunities in plantation management such as oil palm and rubber, cultivation program, downstream activities and rubber processing, livestock businesses and agricultural, as well as organic fertilizer production. To manage both business ventures, KLPK established *KLPK Venture Sdn Bhd.* and *KLPK Ternak Sdn Bhd*, which emerged as an important catalyst as northern Malaysia's halal hub in cattle-beef production and supply chain. Prior to its tagline “*Feed First, Animal Later*”, the company put huge effort into animal food for internal and commercial use before expanding to rearing cattle for direct selling and beef supply in the market. This strategy is to plan and control 80% of operating costs contributed by animal food. Expected to pioneer innovation and sustainable cattle-calf farming, *KLPK Ternak Sdn Bhd* varies its rearing strategy using feedlots and cattle-oil palm estate integration methods. Other than the methods, the company also provides facilities and services such as an animal quarantine centre with a capacity of 300 cattle at once, cultivation and production of animal feed, and the breeding and calf-nursery centre.

The Malaysia-Thailand border provides a strategic location for the farm development for cattle livestock entre-port activities. The animal quarantine facilities and service ease the logistics and transportation of the livestock through *Bukit Kayu Hitam* for local and external trade demands. Legal required for livestock to undergo quarantine particularly import herds to screen for diseases before distribution. The services include livestock feed, medicines, and vaccines as well as identification tags (RFID tags). Fodder and forage

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process and cultivation activities covered an area of 582.9 acres which is also free grazing for calf growth while the feedlot capacity accommodates 1200 cattle, dedicated to the fattening process before livestock supply and raw beef production.

Table 1. KLPK's Facilities for Halal Value Creation [11,12]

Facility	Function / Advantage	Halal Value Creation
Weighing Station	Weighing scale for the livestock before the sale. This is to provide the right size and weight as promised to the client.	Improvement in company return and investment
Cattle Ramp	The facility provides a convenient process for loading and unloading animals and avoiding injuries to cattle.	Maintain the herd quality and animal welfare
Slaughterhouse	Provide slaughter service and process up to 5 heads of livestock at one time to ensure a safe, secure, and clean vicinity.	Sharia compliance on abattoir process
Treatment Area	Treatment for sick animals in the roofed area equipped with cattle crushes for handling and attending personnel.	Ensure the safety of products and security of personnel
Septic Ponds	Aerobic ponds are designed to accommodate the livestock dung and are dug out twice monthly while solid waste is dried up for fertilizer for internal use and open for sale.	Improvement in product waste for profit making and avoiding pollution to the environment
Source of Water	Water is provided by a pond that is located about 400 meters from the feedlot for drinking and cleaning purposes. A test is carried out to ensure that the water is free from harmful pathogens such as salmonella sp. and E. Coli sp.	Provide clean drinking water to avoid infection and cross-contamination
Source of Feed	A bulk of green fodder such as Napier, guinea, and ruzy grass for livestock diet, is harvested using a forage harvester machine. Alternative nutrition includes concentrated oil palm kernel pellets, Leucaena leaves, cassava leaves/chips, and corn.	Preventing harm to animal health and humans who consume the product
Workforce	Personnel attend to the feedlot's daily operation to maintain the feedlot area's cleanliness and feed the animals.	Provide sufficient salary and place as human welfare



Fig. 1. Integrated and Feedlot Program [11]

The company's commitment to cattle rearing and breeding is proved by its ability to provide mass production for the internal market. However, the company's future direction intends to produce its cross-breed herd with extension in quality and specific valuation; even though no new breed was produced in the last five years after the introduction and innovation of artificial intelligence in Selembu dan Brangus breeds [13]. The list of the KLPK Ternak Sdn Bhd herds product as Figure 2.



Fig. 2. KLPK Quarantine Facility [11]

4 Discussion

The study uses an interview approach to collect feedback and responses from the KPLK top management in addition to secondary data from works of literature and websites. The technique proves its ability as a precursor in the primary qualitative method in the case study [14]. The KPLK believes that whatever effort to reduce the cost of production and increase productivity will ensure that livestock development will succeed. This effort must not be limited to shortening the period of rearing or increasing productivity but also to introduce a new breed that fulfills the above requirement in a while. KLPK's top management supports the finding provided by the Malaysia Department of Statistics on the national capacity for cattle and meat production. Local livestock does not meet the supply of meat for commercial purposes compared to imported livestock. Roughly, the ratio of meat production of each cattle head produced is 1:1000 meat supply for consumers compared to foreign cattle which is 1:3000. Cattle production needs a standard valuation for each product including weight, breed, and health record including veterinary injection requirements for cattle products [3] maintained by the 2nd tier party.

Therefore, commitment and cooperation between the industry and government agencies such as the Veterinary Department are crucial to developing technology through the use of identification tags and livestock products and quality standards. This idea can be realized by using digital marketing and blockchain platforms. To optimize the quality of product and time consumption, the economy of scales is the best method to ensure KLPK remains resilient since there are no new breeds produced to suit the Malaysian climate. Previous breed innovations such as Selembu and Brangus are still used in addition to the KK type. The challenge brought by KLPK is the innovation of a new breed with a shorter rearing period for commercial purposes with the same meat capacity as a normal-sized cow. Meat supply by this breed should be able to increase from 35 percent to 55 percent compared to low-demand cattle parts [15]. The innovation of breed banks diversifies the quality of cattle and promotes the competition of breeders in the breeding industry through the control and distribution of breeding semen. Government agencies spearheading the development of breeds through artificial insemination can help livestock implement breeding methods as well as control the quality of livestock semen for commercial purposes [16].

As a local player, KLPK also agrees with the perception that imported meat is cheaper than local beef but in terms of meat quality, imported meat is known as a mixture of solid meat with other parts of the cow (known as block meat) and is an alternative to local beef demand. Malaysian meat's perception of local meat's cleanliness and halal status is not an issue compared to imported meat. However, the price of local meat is often compared with cheaper imported meat even though the quality of local meat is still low compared to imported solid meat that is not mixed with low-quality beef parts. Malaysians tend to focus more on the price of products than the quality offered by industry players. The definition of fresh in the context of meat products is a safe method of meat processing and the shelf life of the meat is 9 months. Refrigeration and disinfection processes are standards that benchmark the freshness of products rather than methods of open slaughter and sale. The safety of the product can be doubted if the meat preparation process is exposed to the risks mentioned above. The focus is more on productivity because a larger amount of meat from the parent is necessary for the purpose of local market marketing. High-value meat with premium quality is not the main focus of demand in Malaysia compared to abroad as a result of the purpose of using this product focused on local delicacy.

Conventional farming methods using subsidized cattle do not help small-scale farmers make these livestock products a source of sustainable income. Therefore, the government has shifted from focusing on small-scale farmers to leading the livestock industry through the introduction of the latest agro-agricultural policies by offering grants for the development of the livestock industry. This development plan is more integrated with the desire of industry players (in this case, the KLPK) as a catalyst to help small-scale farmers as a second-tier (2nd tier) that is resilient in the cattle industry. The 2nd tier breeders or farmers are bound by contracts for source acquisition and product sales to the companies involved. Blockchain technology will be utilized to obtain 2nd tier livestock resources and supply channels that are more efficient and fast to ensure that this effort becomes a source of sustainable income. The contract will bind the supplier the breeder and the buyer/end user. To understand the concept of supply chain innovation, the technology of blockchain can be described in Figure 3.

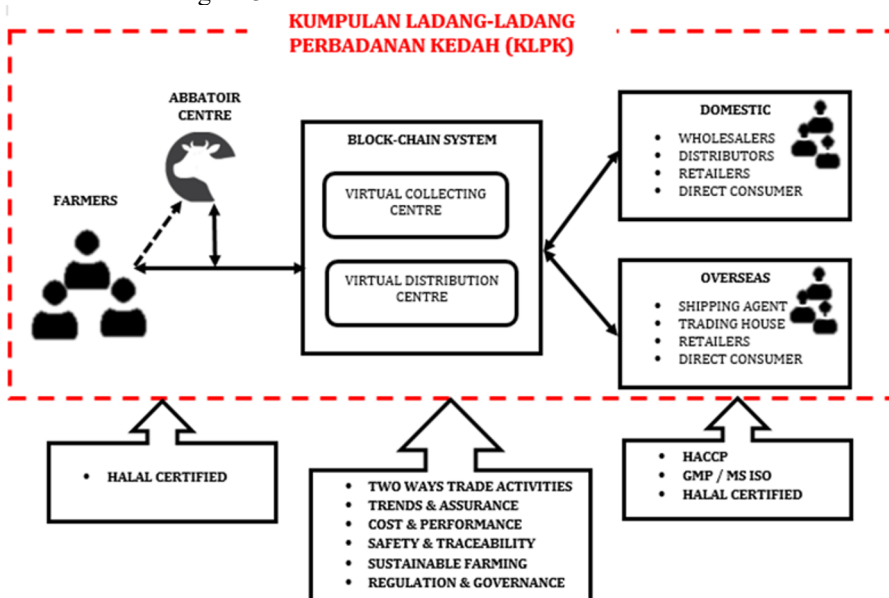


Fig.3. KLPK's Block Chain Approach [4]

The concept of livestock integration in the farm implemented by KLPK is only limited to the age of 15 to 18 months. The livestock then fattens in the feedlot for 100 days in order to get a suitable size and weight that can be commercialized in a short period. Compared to conventional methods of livestock farming (cattle-calf farming), live cattle rearing is still raised on plantations throughout the reproductive period. This intention is to ensure that livestock has the same weight and meat ratio as adult cattle that are suitable for harvesting. This includes the sale of live cattle to consumers for purposes other than meat supply. The quality of meat in the market is determined by the slaughtering process and the distribution chain that is managed at a controlled temperature to avoid contamination industrial livestock are required to obtain special injections for livestock to guarantee product safety to consumers except for Qurban (specific Islamic holy celebration) intention. The conventional practice of small breeders who receive cattle subsidies and manage the meat preparation process openly and without organized animal health records exposes consumers to bacteria and animal-borne diseases such as salmonella germs and stiff, foot, and mouth disease. This control needs to be cultivated through a new agro-agricultural policy that makes industry players mentors to small-scale livestock or satellite farmers. Generally, livestock production methods must include halal processes regardless of the breeder's religious background. This is based on the country having a Muslim population of more than 60 percent and Malaysia being the pioneer of the world's halal hub. Doubts about the halal issue need to be resolved by making halal a mandatory policy for livestock processing as well as adequate infrastructure in accordance with halal standards published by SIRIM Malaysia [17].

Existing regulatory constraints make supply chain flow face difficulties due to approval requirements and ancillary costs such as livestock distribution permits. Additional costs on average for each cattle farm are charged up to RM18.00 (in addition to permanent costs such as management, operations, and logistics) and these costs will be transferred to the cost of meat in sales. Government agencies nowadays are more inclined to act as data collectors and revenues rather than scientific facilitators, thus the industry hopes for these agencies to play a role in empowering the country's agro-livestock agenda. The main cost of animal husbandry in the country involves animal feed that needs to be worked downstream by industry players to avoid the burden of importing animal feed. This also creates an agricultural business development program to supply animal feed through integrated farming [18]. KLPK walks the talk by producing animal feed, particularly for internally used before producing cattle farms, therefore the control of operation cost can be considered as a soft landing toward the inflation effect.

5 Conclusion

Conceptually, a firm's or organization's success is measured by how well its supply chain planning is, but it also has an impact on the national interest. Over the years, this has drawn a lot of studies, including definitions, tools, and measuring techniques. Therefore, the role of sustainable farming in the livestock industry will ensure positive development for food security, thus making livestock important assets for vulnerable communities. In order to improve the value of "doing things correctly" and "doing the right thing" the study's goal is to protect the integrity and sustainability of the halal industry. The solution may be used differently in each country depending on the laws and regulations that are in place there. It is also impacted by each nation's demographics, ideologies, political will, and religious beliefs. There may be distinctions between Muslim and non-Muslim nations. The only matter that needs to be put into concern is how the issues that arise in this case study are to be tackled by various stakeholders for the interest of the nation.

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