

Empowering Kedah as the northern national hub for sustainable beef-cattle supply chain and production

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Abstract. High-value agricultural development is expected can create job opportunities, expanding business opportunities as well increase local and foreign investment. Encouragement in high-value agricultural activities can also increase income for entrepreneurs and maximize existing resources. To achieve the objectives of the research, the study aims to determine the direction of a sustainable livestock supply chain and the effectiveness of the existing slaughtering service center in Kedah. This includes factor influence in halal-logistics value creation in livestock supply chain and practices with Sharia compliance in livestock and abattoir activities. Since halal emerge as national agenda, supply chain and production also need to tap into the importance of health and hygiene of ruminant carcass especially in producing safe meat supply in the local market, practices among ruminant abattoir operators. This concept paper also will look at a new supply chain approach using the virtual marketplace to create new market segmentation and new consumer preference as well as a good return on investment. Empirical data will be collected by use a focus group. Therefore, using the Short Supply Chain, the research outcome is to ensure Kedah emerge as a national prominent hub for beef-cattle production and beef supplier in Malaysia.

1 Introduction

Rapid development of the Malaysia's economy over the past three decades has led in changing food intake patterns and a growth in demand for agricultural products. Domestic production, however, cannot retain speed with increasing demand. Current government policies, aim to regenerate agricultural production to become one of economic growth engines. Currently, there is also a government controls on domestic prices for specific food products.

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Some of those regulations impose additional costs to exporters and/or could confine access to Malaysia's domestic market. The efficiency of the agro-food segment is still considered very low as production mostly involves smaller scale and lacks the use of technology, which leads to low effectiveness of the overall agro- food industry. Furthermore, entrepreneurs or farmers in this sector still depend heavily on expensive imported livestock and meat as the local supply of quality livestock is still inadequate.

Malaysia aware on the important of food security issues especially in pandemic Covid-19 hit globally since March 2020. More than that, the food safety also emerge as new crucial issue occurred which consist of the hygiene and halal product process with include the whole value chain system with cater the either Muslim or the non-Muslim. Therefore, to pioneer effort over the issues regarding price competition, stocks readiness, health and hygiene beef product, marketing strategy over halal brand and technology implementation in supply chain, the study will provide conceptual paper on Short Supply Chain propose lead by Kedah Plantation Group Corporation (KLPK), a subsidiary company under state-incorporated control; to lead Kedah as northern national hub for beef-cattle supply chain and production.

2 Methodology

This study used a focus group approach to understand the factor contribute the effectiveness of short supply chain in sustainable of cattle-beef producing and halal logistics value. The focus group interviewed will be carried out in this study are influenced by Glazer and Strauss [13]. The respondents will recruit from selected producer which is involve directly with cattle- beef production and supply chain in Kedah State. Respondents will approach from government agencies and cooperative that involve with livestock. The selection of the respondent stratified by cluster of breeders, feed lotting and cluster of integration and involves with halal logistics, supply chain and sharia compliance in livestock abattoir activities. A total 32 people participated in this study, evenly distribute over 4 focus group, with six to eight persons per group. The group will be giving the topics need to discuss via a logical sequence of open-ended questions that encourage universal participation with the group. All the focus group discussion will be recorded and transformed into written text format by their complete transcription into English language. Question and comments by group facilitators were included to check their neutrality [14].

3 Results and Discussion

3.1 Malaysia beef-cattle reality

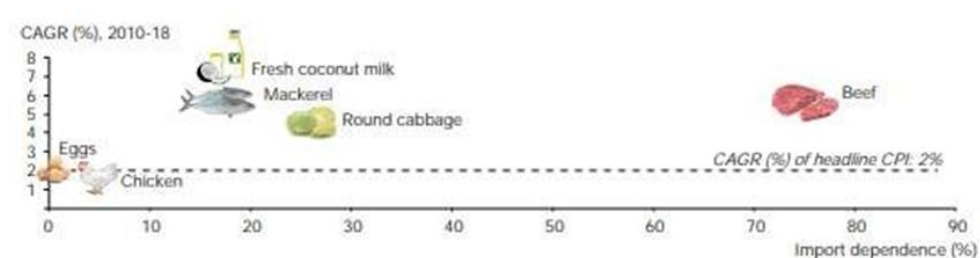


Fig.1. Compound annual growth rate (cpi) of selected food item 2010-2018.
Source: [7]

Statistically, more than 70 percent of the beef industry’s supply is imported, over the period 2014-2018 (refer Figure 1). The report revealed that wholesale and retail prices for imported beef did not decline even as the exchange rate appreciated from January 2017 to mid-2018, suggesting that the relationship between imports, exchange rates and prices is not as relatively related as is widely thought. Furthermore, final prices would also be affected by public policy and regulation, which would also directly impact price developments (e.g. health and safety standards).

Given that food items are commodities traded internationally, global demand and supply are also important determinants of import prices which are beyond the influence of any given country due to fluctuations in world food prices. Price could rise even if the exchange rates were constant, and price of imported beef from India have in recent years been on the rise, contributed by increased demand from countries such as China and Indonesia, even previously Malaysia was the sole importer of Indian beef. The livestock industry in Malaysia, especially ruminant livestock currently still in small-scale and have huge potential to be developed to secure supply domestic food as well as reducing imported meat (refer Figure 2 and Figure 3). Among the issues and challenges that faced in the development of this industry is lack of quality breeds, food price high for livestock as well as lack of expertise and labour. The transformation that the government expects in the livestock industry more focused on livestock companies commercially, livestock production quality, expansion of Good Animals Husbandry Practices (GAHP) and formula production quality livestock feed at price competitive. In addition, the R&D aspect in terms of supply chain (cattle and carcass) product/service and system efficiency in livestock will be emphasized.

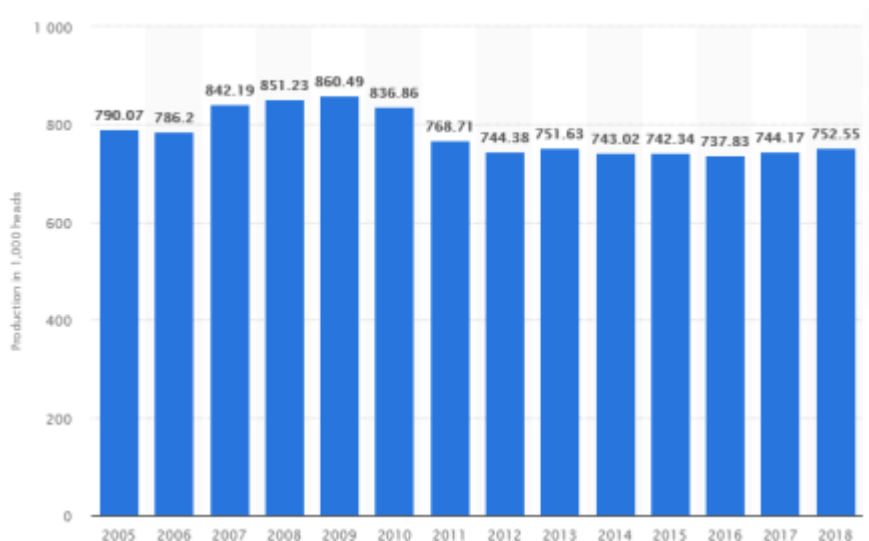


Fig. 2. Cattle production in Malaysia from 2005-2018.

Source: [12]

This, in turn, increases the production cost which burdens the farmers and leads to lower profit margins. According to the Chatham House Report [3] suggested that the global food system will come under renewed pressure from the combined effects of seven fundamental factors, namely population growth, nutrition transition, energy, land, water, labour and climate change. Some of the effects of change are already being felt. The prominent fact of the higher food prices has been listed as the end of the inexpensive food age. Common practice is likely to fail and will carry intolerable political, social, and economic environment, if nothing is done for improvement. The micro element of food

security involves safeguarding that individual have access to food in the right quantity and quality for healthy life. The macro outlook refers to basic policies that guarantee the unfortunate and backwards sectors (in particular food makers) are included in the growth process to increase their income and return correspondingly. This involvement proves the term food security functions in three compasses, that is, economic growth, poverty reduction and stability; much beyond the latitude of self-sufficiency, which was used as an indicator for food security measures for the nation. This also mowing alongside with international agenda (Sustainable Development Goal – SDG) and National Shared Prosperity Vision 2030 (Key Economy Growth Activities –KeGA 13) literally describe through National Agro-Food Policy 2.0.

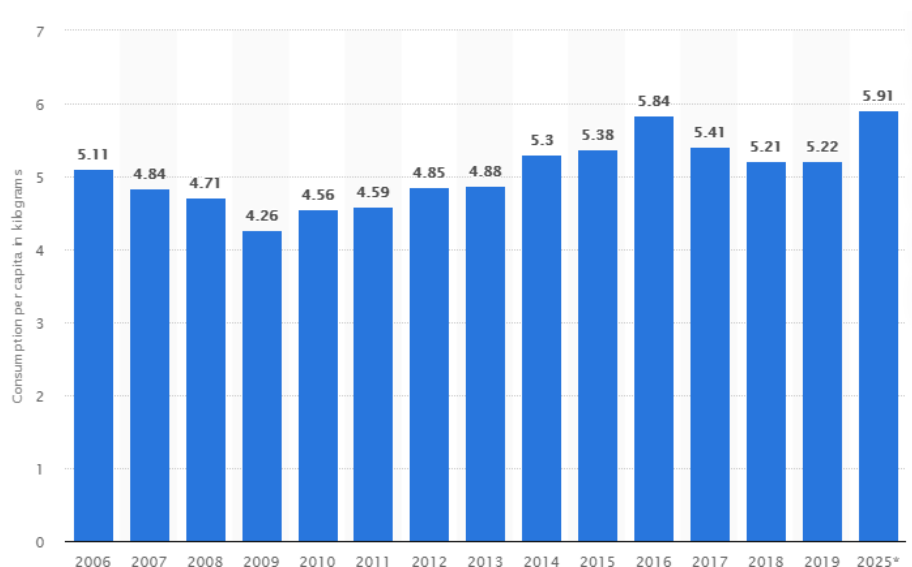


Fig. 3. Beef and veal consumption per capita in Malaysia 2006 – 2019 (with 2025 forecast).
 Source: [12]

As the population grows, it is crucial to consider the long-term impacts on the environment in line with the livestock availability for domestic consumption of Malaysian at a reasonable price. Besides, it is important to guarantee sustainable production of livestock for present and future generation. Based on [2], there are three issues of food security. First issue is a rising demand for food commodities. This is due to expected increase in population for coming next few decades that will multiply the demand of food. Secondly, changes in the type of food that people consume have high probability. The increasing of people’s per capita income also will give effect on the type and nature of food that will produced. Lastly, the price of the food will rise due to increase in price of food commodities in global [2].

Based on the problem at above, Kedah Plantation Group Corporation (KLPK), a company with major in farming industry northern region of Malaysia; aware of the important of innovation in production process as a must and the reduction in production time and cost will provide revenue to the company while the quality improvement not only provide loyalty to customer but also reflect the sustainability of company in long-term. Therefore, the research will focus on micro solution for the benefit of the company and emerge as catalyst for macro solution in strategy alignment for industry development.

Healthy and sustainable food system linked to food security and indirectly contributes to food access. Symbiosis effect on food security also include people earn living through farming, wages growing, safe serving food, supply process such as commodities growing,

catching/rearing, producing, processing, transporting, retailing and serving food [11]. Based on [10], prove through studies that consumer prefer to purchase local foods with various reason include health concern, environmental issue, perception on local quality better than import product, enjoyment of local outlet purchase, at support over community products, local farmers and economies. The finding supported by [14] and [6] stressed that markets able to create the relationship building between consumer and producer as such consider as unique experience and essential. The market also provides food-related activities, place-building, also neighborhood-based relationships [1]. Literally, the study clearly aware of the limitation faced by the company (and industry as a whole) was based by three (3) main issues. These are:

- The existing ecosystem is not conducive to facilitate beef cattle industry:
- The fees impose by government along the supply chain resulting product cost to high up
- The overlap and contradict between government agencies complicate the marketing of imported and local products and the development of the industry.

The supply chain management can be seen as a core factor in a strategic approach to increase efficiency, accomplishment, and performance in companies [8]. Supply chains need to be adapted to changing of technologies and approach in order to remain competitive in the market. Process and system are the core areas that need to be reviewed in order to maximize the performance and value of the supply chain. A transition in each of these would lead to a shift in farm economics and maybe even in farm finance. The price for the actual cost of production will be from the purchase of the cow; a cost occurred along the supply chain. This includes the expense of feeding, vaccination, quarantine, and additional condition the cow will comprise of the overall cost of breeding of the cattle. Therefore, this research is trying to match the best outcome for company to improve their production process through the effectiveness and efficiency of supply chain approach. This is to provide solution in innovation of process such as the establishment of virtual collection and distribution center and the adoption of Short Supply Chain (SSC) facilitate by block-chain strategy. To achieve the research goal, the objective, hypothesis, and framework as above:

1. To apply the effectiveness and efficiency of short supply chain (virtual collecting center, virtual distributing center - block chain) in beef cattle production time and production cost.
2. To implement the effectiveness and efficiency of halal logistics value creation and Sharia compliance in livestock and abattoir activities.
3. To implement the effectiveness and efficiency of short supply chain (virtual collecting center, virtual distributing center - block chain) in beef cattle production marketing.

This concept paper proposed Short Supply Chains as underpinning theory to empowering Kedah (through KLPK) as a hub for beef-cattle in northern region. The theory stressed to minimize the number of intermediaries, which allowed a direct contact between the producer and the consumer. At global stage as example, European Commission [9] has defined Short Food Supply Chain (SFSC) as the foods flows involved of identified by, with traceable farmer; which to minimal or ideally nil the number of intermediaries between farmer and consumer. Throughout the SSCs, producers are believing able to offer a price premium in market [5] since an effort of elimination of the middleman, and also enables farmers to receive a greater share of the profits, which the diversify and add value of the product that would not usually be marketed [4]. Therefore, SFSCs contribute to rural development and economic regeneration; create new economic spaces, reversing the declination of rural services and the depletion of physical infrastructure food and farming. Indirectly, SFSCs can act as a catalyst for rural economic regeneration and dynamism, and also be seen as new sources of value added which can be retained locally. Based on the theoretical discussion, the study proposed a conceptual framework as Figure 4.

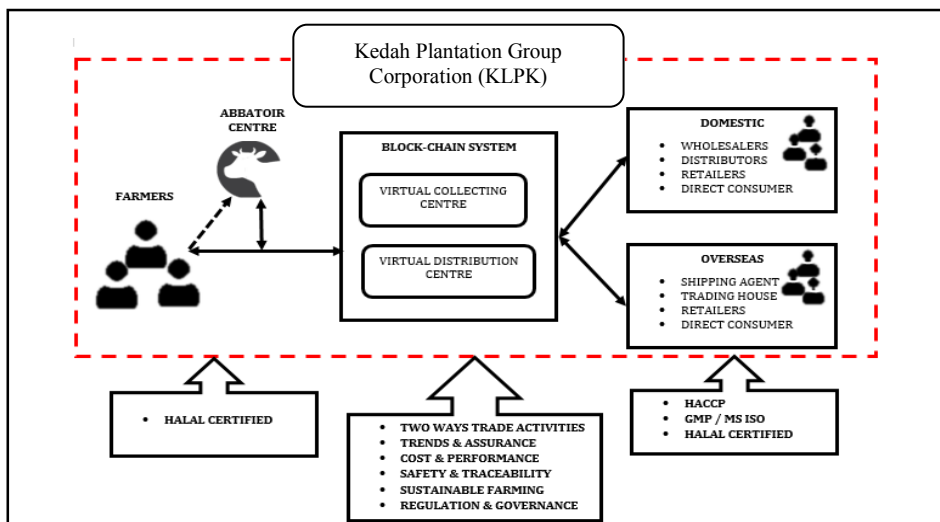


Fig. 4. KLPK’s block chain approach.

Refer to Framework 2.0 at Figure 4, is a conceptual framework of enhancing the effectiveness and efficiency of integrated stakeholder chain system in single block with provide innovation in value creation. This includes the livestock, abattoir cluster, domestic and overseas players such as manufacturer, distributors, wholesalers, retailers, logistics provider and even direct consumers. The graphic grouped farmers and abattoir center as the supplier of the commodity with consist of cattle or/and beef supply. Mentioning farmers in this subject, most of them consider as self-sufficient cattle breeder in small scale and very few involve in commercial scale. In addition, there are also government agencies that offer loan schemes with the concept of ‘pawah’/borrow. The TRUST Loan Scheme (Transformasi Usahawan Ternakan) established in 2005 by the Department of Veterinary Services under the Ministry of Agriculture and Agro -Based will hand over a number of animals to participants whose applications are approved and have to repay the loan either in livestock or cash. KLPK’s play as the digital administrator of virtual collecting and distributing information center, while domestic and oversea players are the consumers in block chain system. The supplier accountable to provide sufficient information regarding the record of commodity including health and hygiene of the livestock and slaughter process, livestock feed, list of commodity’s producers and labors identification, number of states abattoir premises, qualification of abattoir to meet Sharia compliance requirement, livestock vaccination history, route and logistics preparedness to cater added cost and contamination issue, and few other reliable information. At the other hand, the administrator will determine the members of the network based on the priority of the transaction. The framework also suggests list of members including the manufacturers/distributors, wholesalers, retailers and event direct consumer such as the household. Household for instant becoming as new segmentation of marketing goal for industry players to straightly communicate, since the advancement in social media and digital marketing platform rapidly grow.

The network platform prepare by KLPK will provide center information for collection and distribution, which can review by all platform members. The network members can confirm any of data transaction to be consider as pre-agreed condition before administrator share specific information to the members as ‘need-to know bases before each member able to consume full information and proceed for agreement, consolidate by the administrator of the block chain system. The main characteristic of the system is the two ways

communication between the stakeholders as an essential ingredient for success promotes compliance on the part of the industries and reduces the policy implementation in costs and times. This also promote collective development and new digital platforms as a tool to enable engagement, such as digital marketing, e-commerce, crowd-sourcing, and online transaction, includes the use of social media to connect people domestically, even internationally.

Therefore, the purpose of the framework is to improve service delivery and support system by enhancing the technology and innovation through implementation of block chain approach. This not only improve the commodity quality and safety, but also focus on the development of high values products that able to offer the competitive way of production, marketing, time consumption and pricing. This effort must also parallel KLPK's technical competency to meet the appointment system and organizational works. The preparedness of the management commitment, inspirational leadership, proper recruitment, incentive framework, compensation and training must also be considering other than policies implementation and strategies. Lessons from the pandemic in this regard can be views by states to strengthen plan for similar shocks, and to make progress towards more coherence of actions through their profit-investment arm.

4 Conclusion

Effort to empower Kedah as the northern national hub for sustainable beef-cattle supply chain and production must be able to improve strategies in food security, to increase productivity and competitiveness, strengthen and creating growth beef-cattle industry, and conserve natural resources sustainability for long term outcomes. High-value agricultural development is expected can create job opportunities, expanding business opportunities as well increase local and foreign investment. Initiative such as virtual collecting and distributing center as block –chain need to be in place for supporting industrial development production of food commodities such as industry input, creation and strengthening of infrastructure and info-structure, service consolidation logistics as well as strengthening market information and network marketing. Most importantly, implementation of digital strategy will be able to revise existing policy which holding back the effectiveness and the efficiency of commodity value chain and halal and tayyiba - oriented agricultural and livestock products and services. This can be considered as a marketing strategy that targets not only the local market, but also the international market. Strategically, the industry players must take serious consideration on enhancing the digital marketing since costumer preference over online shopping increase over year especially in pandemic situation.

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