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**LIVESTOCK PRODUCTION IN KEDAH, MALAYA
(1909–1940): THE KEY TO ACHIEVING FOOD
SECURITY, ECONOMIC GROWTH, AND RESPONSIBLE
CONSUMPTION UNDER THE BRITISH**

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ABSTRACT

The expansion of the British Empire during the 18th and 19th centuries significantly shaped livestock policies and agricultural practices in their colonies. It is argued here that understanding the British colonial experience in Kedah offers valuable perspectives on how responsible and sustainable livestock production can contribute to addressing the

challenges of food security around the world. The current academic study employed a historical method and qualitative approach to investigate the impact of British colonial rule on livestock production in Kedah, Malaya, from 1909 to 1940. The study delved into the British efforts to enhance livestock production in Kedah and highlighted the pivotal role played by livestock production in achieving food security, promoting economic growth, and encouraging responsible consumption. Also, the current study revealed the challenges the British faced in animal husbandry activities during this period. The findings demonstrated that the British had successfully developed the livestock sector in Kedah, proven by the increased meat production, livestock numbers, and income. As a result, this historical study provides valuable insights for addressing contemporary global issues related to food security.

Keywords: Kedah, British Malaya, livestock, food production, food security.

INTRODUCTION

The issue of sustainability in food production has garnered increasing attention in recent years, as concerns over climate change, resource depletion, and food security have become more pronounced. Food security can be interpreted through the life situation in which every individual in a country has physical and financial access to sufficient, nutritious, and safe food sources, thus allowing them to achieve healthy and active lives (Prosekov & Ivanova, 2018). The current decade has seen intense debates about food security issues, such as in Sri Lanka (Berita Harian, 2022), as the world struggles with the worst food crisis in history, to the point where it affects and threatens human life universally (Pinstrup-Andersen & Watson, 2011).

In Malaysia, the country's rice production decreased by 1.2 per cent annually, from 2.35 million metric tonnes in 2019 to 2.34 million metric tonnes in 2020 (Zakaria et al., 2021). Though this is not surprising, given that Malaysia's rice supply is reliant on imports from Vietnam and Thailand, which has long since demonstrated Malaysia's incapacity to produce its own supply of food to meet the demands of the country's population from time to time (Laiprakobsup, 2019). However, over time, due to the sudden increase in global grain prices,

certain countries have ceased their food export as an effort to deal with the threat to the security of their own country's food supply (Alexander et al., 2023). In conjunction with Russia's invasion of Ukraine, India's decision to halt global wheat exports has been further influenced by other factors, such as severe heat waves and inflation (Nagarjuna, 2022). The decision by India certainly threatens the instability of food sources around the world. Despite that, the decision does not affect the supply for general consumption in Malaysia, as 80 per cent of the country's wheat supply is imported from Australia, the United States, Canada, and Ukraine (Dasar Keselamatan Negara, 2021–2025), Malaysia has taken steps to ensure a stable food supply for the future. Another example is Malaysia's restriction on the export of chicken which affects the supply of frozen chicken to Singapore (Lim, 2023).

The possible drastic actions by exporting countries have raised concerns about food security in Malaysia, notwithstanding the efforts by the Malaysian Government to refute the matter through the country's national media. Accordingly, it is necessary for the Malaysian government to do something to ensure that the level of food security is adequately maintained to meet the needs of the people in Malaysia. Among the most important food supplies in Malaysia are chicken meat, beef, eggs, and rice (Abdul Raji et al., 2017). This highlights the importance of the agricultural sector, especially animal husbandry, for guaranteeing food security in Malaysia. The discussions and research related to food security concerns in Malaysia have gained recognition in global research (Syafuddin Tan et al., 2023). However, it is evident that research related to food security issues in Malaysia has overlooked the historical experience when it was faced with food security issues during the period of British rule in Malaya.

The state of Kedah has become one of the most important economic sectors in Malaysia due to its paddy cultivation and rice production (Hill, 2012; Saari, 2022; Kamaruddin & Musa, 2023). The cultivation of rice in Kedah has guaranteed food security in the state and other states of the country, such as Penang, through its rice export activities within the specified period. The involvement of the people in Kedah with rice cultivation was intensified by the British. This is evident by the British census in 1911 which reported that 88,491 people in Kedah were involved in agricultural activities (Abdullah & Mohd

Noor, 2019). In addition to the cultivation of rice, the livestock sector in Kedah also exhibited an interesting development and held significance in the economic development of Kedah even before the country's independence. The growing livestock sector in Kedah, through an increase in the number of animals and meat sales, enabled an increase in meat exports. This resulted in the British increasing the local meat exports to the United Kingdom, in addition to meeting the domestic demand within Malaya (S.C. 2007/55).

The example of the situation in Kedah under the reign of the British shows that the issue of food security was one of the main focuses for the British to meet internal and external demand for raw food resources between 1909 and 1940. Thus, it is justifiable that the British accorded significant importance to the livestock sector in Kedah, leading to its notable growth and improvement. Therefore, this research was aimed at investigating the impact of British colonial rule on livestock production in Kedah, Malaya, from 1909 to 1940. The insights obtained in the current study were derived from a historical investigation. The approach offered valuable guidance for tackling current global concerns pertaining to food security. The present study has held firmly to its belief that an understanding of the British colonial presence in Kedah could provide valuable perspectives on how fostering responsible and sustainable livestock production will help address the prevailing food security challenges worldwide.

RESEARCH METHODOLOGY

The current study employed historical research and qualitative methods. Several actions and processes were carried out, namely, heuristics, criticism, analysis, and historiography to achieve the study's objectives (De Mussy, 2023). First, a heuristic process was implemented through the search for primary and secondary materials and sources. For the acquisition of primary sources related to the research, the researchers visited the National Archives of Malaysia, Kedah/Perlis Branch National Archives, the Kedah State Chief Minister's Office, the Kedah State Public Works Department Office (JKR), and other relevant departments. On the other hand, secondary sources were obtained through the National Library of Malaysia, the Kedah State Library, and the libraries of public institutes of higher education (IPTA) throughout Malaysia. Next, the primary and secondary source criticism was conducted through a comparative

analysis with other resources such as books, chapters in books, journals, scientific training, and so on. This process was to determine the reliability and validity of the resources obtained, as well as to isolate inaccurate information related to this research topic. This study then conducted an analytic process that involved drawing conclusions based on primary and secondary sources. This step facilitated the synthesis of the chosen resources in order to produce the findings of this study. The last process was the writing of history or being engaged in historiography. Historical research could be effectively conducted by employing the aforementioned processes.

LITERATURE REVIEW

The period from 1909 to 1940 witnessed significant changes in the landscape of livestock production in Kedah, as it transitioned under British colonial influence. However, a limited number of research has been conducted on food security in Kedah before Malaysia's independence in 1957. This is because Kedah has been known as the state of *Jelapang padi* (the state of rice production) because of its active rice cultivation activities. As the primary food-producing state, Kedah continues to play a role, and maximise water, land, and energy for the country's rice production. Thus, Kedah's withdrawal as the country's main food-producing state will inevitably affect the country's food security as the country may be unable to produce enough food supply to meet the demands of the Malaysian population from time to time. Nonetheless, there were previous studies which examined the economic development of Kedah as a result of its animal husbandry before and after the country's independence, although without clear representations of food security issues.

According to Md. Mustafa et al. (2015), animals such as elephants, buffaloes, cows, and horses were recognised as major contributors to the main means of transportation within the Malay community in the past. Rudner (1979) provides a comprehensive exploration of how colonial agricultural policies influenced the transformation of peasant society in Malaya during the late colonial period. However, this work did not explicitly address the impact of these policies on the livestock sector in Malaya. Sharif and Mohd Noor (2017) later stated that Kuala Lumpur was famous for its milk business during the colonial era through the development of animal husbandry. Abdullah and Mohd Noor (2019) asserted that the development of the agriculture

and livestock sector in Alor Setar, Kedah before the independence of the country was dependent on the distribution of good water supply. For example, the Kerian Irrigation Plan facilitated the increase in the total area of rice cultivation in Kerian, Perak as it allowed good water sources for its rice cultivation (Mohamed Sharif, 2021). However, the research failed to link the importance of food security in Kerian, Perak with the rice planting activities in the area, even though Kerian is commonly referred to as the 'Rice Bowl of Perak'.

Crotty (1967) revealed an increase in the livestock industry from 1956 to 1970, despite the shortages in the context of the 'supply and demand side' in peninsular Malaysia. This was influenced by British colonial agricultural policy mandated after independence, though with no specific focus on livestock (Shimomoto, 1980). The policy centres on guaranteeing the availability, accessibility, and quality of rice in Malaya (Bala et al., 2014). However, after the country's independence, particularly since the 1970s, the government has implemented a protectionist framework to ensure a favourable price for paddy farmers, help them attain self-sufficiency, and shield them against market uncertainties. However, studies on the livestock industry are limited. A. Bakar's (1980) study on the livestock industry focused on the use of buffalo farming in small-scale production systems in Malaysia. However, Tuong Vu (2007) believes that animal husbandry activities in Malaysia can be increased if it involves the use of more modern tool and equipment. While existing literature has provided insights into various aspects of livestock production, a noticeable research gap pertains to the need for a comprehensive study that systematically examines the interplay between livestock production, food security, economic growth, and responsible consumption within the specified timeframe is evident. Hence, the current study aimed to address this research gap by providing a holistic analysis of the multifaceted roles of the livestock sector during the British colonial era in Kedah, Malaya.

RESULTS AND DISCUSSION

The Background of the Livestock Sector in Malaya Before Colonialism

In general, the livestock sector in Malaya before colonialism served the purpose of meeting the domestic needs of family members who

led simple lifestyles, and also due to a lack of commercialisation and (Iqbal et al., 2015). For example, prior research on the economic activities of the Malays during the 19th century characterised the Malays' economic status as self-sufficient within a closed context, less competitive, and yielding small-scale production outcomes with relatively low levels of productivity (Abdul Aziz, 2011). Gullick (1992) explained that the Malay economic system was semi-self-sufficient as they were only able to generate production resources to fulfil their personal and family needs and any surplus resources were sold to obtain money or other necessities that they were unable to produce.

In addition, the traditional Malay community had a fairly close relationship with farm animals. This is because the life of the Malay community depended on the energy of their livestock to facilitate their agricultural work, as well as being a medium of transport. Cows, buffaloes, goats, and sheep were farm animals that were often raised and protected by the Malay community (Zainal Abidin & Hamzah, 2018). However, animal husbandry activities were only carried out on a small scale for the survival of food and used as the exchange of surplus products through barter systems (A. Bakar, 1980). Animal husbandry activities were carried out by various social classes of the traditional Malay community, including the nobility or the common people (Gullick, 1987). For example, records that were written in traditional Malay texts revealed the history that a Malacca governor, *Bendahara Seri Maharaja*, had a stable of farm animals. For example, Ahmad (1979) had pointed out that in the *Sulalatus Salatin (Sejarah Melayu)*, there was the story that:

'Adapun segala anak buah Bendahara Seri Maharaja, jika pergi berburu kerbau jalang atau rusa, jikalau ia tiada beroleh, maka ia singgah pada kandang kerbau Bendahara Seri Maharaja, maka ditikamnyalah kerbau itu dua tiga ekor; disuruhnya sembelih; maka diambil sepaha dihantarkan kepada Bendahara Seri Maharaja.'
(Ahmad, 1979)

Ahmad (1979) demonstrated the relationship between the locals, represented by all social classes of traditional Malay society, and farm animals. Although the statement involved Malay dignitaries from different social hierarchies, farm animals continued to have a close symbiotic relationship with their rearers (Hussin et al., 2009).

Livestock was indigenous to the culture of the Malay community. For example, farm animals such as cows, buffaloes, and goats were used as gifts for engagement and wedding ceremonies in traditional Malay community life (Mohd Ali & Abd. Salam, 2021). According to the notes in *Misa Melayu*, farm animals such as cows and buffaloes were used in sports activities and also in performances to celebrate noble or royal families. For example, during the engagement ceremony of Raja Budak Rasul with Raja Muda, the son of Sultan Muzaffar Shah, the Malay community presented buffalos, goats, chickens, and ducks as gifts. Apart from presenting farm animals as gifts, cockfighting activities were also conducted to celebrate the engagement ceremony (Md. Mustafa et al, 2015). Also, buffalo fighting was a favourite social event of the people in Kedah before the country's independence (Saari et al., 2021). While in Pahang, goats were reared for goat fighting activities, which were pioneered by the Sultan of Pahang, during the colonial period. The activities were held according to the seasons in Pekan, Pahang (Milner, 1982).

The Background of the Livestock Sector in Malaya During British Administration

The expansion of the British Empire in the 18th and 19th centuries had a profound influence on livestock policies and agricultural practices in its colonies. British settlers introduced European livestock breeds, such as cattle, sheep, and horses, to these regions. These European breeds were considered superior in terms of meat or milk yield productivity compared to local livestock. Thus, the introduction of new breeding techniques and management methods represented a fundamental shift in livestock practices, with its aim of enhancing livestock production to meet the regions' dietary and economic needs (Trow-Smith, 2013). However, the introduction of European livestock breeds and management practices frequently conflicted with the traditional livestock practices of the local populations in the colonies. These traditional practices have developed and evolved over generations, tailored to the particular conditions prevalent in the local environment. As a result, the arrival of European breeds disrupted these practices and led to changes in the grazing methods, herd management, and the overall agricultural landscape. This transformation led to conflicts and tensions between British settlers and the indigenous peoples, as well as among different colonial groups (Anderson, 2006).

British India served as an example of the conflicts that arose when traditional colonial customs collided with the introduction of

European livestock breeds and management practices. To illustrate, the British colonial administration introduced European cattle breeds like the British Shorthorn and Jersey cattle to India during the 19th and early 20th centuries, citing their higher productivity in terms of milk and meat. However, the indigenous zebu cattle, which were indigenous to the local environment, played an indispensable role in Indian agriculture. The cow, revered and regarded as sacred in Hinduism, held immense cultural and religious significance. As a result, the slaughter of cattle for meat production by British settlers raised profound tensions and resistance. The economic disruption resulting from the superior productivity of European cattle threatened the livelihoods of Indian cattle herders, further amplifying the discord. Also, the arrival of European cattle breeds disrupted established grazing patterns, challenged indigenous herd management methods, and created friction over breeding practices. In short, this introduction precipitated significant conflicts with traditional cattle-rearing practices entrenched in Indian agriculture, culture, and religion. The example from British India highlights the intricate complexities of colonial agricultural and cultural dynamics, shedding light on the conflicts that arose when European livestock practices clashed with long-standing traditional systems in its colonies (Hardiman, 2000).

To be sure, there was a comparable clash between European livestock practices and the traditional approaches in Malaya. British colonial policies and the introduction of European livestock breeds disrupted established traditional livestock management methods and caused tensions with local populations. While limited studies directly have addressed this issue in Malaya, one relevant book entitled, '*Land, Labour and Diet in Northern Rhodesia: An Economic Study of the Bemba Tribe*', by Audrey Richards (1995) offered a comprehensive examination of the effects of colonial agricultural and livestock policies on indigenous communities. However, the work primarily focused on Northern Rhodesia (modern-day Zambia). Still, the work represented the disruptions to traditional agricultural and livestock practices across the British Empire, including Malaya.

The involvement of British imperial power contributed to the livestock sector in Malaya (Shennan, 2015), resulting in the expansion of animal husbandry activities and the changing of the economic landscape in Malaya during the British administration. Moreover, the introduction of neo-mercantilism in the Federated Malay States (FMS) enabled

the British to develop an export economy with a high profit value (Mokhtar et al., 2021). This situation impacted the livestock sector, as this commodity became one of the most important British exports to ensure food security in the United Kingdom and other countries during the colonial period (S.C. 2007/55). In fact, this situation could also meet the needs of food resources in Malaya and thus, facilitated the British administration in their efforts to strengthen animal husbandry activities in the colony (Shennan, 2015).

British actions to increase the production of raw resources, such as that by its meat producers, ensure the survival of the British in the industry (S.C. 2007/55). This prompted the British to focus on the production of dairy products, chicken, ducks, and pigs for the purpose of producing new commodity products such as cheese, butter, milk, cream, and so on. The importance of dairy products, for example, caused the British to import innovative equipment into Kuala Lumpur through Crown Agents. With the help given, the milk business in Kuala Lumpur expanded and reduced the reliance on primitive methods during the filtering and packaging processes. The British introduced Alpha Filter No. 3 and Extra Filter Medium to better filter milk as well as a Hot Water Mixer to ensure high volume well-stirred milk. As a result, the commercialisation of the milk business in Kuala Lumpur began in the early 20th century, leading to the production of various brands such as Nestle's Milkmaid Sweetened Condensed, Borden's Eagle Sweetened Condensed, Nestle's Ideal Unsweetened Condensed, and Borden's St. Charles Evaporated Cream. Therefore, the development of the milk business in Kuala Lumpur was driven to meet the commodity needs of importers in the United Kingdom and to ensure that food security was unaffected in the country (Sharif & Mohd Noor, 2017).

The establishment of companies such as the Cold Storage Company in Malaya was the result of animal husbandry activities. The Cold Storage Company, based in Kuala Lumpur, Penang, and Ipoh, was responsible for providing refrigerated storage facilities to meet the needs of meat-based food in Malaya. The company allowed the storage of meat supplies such as beef, buffalo, sheep, goat, and pig to make these raw resources last longer, as well as increasing the export of meat outside Malaya. According to the Singapore Free Press,

‘We shall be able to keep complete stocks always on hand and shall therefore be in a position to carry on the trade

in an up-to-date manner so that we hope for better results in the future.’ (The Singapore Free Press and Mercantile Advertiser October 17, 1911)

As a result, the British no longer worried about the issue of food security in Malaya and in the United Kingdom (The Straits Times September 11, 1909). The storage charges were also reasonable. This has been further reinforced by the statement by Mr. McDougall,

‘Meat and fish sold at the Cold Storage are cheaper than locally slaughtered meat or fresh fish, and the progressive aim of the Cold Storage is to develop its facilities to provide quality food at reasonable prices to as many people as possible.’ (Singapore Standard July 4, 1951)

In addition, this refrigerator storage possessed good facilities that were recognised by outside parties. For example, Western Australian trade representatives were satisfied with the refrigerator storage facilities in Kuala Lumpur, Penang, and Ipoh. According to the Malaya Tribune,

‘The members of the Delegation expressed themselves satisfied with their visit and are hopeful of future trade relations between the two places.’ (Malaya Tribune November 23, 1921)

Moreover, the British’s active involvement in the dairy industry and meat production, and the introduction of the Cold Storage Company increased the role of the British in farming activities in Malaya. Although, the British actions to strengthen the livestock sector in Malaya were intended to guarantee food security in the United Kingdom, it threatened food security in the home country (S.C. 2007/55).

British Efforts and Challenges in Improving the Livestock Sector in Kedah, 1909–1940

Prior to and following World War I, the British Empire experienced a critical need for affordable sources of raw materials to sustain the industrial sector within its homeland (Williams, 2013). In the 1920s, the British government initiated an agricultural development policy with the following dual objectives: (i) securing economical raw material

supplies and (ii) generating employment opportunities for the British populace by fostering economic growth in the colonies (Hobsbawm, 1999). Consequently, the British government dedicated its efforts to enhancing the colonies' capabilities by facilitating the expansion of raw material production. The provision of raw materials from the colonies significantly reduced Britain's dependence on imports with high tariff rates from foreign countries (Gallagher & Robinson, 1953). This policy had a profound impact on the development of the colonial economic landscape in Malaya, specifically through the reinforcement of the Malay states including Kedah, as the principal providers of raw materials to the empire.

In 1923, the Imperial Economic Committee (IEC) was founded to assume a pivotal role in coordinating marketing activities and identifying sources of essential raw materials and food products required within the imperial market. Priority products encompassed fruits, dairy items, seafood, tobacco, and livestock. The strategic importance of a low-cost raw material supply functioned as a form of economic safeguard for the United Kingdom against rival European nations. This safeguarding of the low-cost raw material supply was necessitated by the United Kingdom's overreliance on raw materials from Europe, which had imposed unfavorable export expenses on its traders and industrial sectors (Darwin, 2009). The supervision by the Colonial Office over the administration of the Department of Agriculture in Malaya constituted a deliberate strategy employed by the British to facilitate the extensive enactment of agricultural development policies in Malaya, including livestock (Arman et al., 2016).

The livestock sector gained a place among the residents of Kedah between 1909 and 1940. The people of Kedah kept and bred cattle, buffalos, sheep, goats, pigs, and horses to be used for agricultural activities, food production, transportation, and others. Animal husbandry activities were also carried out throughout Kedah which consisted of three main areas, namely North Kedah, Central Kedah, and South Kedah. North Kedah consisted of the districts of Kota Star, Kubang Pasu, Padang Terap, and Langkawi. Central Kedah consisted of the districts of Kuala Muda, Baling, Yan, and Sik. Finally, South Kedah consisted of the districts of Kulim and Bandar Baharu (SUK 3970–1353). Therefore, the current research focuses on farm animals, particularly cattle and buffalo, in all these areas.

Establishment of the Livestock Quarantine Centre in Padang Besar, Perlis

The efforts made by the British in safeguarding the interests of the livestock sector in Kedah were evident through the establishment of an animal quarantine centre in Padang Besar, Perlis. Kedah, Penang, and the Federated Malay States agreed to cooperate and establish an animal quarantine centre in order to deal with the problems of infectious animal diseases that were becoming more contagious at the time (SUK 2375–1344). Initially, the establishment of this quarantine centre was proposed by Penang resident councillors, with a special vote of USD20,000 for the construction of a quarantine centre in Padang Besar and this was approved in 1927 (Malaya Tribune December 12, 1927). The establishment of the quarantine centre was also intended for the inspection and quarantine of farm animals imported from Siam to Kedah, Penang, and the Federated Malay States. This was a cautious action taken by the British because of the spread of a dangerous infectious disease epidemic resulting from infected animals imported from Siam. An example was the spread of rinderpest, which started from infected animals, cattle which were imported from Siam in 1926 (The Straits Times June 2, 1926). In order to avoid the same incident from happening again, the British established the quarantine centre in question.

The cost of establishing the animal quarantine centre in Padang Besar was USD60,000. The cost was shared between the states involved, namely Kedah, Penang, and the Federated Malay States. The administrative organisation of the quarantine centre in Padang Besar was managed by Kedah's veterinary surgeon, under the guidance of a general advisory committee (The Singapore Free Press and Mercantile Advertiser December 13, 1927). The centre focused on imported farm animals, especially from Siam. For instance, there were records of pigs inspected and quarantined in Padang Besar. The pigs imported from Siam were first quarantined in Padang Besar before being sent to Penang (S.C. 2010/55). The establishment of the quarantine centre in Padang Besar has made a significant contribution by effectively mitigating the spread of infectious diseases among farm animals at an early stage, saving the livestock sector in Kedah as the disease could affect Kedah's economy. Therefore, the British's initiative in establishing an animal quarantine centre in Padang Besar safeguarded the interests of the livestock sector in Kedah.

Improvement of the Livestock Sector Management System in Kedah

The British colonial administration in Kedah prioritised the development of the livestock sector by improving the livestock management system. The British considered the traditional management of the livestock sector in Kedah to be problematic; thus, needed to be reformed. Before the presence of the British, the licensing system that was practiced in the farming systems in Kedah was designed to calculate the actual quantity of livestock in the state, with more focus on cattle than other livestock. In Kedah's annual report in 1909, the use of the licensing system was explained,

‘Under the Enactment (as subsequently amended) every owner of an animal is required to obtain a ‘license’ for it as soon as it attains the age of 15 months, and every imported of animals is required to take out a ‘license’ at the frontier.’ (CO 716/1).

The licensing system allowed animal owners to sell and buy livestock after the animal was registered by the *penghulu*, with a charge of 25 cents each. Failure to register their farm animals resulted in failure to obtain registration documents necessary for business and the animals would be assumed as wild animals or stray animals. The inability of farm animal owners to prove ownership through registration documentation led to an increase in the number of unresolved cattle theft cases in Kedah. Worst, reports revealed that some cattle owners had to pay the thieves to get their cattle back (The Singapore Free Press and Mercantile Advertiser July 7, 1922). The Raja Muda of Kedah once tried to solve this problem by assigning a Sikh who worked in the Veterinary Department to investigate cases of cattle theft and collect duties on the import and export of cattle. However, the system used was considered ineffective because many cases of the theft of farm animals, especially cattle, that occurred at that time involved insiders. The headmen were found cooperating with thieves in covering up their theft cases by forging animal license registration documents. The attitude of such irresponsible *penghulus* was revealed in the notes of the Kedah report 1327 A.H.,

‘Penghulus were often unmitigated rascals, who worked in partnership with the cattle thieves (in some cases, they were actually the leaders of the gang).’ (CO 716/1).

The British then improvised the licensing system to curb the theft of farm animals in Kedah. The improvement of the breeding system in Kedah happened following the appointment of Mr. Fleury to take over the veterinary department. According to the Kedah annual report in 1327 A.H,

‘Mr. Fleury re-organised the department, and, after overcoming much opposition and many difficulties, has succeeded in making the licensing system a really effective means of identifying cattle. The extent to which this system has helped in stopping cattle thefts in North Kedah is heartily acknowledged by the police.’

The improvement in the systems by the British colonial administration was considered helpful and commendable by Kedah police as the systems allowed a simpler identification of the actual number of animals registered in Kedah and solved the problem of livestock theft in Kedah.

Enhancing Water Supply Systems for Sustainable Livestock Farming in Kedah

Water resources played a crucial role in sustaining livestock production in Kedah. The British colonial administration recognised the importance of water in supporting economic activities, including livestock production and domestic use (Abdullah et al., 2023). Accordingly, several water supply systems were implemented in Kedah. These initiatives aimed to ensure a reliable water supply for both agricultural and domestic purposes, further underlining the significance of water resources in the region (Abdullah & Mohd Noor, 2017).

Clean and accessible water sources are vital for meeting the basic needs of one’s livestock, particularly for drinking. A consistent supply of fresh water is essential to maintain the health and well-being of the animals and prevent waterborne diseases, which can significantly impact the livestock population. Water resources are also instrumental in supporting production. A consistent supply of nutrient-dense fodder, such as grass and legumes, is essential for livestock, and irrigation systems that make use of available water sources have made this possible and contributed to the overall health of the livestock. In

addition, water bodies serve as crucial sites for livestock to cool down and avoid heat stress, particularly in countries with tropical climates. Moreover, water plays a role in maintaining clean and sanitary conditions in livestock living areas, helping to prevent the spread of diseases and parasites. Water is also important in various aspects of livestock husbandry practices, including cleaning and sterilising equipment, assisting in animal reproduction, and providing for the healthcare needs of the livestock (Weindl et al., 2017).

The development of the water supply system especially in rural Kedah began when the British, through D. M. Mc Diarmid, who was the state engineer of Kedah at the time, established the North Kedah Water Works Department in 1916 (Jabatan Kerja Air Kedah Utara dan Sejarah PKNK, 1992). Though many believed that Alor Setar was the earliest location to receive a modern water supply system (S. E. 1091–1355), Yan was ahead of Alor Setar in terms of the implementation and complete adoption of the water supply system. Yan received its water supply system in 1916, when a pipeline connecting Titi Hayun to Pekan Yan, covering a distance of 5,800 feet, with a cost of less than USD100,000 was installed. The system allowed two million gallons of untreated water to be distributed per day (Mr. J.S Boissier, 1936). The selection of Yan as the earliest location to receive the implementation of a modern water supply system was driven by the fact that in 1909, Yan had around 6,706 paddy farmers. In light of this number, it was evident that a significant portion of the population in that area had already been involved in paddy cultivation and livestock (Hill, 2012). In Alor Setar, the Bukit Wang Water Plant was officially functioning and was responsible for distributing water supplies to nearby areas by 1915. The total cost of building this water plant was USD 670,000.41. The construction of the Bukit Pinang Water Plant in 1931 presented a new dimension in the access to domestic water supply lines in Kedah to this day. The water plant was equipped with a variety of equipment and fixtures, making it work better and better compared to previous water plants, as well as serving as an important supply of treated water. The water supply has been used for domestic consumption and economic-based activities undertaken by the local populace (S. E. 1091–1355).

Livestock Breeding Policy

The efforts made by the British to safeguard the interests of the livestock industry in Kedah could be clearly seen through its animal

breeding policy. This was because farming activities involving farm animals such as cattle and buffalo were important for the British. Meat-based farm animals had a fairly high market demand in Malaya, and industrial goods and food had a fairly high market demand in the United Kingdom. In addition, the demand for the meat market also expanded in Britain because the people in the country began to enjoy food sources, fruits, or meat from its colonial countries (The Straits Times October 16, 1933). Accordingly, the British enacted a breeding policy to meet the needs of both markets. For example, the British provided a grazing site measuring 12,000 acres near Kedah Peak (Mount Jerai) for the purpose of grazing in order to successfully breed farm animals. This grazing site was known as a livestock farm. The livestock farm increased farming activities by improving the quality of cattle and buffalo breeds. Also, an enactment, namely the Enactment of Selected Cattle Breeding, was introduced to identify unsuitable (having diseases) cattle and prevent their breeding process.

The implementation of the animal breeding policy was important in achieving a 2:1 ratio of female cattle and female buffaloes to male cattle and male buffaloes. This was to ensure that the number of livestock was sufficient throughout the implementation period of this policy. This was supplemented by the introduction of an enactment that prohibited the export or slaughter of female cows and buffaloes under the age of ten, except with the written permission of the State veterinary surgeon. The surgeon would provide permission on the grounds that the cattle were not suitable for breeding due to disease disorders and other causes (CO 716/3). This breeding policy increased the number of cattle in Kedah, as has been reported in Table 1.

Table 1

Buffalo and Cattle Census in Kedah (1922–1933)

| YEAR | BUFFALO | CATTLE |
|------|---------|--------|
| 1922 | 32,440 | 43,525 |
| 1924 | 37,776 | 50,202 |
| 1929 | 47,109 | 52,068 |
| 1930 | 51,696 | 59,502 |
| 1933 | 62,370 | 68,542 |

As can be seen from Table 1, the breeding trend of cattle and buffalo was on the increase. For example, in 1922, the number of buffalo was 32,440 and the number doubled to 62,370 in 1933. At the same time, the number of cattle increased from 43,525 in 1922 to 68,542 in 1933. Therefore, the breeding policy pursued by the British had improved the livestock sector in Kedah.

Challenges and Obstacles in Animal Husbandry Activities in Kedah

One of the challenges that the British colonial administration faced in improving the livestock sector in Kedah was the contagious infectious diseases among farm animals. This was because the transmission of infectious diseases to this group of farm animals was detrimental as it involved huge losses including the deaths of the infected animals (The Straits Times June 2, 1926). Among the outbreaks of livestock infectious diseases, rinderpest and foot and mouth disease, known as epizootic apthra (nail and mouth disease), were considered serious in Kedah because both greatly affected the animal husbandry industry in Kedah. Other infectious diseases included hemorrhagic septicemia, rabies, and swine fever. The infectious disease rinderpest, also known as cholera by the Malay community (Mid-Day Herald and Daily September 8, 1896: Sahidan et al., 2023), was said to be the most devastating cattle plague in history, according to Blood and Radostits (1989). This was due to the possibility of animal-to-animal transmission of the rinderpest virus, which could damage the blood vessels of affected animals and resulted in the death of over 90 percent of cases reported (Business Times July 13, 1979). Signs of livestock infection were symptoms such as fever, sores in the mouth, diarrhoea, fluid leaking from the nose and eyes, and finally death (Roeder et al., 2013).

In Kedah, the outbreak of rinderpest was caused by cattle imported from Siam, and this resulted in livestock losses estimated at one million dollars at that time (The Straits Times June 2, 1926). The first outbreak and transmission of the rinderpest virus happened in early July 1908 in almost all districts in North Kedah for 18 months. In 1909, the estimated death of infected farm animals was around 30,000, with 9,141 of which were cattle. It was about 30 per cent of the total number. This indicated that the spread of this infectious disease was dangerous and no sub-district in North Kedah was safe

from the infection. As a result, the government decided to shoot infected animals in order to limit the number of infected animals in Kedah. This was stated in Kedah's annual report in 1911,

‘For the first time, the practice was instituted of shooting infected animals and animals in contact with infected animals.’ (CO 716/1)

The spread of infectious diseases caused a huge loss to the economy of Kedah because the authorities had to cull the infected animals. The British colonial administration faced another challenge in 1920 due to a major flood in North Kedah in that year. Many cattle were moved from the flooded area to higher ground and as a result, the rinderpest infectious disease rapidly spread to other animals in North Kedah (CO 716/2). The spread of rinderpest was recorded with the number of dead cattle estimated at 10,000 (The Straits Times August 25, 1926). According to one British official, Mr. Hale, the rinderpest was endemic and could only be dealt with by three enforced principles, namely isolation, slaughter, and disinfection (Mid-Day Herald and Daily September 8, 1896). Hence, infected animals were culled. Concerned that the rinderpest case would spread to their state, the other states in Malaya implemented a system of closing trade with Kedah. For example, the Sultan of Johor banned the entry of animals such as cattle, sheep, goats, and pigs from Kedah into his state (The Straits Times October 3, 1935). Also, the virus and the following flood presented a challenge to the Kedah government and the British themselves because it affected the results of livestock exports abroad.

In addition, the foot and mouth disease that infected farm animals in Kedah posed a challenge to the British colonial administration. The disease rapidly spread, affecting cloven hoof animals (livestock and wildlife). However, worse was to follow, the disease posed a greater threat to young farm animals, causing the death rate among young farm animals to be very high compared to adult farm animals as the latter had a higher rate of morbidity or resistance. The disease also severely affected the milk yield and caused permanent hoof damage and chronic mastitis in the infected animals (Aftosa, 2021). The contagious foot and mouth disease period was then classified as the three most harmful years. This was because the transmission of infectious diseases of the foot and mouth recorded a very high rate of infection and death throughout the three years. The numbers, which were based on Kedah annual report are as presented in Table 2.

Table 2

Total Infections and Deaths from Foot and Mouth Disease in Kedah in 1914, 1923, and 1927

| Year | Total Infections | Total Deaths |
|------|------------------|--------------|
| 1914 | 12,962 | 20 |
| 1923 | 16,635 | 103 |
| 1927 | 17,084 | 81 |

According to Table 2, 1914, 1923, and 1927 recorded a high number of infections and deaths due to the foot and mouth disease among farm animals in Kedah. The number of infections showed a consistent increasing pattern. For example, in 1914, there was at first a small disease outbreak in Kerian which then spread quickly to Sungai Petani from Seberang Perai (CO 716/1). A British officer, Mr. Fleury, also confirmed the rapid spread of the foot and mouth disease from one area to another, even into villages, sparking riots among the Malay population.

The Effect of Empowerment of Animal Husbandry Activities in Kedah, 1909–1940

The British have tried to improve the livestock sector in the state of Kedah. This was because the livestock sector also contributed to economic growth in Kedah through export activities to states in Malaya and abroad. Despite that the British administration in Kedah still faced challenges in trying to increase the farming activities from 1909 to 1940. Nevertheless, the livestock sector in the state continued to grow and recorded an increase under British administration.

In the early stages of British administration in Kedah, imported livestock was considered important. This was because Kedah depended on imported livestock as there was a lack of local meat supply resources to meet the demands of the community (Malaya Tribune September 5, 1932). This had enhanced the good relationship between Kedah and Siam (Straits Independent and Penang Chronicle, November 30, 1889). For example, Kedah's annual report of imported livestock activities revealed a high number of livestock imports from Siam. The activities are as displayed in Table 3.

Table 3

Import of Cattle and Buffalo from the State of Kedah in 1916, 1917, and 1918

| Year | Import of Cattle and Buffalo |
|------|------------------------------|
| 1916 | 6,150 |
| 1917 | 6,257 |
| 1918 | 7,369 |

As can be seen from Table 3, there was a notable increase of import activities of farm animals, especially cattle and buffaloes at the beginning of British administration. From 1916 until 1918, there was a consistent increase in the import of livestock in Kedah. A total of 6,150 farm animals were imported in 1916 and the number of these imports increased by 1,219 animals to 7,369 animals in 1918. From time to time, Kedah's dependence on livestock imports began to decrease because they were able to produce their own food resources. This was through the efforts by the British, namely (i) the establishment of the animal quarantine centre in Padang Besar, Perlis to curb the spread of animal infections and (ii) the introduction of a livestock breeding policy to improve the livestock sector in Kedah. In addition, the increase in animal husbandry activities proved that Kedah was able to accommodate the demand for meat resources and guarantee food security in the state in the specified period. As proof, there was no importation of livestock in 1938. This can be seen in the following news report,

‘Kedah is completely self-supporting in its meat requirements, and importation of livestock into the State is practically nil.’ (Morning Tribune August 30, 1939)

The decision made by Kedah to prohibit the import of farm animals was driven by the state's effort to mitigate the transmission of contagious diseases from Siam to the farm animals in Kedah (The Singapore Free Press and Mercantile Advertiser August 4, 1931). For example, the spread of infectious diseases such as rinderpest and foot and mouth disease affected the livestock export activities in Kedah along with most states in Malaya, which resulted in the states having to resort to a closed-door policy. The Johor state government, through its Sultan,

adopted a closed door policy against the Kedah state government by prohibiting the import of livestock such as cattle, buffalo, goats, sheep, and pigs from Kedah (The Straits Times October 3, 1935). To protect the interests of export activities because export activities contributed to Kedah's economic improvement, the British colonial administration set up an animal quarantine centre. However, export activities experienced a crisis during British administration due to the spread of infectious diseases in 1928, 1929, and 1931. It took a long time for the colony to recover (CO 716/2).

Table 4

Import of Cattle and Buffalo in the State of Kedah in 1929, 1928, and 1931

| Year | Import of Cattle and Buffalo |
|------|------------------------------|
| 1929 | 605 |
| 1928 | 773 |
| 1931 | 698 |

Table 4 displays data on the number of cattle and buffalos which formed the bulk of export activities in 1929, 1928, and 1931. In the years when the colony suffered from infectious diseases, the number of exported cattle and buffalo from Kedah did not exceed 1,000. This affected the economy in Kedah. Even so, the efforts made by the British to safeguard the interests of the livestock sector led to the recovery of the livestock export activities in Kedah. Accordingly, the amount of livestock exports in the state increased. The Kedah annual report showed an increase in exports in the state of Kedah (see Table 5).

Table 5

Import of Cattle and Buffalo in the State of Kedah in 1936, 1937, and 1938

| Year | Import of Cattle and Buffalo |
|------|------------------------------|
| 1936 | 3,667 |
| 1937 | 3,839 |
| 1938 | 5,449 |

With the increase in export revenue, animal husbandry activities under the British colonial administration grew, making the animal husbandry

sector the most important economic sector in Kedah. The increase in farming activities in Kedah also resulted in the selling of by-products such as animal skins. The local skin trade industry was conducted within slaughterhouses, wherein the skins of the animals that were slaughtered were handled by various agents, predominantly by the Chinese, and subsequently exported to Penang (CO 716/4). In 1937, the total export sales of hides for 1,309 *picul* (a unit of weight, used in China, Japan, and SE Asia, equal to approximately 60 kilograms or 133 pounds) was worth USD16,620 and 422 *picul* of skins were worth USD4,318. This indicated the positive development of the livestock sector under British administration, which had generated economic income for the community, as well as the state of Kedah.

Kedah's dependence on foreign meat imports to meet its meat demand was reduced. Kedah's action to stop the import of meat from Siam due to diseases had guaranteed food security in the state. According to the annual report of Kedah which was written in 1938 by the British adviser, Mr. J. D. Hall, had stated that:

‘Kedah is completely self-supporting in its meat requirements, and importation of livestock into the State is practically nil. Exportation of stock remained high on account of the total prohibition against Siamese livestock.’ (CO 716/4)

In addition, the Morning Tribune reported on the total exports of Kedah for the year as follows,

‘Such exports totalled \$375,000 in the Mohammedan year 1357 (ending about March 31, 1938).’ (Morning Tribune August 30, 1939).

The farming sector carried out in Kedah contributed to the income of the British. For example, import and export duties and animal licensing fees were among the income generated by the British through the livestock sector in Kedah. The collection of import and export duties was carried out through the mandate given by Tunku Asiah to the veterinary department, which was managed by the British officer, Mr Fleury, with a charge of USD1 per farm animal (CO 716/1). The collection of import and export duties covering buffalo, cattle, goats, and pigs in 1910 was USD7,823. Meanwhile, the collection

of animal licensing fees, namely cattle, in 1910 was USD7,563. The imposition of this charge was profitable for the British because they were responsible for managing the income from livestock every year. In addition, the export revenue of livestock was high, which was between USD80 and USD100 for buffaloes and between USD40 and USD50 for cattle. In addition, the amount of livestock exports, including buffaloes, cattle, goats, and pigs in 1937 was also estimated between USD300,000 and USD30,000 (CO 716/4). Based on the amount stated, the livestock sector in Kedah was definitely the biggest contributor to the income of Kedah, even though the state was monopolised by rice cultivation activities.

CONCLUSION

In conclusion, the British had succeeded in developing the livestock sector in Kedah through its effort in increasing meat production, number of livestock, and income. The reforms in the livestock sector guaranteed food security in Kedah and Malaya, as well as meeting the demand for raw food from the United Kingdom.

The British colonial administration was responsible for food security in Malaya. However, the current study had only focused on the state of Kedah, particularly the development of Kedah's livestock sector from 1909 to 1940. The study found that the development of animal husbandry activities in Kedah was affected in the earlier years due to the spread of infectious diseases, which later became endemic and the state suffered high losses. The increase in the number of livestock deaths led to a decrease in export revenue, livestock losses, and other negative consequences. These problems spurred the British on to restore the livestock sector in Kedah.

The efforts made by the British had a good effect on the state's economy. The animal husbandry sector resumed without further restrictions. The evidence showed that the other states in Malaya resumed importing farm animals from Kedah prior to the state's success in controlling the spread of infectious diseases in farm animals under British colonial administration. Therefore, the efforts carried out by the British, namely improving the quality of animal breeds and increasing export revenue, were effective in reducing the state's reliance on imported animals.

The success of the British in fostering the growth of the livestock sector in Kedah during their colonial rule stood as a significant historical case study. The increased meat production expanded livestock populations, and improved income for local communities are clear indicators of the positive outcomes of the strategic policies and investments of British colonial administration. In today's world, where food security remains a paramount global concern, these historical lessons become even more relevant. The current challenges in ensuring a stable and sufficient food supply for a growing global population are complex. However, the Kedah experience under the British colonial administration underscores the potential of responsible and sustainable livestock production as an integral component of food security solutions.

By drawing insights from the past, we can better inform contemporary agricultural and livestock policies, both on local and global scales. The past highlights the importance of adopting sustainable practices that not only meet immediate food needs, but also contribute to the long-term resilience and well-being of communities. The British colonial experience in Kedah offers valuable lessons that emphasise the role of responsible and sustainable livestock production in addressing the multifaceted challenges of food security in the modern world. It is a reminder of the enduring value of informed and strategic approaches to food production and security, ensuring a brighter and more sustainable future for all.

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