REVIEW OF FACTORS INFLUENCING LOCAL BEEF PRODUCTION IN MALAYSIA

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MALAYSIAN BEEF INDUSTRY-2019

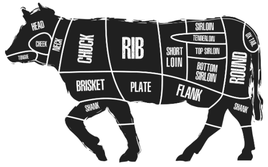
POPULATION NUMBERS = 759,012

657,407cattle

101,695 buffaloes

IMPORTATION OF CATTLE FOR SLAUGHTER

37,300



RECORDED SLAUGHTER

93,412
(6,233 buffaloes + 87,179 cattle)

BEEF OUTPUT

44,024.4 m.t

Source: Department of Veterinary Services Malaysia. 2020. Livestock Statistics 2019/2020.

MALAYSIAN BEEF INDUSTRY-2019

BEEF CONSUMPTION

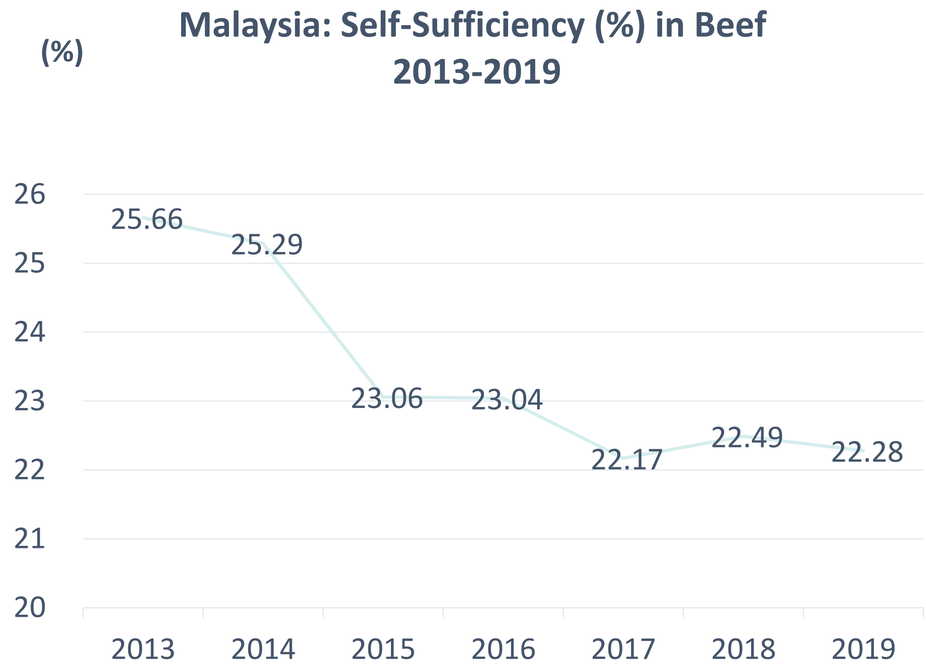
6.1 kg per capita

197,555.3 m.t

IMPORTATION OF BEEF

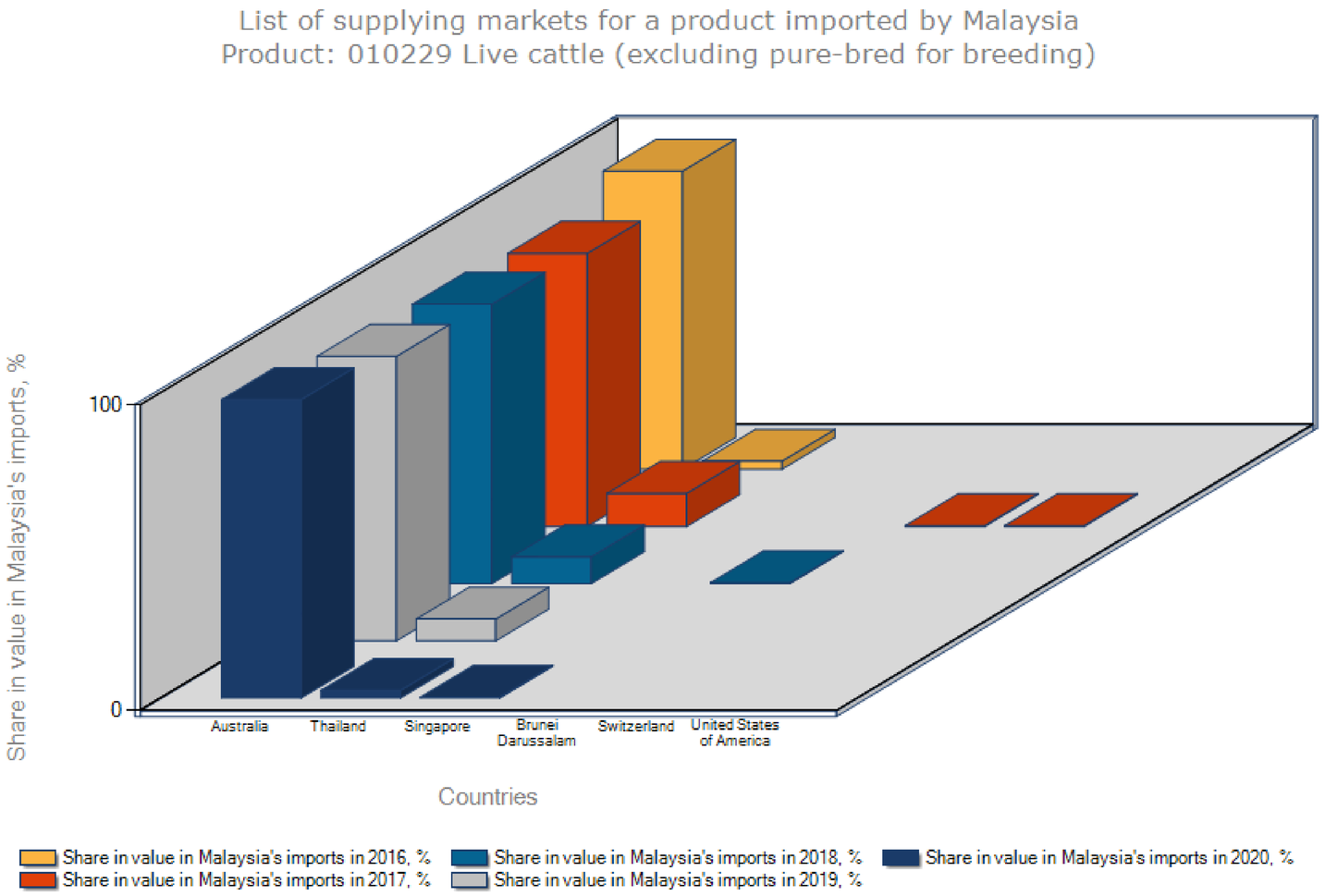
159,185 m.t

22.28 % in 2009



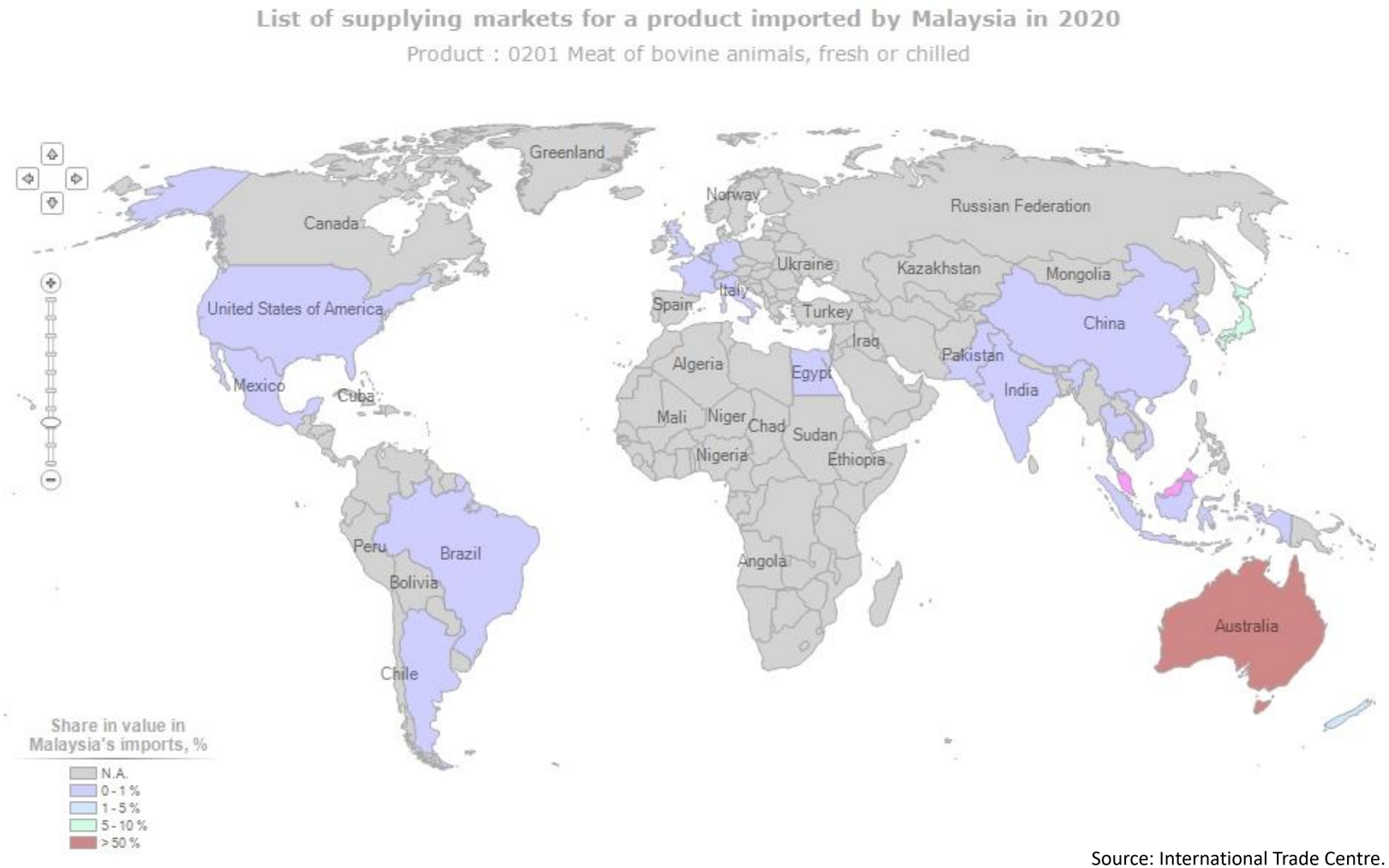
Source: Department of Veterinary Services Malaysia. 2020. Livestock Statistics 2019/2020.

Live cattle imports for slaughtering-2020



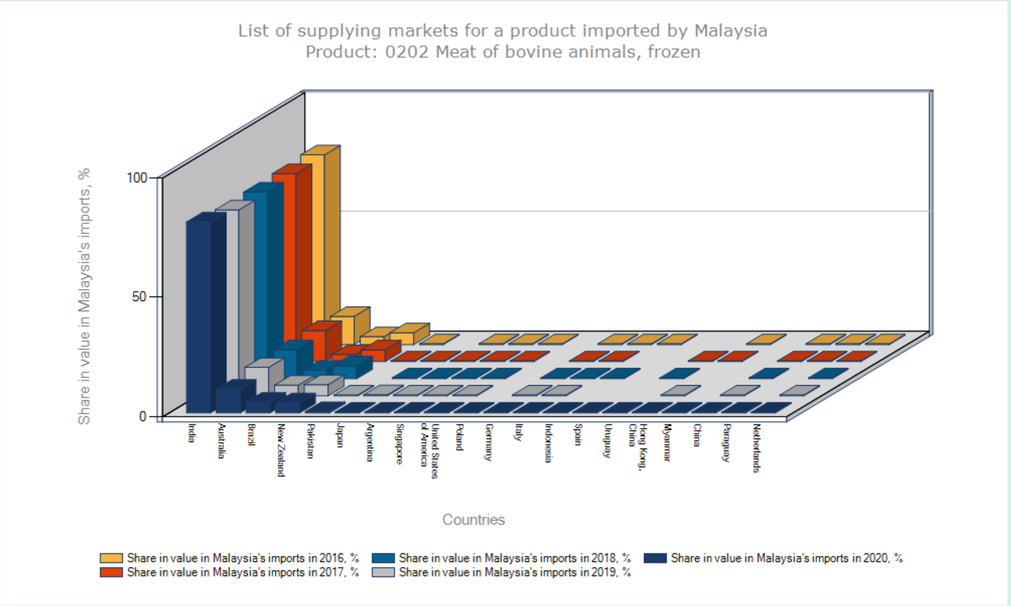
Source: International Trade Centre. 2021. Trade Map (online: https://www.trademap.org/Index.aspx)

Chilled beef imports-2020



Source: International Trade Centre. 2021. Trade Map (online: https://www.trademap.org/Index.aspx)

Frozen beef imports-2020



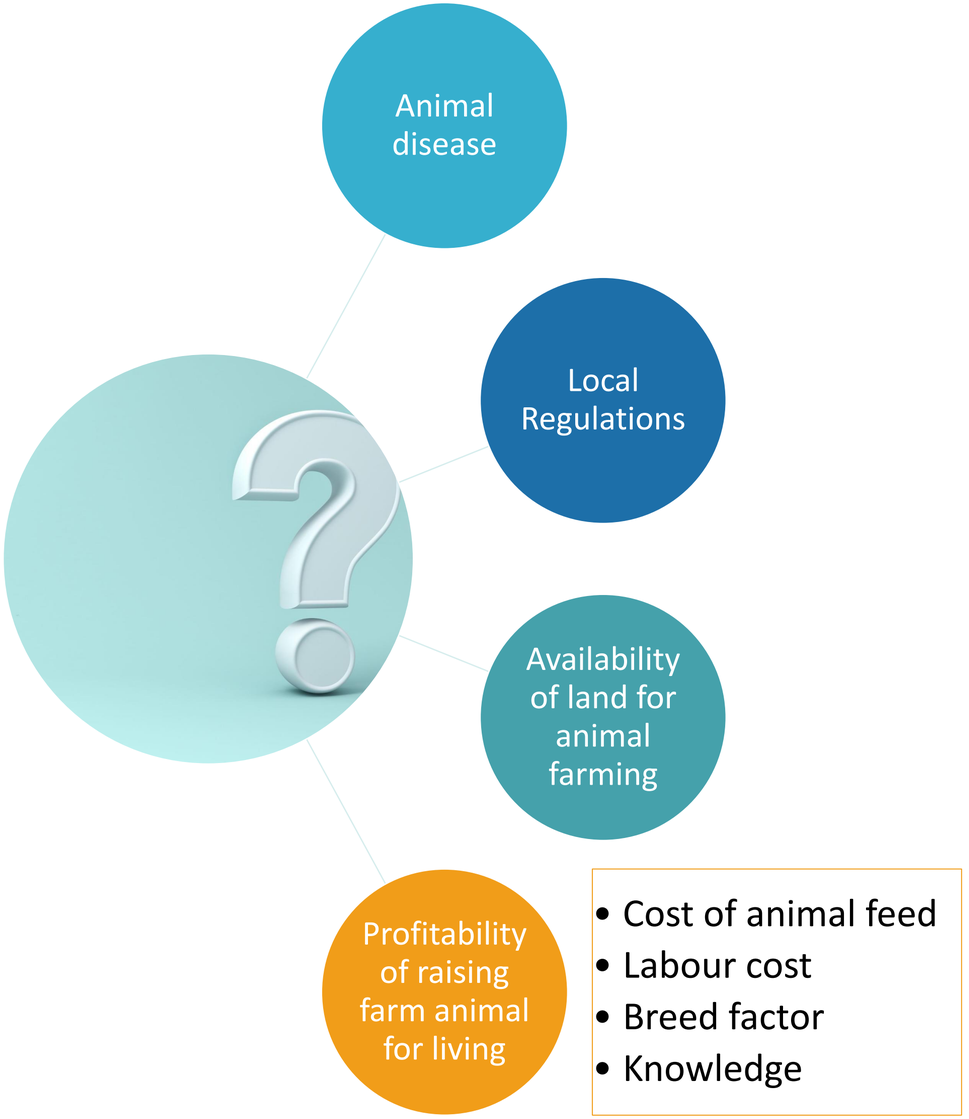
Source: International Trade Centre. 2021. Trade Map (online: https://www.trademap.org/Index.aspx)

Vulnerability of beef supply

Importation dependance, which is susceptible to:

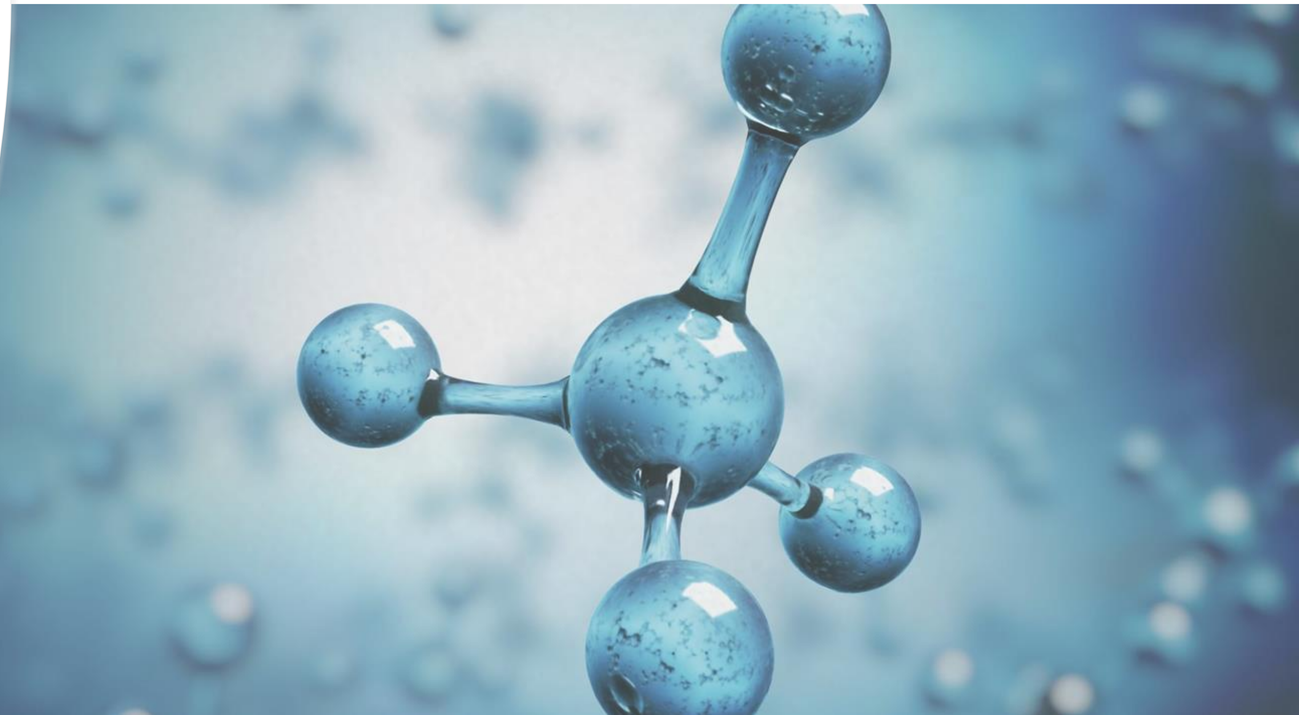
- the global price and currency fluctuations
- availability of the stock
- accessibility of the stock from the producing country.
- Importation requirements of the importing countries
- Disease status of the importing countries (Restrictions also have been placed on the entry of live cattle and buffalo from Thailand following the recent Lumpy Skin Disease outbreak in the region)

Local beef production factors?



Approach to Assess Factors Influencing Beef Production Industry

Key and dynamic factors from previous research related to local beef production based on mathematical and simulation models were reviewed.



Findings

1

Abdulla et al. (2016)

- ✓ System dynamic approach with sensitivity analysis

Beef production system

- Number of cattle decreased with low beef price and high feed price.
- Grazing and fodder development boost the cattle production significantly.
- Genetic improvement increases the number of beef cattle, with the 100% level increment upsurge the total number drastically in 20 years.
- Integration with oil palm required investment in genetic improvement technology and extension services to produce more beef output from the same resources.

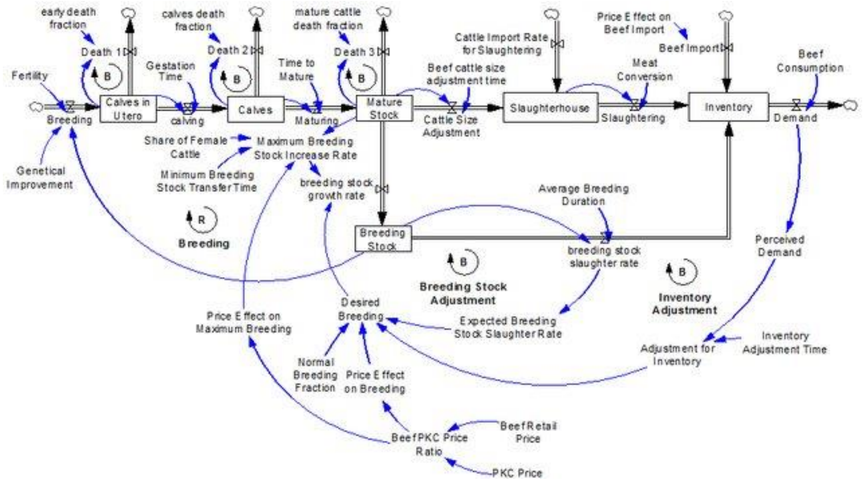


Photo from Abdullah et al. (2016): Causal loop diagram of beef cattle production system in Malaysia

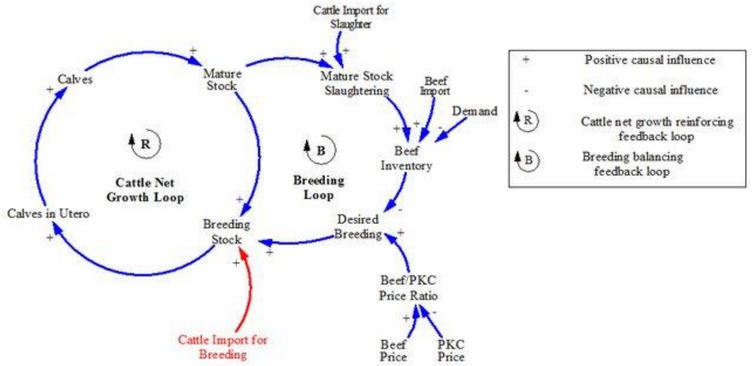


Photo from Abdullah et al. (2016): stock and flow diagram of beef cattle production system in Malaysia

Source: Abdulla I, Mohamed Arshad F, Bala BK, Bach NL, Mohammadi S. 2016. Management of beef cattle production in Malaysia: A step forward to sustainability. Am J Appl Sci. 13(9):976–83.

Findings

2

Buda & Mohamed (2021)

✓ Beef market model and simulation of policy analysis

Beef market analysis

- Retaining female cattle for longer period in beef cattle farming will increase breeding cattle population.
- Death loss from female cattle contributes to low productivity of beef cattle.

Importation policy

- To improve self-sufficiency level, cattle importation for breeding is maintained, while importation for slaughter increased by 20% to stabilize beef price

Source: Buda, M., & Mohamed, Z. 2021. Impact of Different Importation Policies Scenarios on Beef Industry in Peninsular Malaysia. *AGRARIS: Journal of Agribusiness and Rural Development Research*, *7*(1), 24-35.

Findings

3

Abd Latif et al. (2013)

- ✓ Johansen Cointegration Error Correction Model

Dynamic factors affecting beef market (beef supply and demand)

Slaughtering of female cattle over 3 years old

- female cattle as both investments to be added to the breeding herd and as output to be sent for slaughter.

Price of other protein sources (mutton, fish, poultry, pork) affected the quantity of beef consumed in Malaysia.

The number of breeding cattle/buffalo should be increased through imports to retain a higher number female calves and to improve the local beef cattle population.

Source: Abd. Latif I, Mohamed Z, Ahmed AF, Shamsudin MN. 2013. Estimation of Beef Supply and Demand in Peninsular Malaysia: An Application of Cointegration and Error Correction Model Techniques. J Int Food Agribus Mark. 25(1):167–85.

Findings

4

Mohamed et al. (2013)

- ✓ Model of Vintage Approach Systematic Model Matric (VASIMM)

Importation Policies and Management

Recommended scenario to increase local beef production

- Increasing importation of the female breeding stock.
- Reduce beef importation especially from the low-cost countries to encourage locals to enhance their production (consistent pricing policy
- Lowering rate mortality and increasing calving rate.
- Diverting to integrated production system .

Source: Mohamed Z, Hosseini A, Kamarulzaman NH. 2013.Analysis Of Malaysian Beef Industry In Peninsular Malaysia Under Different Importation Policies Scenarios And Rate Management Systems. Pertanika J Soc Sci Humanit. 21:1–16.

Findings

5

Yusoff et al. (2020)

✓ Policy Analysis Matrix

Integrated Farming and Feedlot

- Integrated farming was found to be more competitive and efficient as compared to feedlot farms (based on domestic resource cost and social profitability).

Source: Yusoff, H. H. M., Ismail, N. W., & Kamarulzaman, N. H. (2020). Assessing the comparative advantage of integrated farming and feedlot production system of the ruminant sector in Malaysia: A policy analysis matrix approach. Asian Journal of Agriculture and rural Development, 10(1), 227..

Findings

6

Gabdo & Abdlatif (2013)

✓ Net-Return Profit Model

Analysis benefits of integrated oil palm smallholders' farmers in the state Johor, Malaysia

Constraint

- Most farmers fail to maintain the recommended stocking rate - seldom replace their death palms immediately.

Benefits

- Contribute to higher net income/hectare for farmers. Analyses showed that 81% of revenue came from fresh fruit bunches, 15% from livestock constitute, 3% from Palm Oil Fronds (POF) and 0.03% from and animal dung.

Source: Gabdo BH, Abd Latif I. 2013.Analysis of the Benefits of Livestock to Oil Palm in an Integrated System: Evidence from Selected Districts in Johor, Malaysia. J Agric Sci. 5(12):47–55.

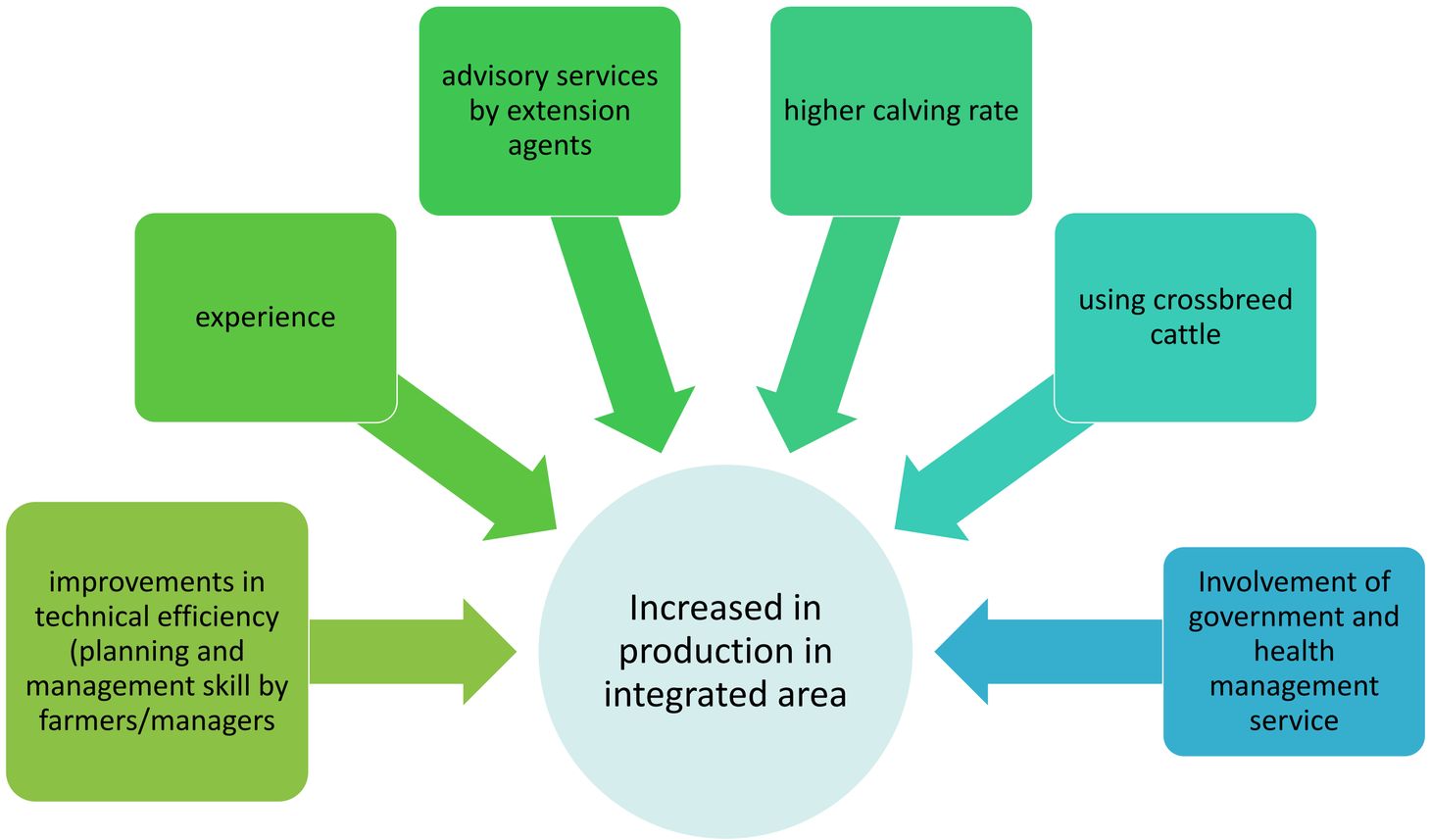
Findings

7

Serin et al. (2008)

- ✓ Translog & Cobb Douglas stochastic frontier production functions

Efficency of Target Area Concentration project (integrated system) – case study in the state of Johor, Malaysia



Source: Serin T, Radam A, Mohamed ZA, Shamsudin N, Mohamed Z. 2008. The efficiency of beef cattle production: A case study in the target area of concentration in Johor, Malaysia. Econ Technol Manag Rev. 3:57–74.

Conclusion

Major factors influencing local beef production based on the review:

- numbers of breeding cattle/buffalo female
- animal feed cost ratio
- technical efficiency (in integrated farming system)
- the calving and mortality rate of cattle/buffalo

Other factors:

- economic importance disease
- government policy
- breed performance in local environment


THANK
YOU