BEEF AND OFFAL MARKET IN INDONESIA – EVALUATION OF IMPORT TRADE POLICY

Vidyahwati Tenrisanna, Mohammad Mafizur Rahman and Rasheda Khanam

School of Commerce, Faculty of Business, Education, Law and Arts, University of Southern Queensland, Toowoomba, QLD 4350, Australia

ABSTRACT

This study aims to discuss recent beef and offal market in Indonesia with regards to import trade policy. In Indonesia, the daily meat consumption of livestock increased from 2.22 gram/capita in 2009 to 2.38 gram/capita in 2013. But, the growth of domestic beef production is lower than the growth of consumption. Insufficient local produces require Indonesia to import live cattle, beef and offal. However, since Indonesian government has launched a program for beef self-sufficiency by 2014 in 2011, beef and offal products were limited in the market and prices increased significantly. Due to the program, the government issued a policy to reduce import quotas for beef, offal and live cattle. This study assesses the import quota policy and the beef self-sufficiency program based on the previous literatures, and suggests several recommendations.

Keywords: beef, offal, market, import trade policy

1. INTRODUCTION

Livestock products are an important source of animal protein in Indonesia. Protein deficiency is one of the reasons for the presence of the severe malnutrition Indonesian population. In the long term this will have an impact on the increasingly poor quality of human resources. To this day, Indonesia is still haunted by malnutrition. In 2012, Indonesia was ranked as the 5th malnutrition country in the world. Ranked fifth since the population of Indonesia is also the world's number four. The total number of undernourished children in Indonesia is around one million. The amount represents 4.5 percent of the number of Indonesian children, which around 23 million.

The malnutrition areas have been not only regions in eastern Indonesia but also throughout Indonesia (Sinergi 2014).

Food consumption of Indonesia's population is still largely dominated by plant carbohydrates, especially those from rice. Average rice consumption Indonesian population in 2013 was 20.4 gram/capita/day (Indonesian Bureau of Statistics 2014a). According to the World Bank, income levels in Indonesia are categorized in the lower middle income. Furthermore, the poverty headcount ratio at national poverty line was 11.3 percent of the population in 2014 (World Bank 2015). According to Pingali (1997, p. 31), at low levels of income, rice is considered a luxury commodity, but at high levels of income, the rice becomes an inferior good, as consumers substitute rice for high-cost quality food, such as beef meat, fish, bread, and vegetables.

Generally, Indonesian societies consume beef only at the religious event and certain events like wedding ceremony and traditional events. The reason is because beef is quite expensive in Indonesia compared with chicken meat, fish, and goat meat. Therefore, it is very rarely to consume beef daily. Offal cattle are also essential in Indonesia because generally traditional cookery use offal as the main ingredient. As the offal is cheaper than beef, consumers sometimes substitute beef with offal. A lot of traditional food businesses and processed meat industries such as sausage, burger, and meatball producers depend on the availability of beef and offal import in the local market, because its prices are cheaper than local beef and local offal. This gives more profit for their businesses. Nowadays, the price of beef and offal in Indonesia could reach US$10/kg and US$4/kg, respectively. Remarkably, retail beef price in Indonesia was AUD 13/kg in 2013 which is the most expensive beef price in the world (Lamb 2013). Thus, the Indonesian Government has imported live cattle and beef products including offal to fill the shortage of local production in Indonesia.

Indonesian market has a great potential for meat products due to large population. This condition has been a good market opportunity for producers, investors, and suppliers. Recently, domestic production has not been able to meet demand, so import is still needed. Moreover, the Indonesian government program for self-sufficiency in livestock products has not shown the maximum results.

This study focuses only on the market of beef and offal considering that domestic production has not met the domestic demand. In addition, some problems still appear as beef self-sufficiency program that has not yielded the maximum results. Therefore, Indonesian trade policy for beef and offal will be evaluated in this regard, and several recommendations will be made.

This paper is divided into four main parts. First part is the introduction which delivers the background of the study. The second part discusses beef and offal consumption in Indonesia. Third part evaluates the import trade policy for beef and offal in Indonesia. Finally, the last part is the conclusion.

2. REVIEW ON BEEF AND OFFAL MARKET AND CONSUMPTION IN INDONESIA

2.1 Consumption, supply and demand

The gap between the consumption and local beef and offal production is evident each year in Indonesia, which might be caused by the increasing number of middle and high income population. Most of beef consumers are living in the city, by around 80 per cent, while less than 20 per cent of rural communities consume beef with very small portions per individual. This can be reflected by the increasing amount of beef consumption per capita from 1.95 kilograms in 2007 to 2.24 kilograms in 2009. As a result, the demand for beef and offal increased from 455.755 tonnes in 2008 to 516.603 tonnes in 2009 (Food and Agricultural Directorate 2010). In order to meet the demand, imported beef and offal also increased by 110.246 tonnes and live cattle by 768.133 heads in 2009. The reason for import is local cattle production only supplied 49 per cent of national beef demand in 2009 (Food and Agricultural Directorate 2010).

According to Directorate General of Livestock and Animal Health Services Republic of Indonesia (2013), Indonesia as a developing country has shown a significant increase in meat consumption, including fresh meat, processed meat and other meat during the 2007-2011. Meat consumption derived from beef cattle grew 14.29 percent from 2007 to 2011, and the consumption of liver increased 100 percent from 2007 to 2011. Beef consumption tends to increase over time, but the growth of domestic beef production is lower than the growth of consumption. This situation led to the increase in import (Oktaviani, Syaukat & Said 2014).

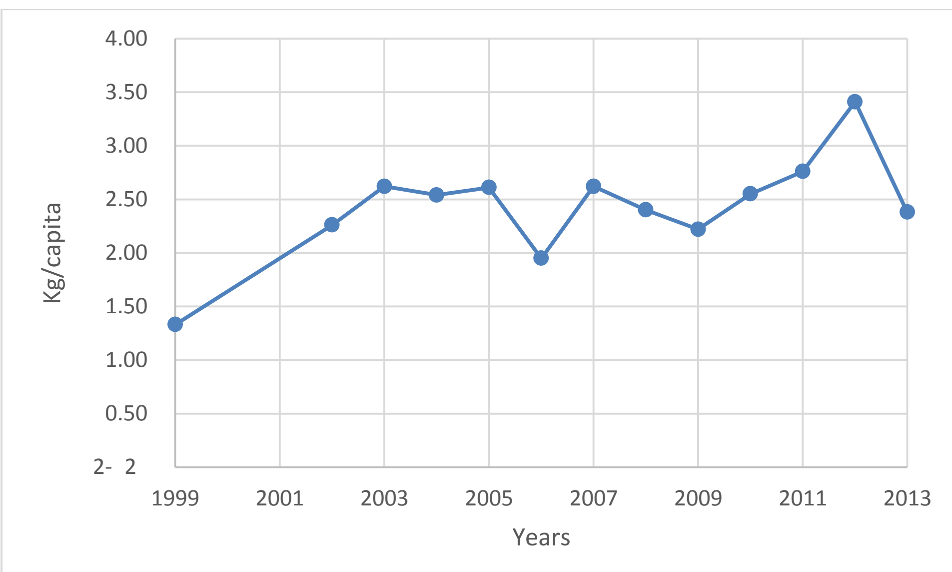
On average, meat consumption derived from livestock had been the lowest consumed by Indonesian society. As can be seen from Table 1, daily animal protein consumption derived from fishery group increased from 7.28 grams/capita in 2009 to 7.85 grams/capita in 2012. But, fish consumption reduced from 7.85 grams/capita to 7.56 grams/capita in 2013. Meat consumption from livestock increased from 2.22 grams/capita in 2009 to 2.38 grams/capita in 2013. Eggs and milk consumption also increased from 2.96 grams/capita in 2009 to 3.07 grams/capita in 2013.

Table 1. Average daily per capita consumption of animal protein (gram) by commodity group (2009-2013)

Commodity	2009	2010	2011	2012	2013
Fishery	7.28	7.63	7.66	7.85	7.56
Meat livestock	2.22	2.55	2.76	3.41	2.38
Eggs and milk	2.96	3.27	3.06	3.01	3.07

Source: Indonesian Bureau of Statistics (2014a)

Indonesian Bureau of Statistics (2014a) reported that from 2011 to 2012, meat consumption in Indonesia increased from 2.76 kilograms per capita to 3.41 kilograms per capita. However, meat consumption decreased from 3.41 kg per capita in 2012 to 2.38 kilograms per capita in 2013 which may be caused of high price and limited products in the market (Figure 1).



Source: Indonesian Bureau of Statistics (2014a)

Figure 1. Meat consumption in Indonesia from 1999 to 2013

Similarly, beef production in Indonesia has shown a significant increase from 339,480 tonnes in 2007 to 539,965 tonnes in 2014 (Table 2). However, the growth of domestic beef production is lower than the growth of consumption (Kusriatmi et al. 2014). Therefore, Indonesia is continuing to import beef products, offal and live cattle. In 2007, Indonesia's imported offal products were 972,706 kg from Australia and 591,690 kg from New Zealand (Director of Community Veterinary 2009). Types of offal that are permitted to be exported to Indonesia are liver and heart, oxtail, tongue, lips and feet (Australian Meat Industry Council 2007; Director of Community Veterinary 2009). Since 2011, the Indonesian government has only permitted liver and heart to be exported to Indonesia (Minister of Agriculture 2011). The lack of offal in the market led to traditional food businesses and processed meat industries such as sausage, burger, and meatball companies found hard to supply raw material.

Table 2. Beef production in Indonesia, 2007-2014

Year	Production (tonnes)
2007	339,480
2008	392,511
2009	409,308
2010	436,450
2011	485,335
2012	508,905
2013	504,819
2014	539,965

Source: Central Board of Statistic of Makasar (2014)

Kusriatmi et al. (2014) projected the national beef demand and production from 2012 to 2021. The study utilised time series data from 1990 to 2011, and implemented simultaneous equations model. The projection was based on the simulation whereas imported feeder cattle decreases by 25% and imported beef decreases by 35%. This study advised that domestic beef production would not be able to meet the national demand from 2012 to 2021.

In 2014, domestic beef production can only meet about 77.35 percent of total beef demand, so around 22.65 percent would be met from import. While in the Blue Print 2014 for beef self-sufficiency (Food and Agricultural Directorate 2010), Indonesia requires only 10 percent beef imports to fulfil domestic consumption. In this case, the shortage of beef will continue to increase.

Australia is known as a beef exporting country, and it has been exported up to more than 100 countries. The slaughter of livestock for meat production results in a large number of by-products consists of hides, skins, edible offal, tallow, meat meal and inedible offal. According to Porter & Weeks (1983), the value of by-products export was almost $ 722m in 1979-1980. That was around 20 percent of the overall value of exports of livestock slaughtered. This shows us that Australia can gain more by continuing to export edible offal and inedible offal. Mainly, Indonesia remains the largest market for Australian live cattle in 2013, taking 454,152 head, valued at AUS$308 million. Indonesia accounted for 53 per cent of total Australian live cattle exports in 2013 (Meat & Livestock Australia 2014).

According to Condon (2014) Australian beef offal exports to Indonesia doubling in volume reached 12,400 tonnes in 2013-2014 financial year. New Zealand has also been one of the exporter countries of beef offal in Indonesia. Weir (2012) stated that by volume, Indonesia was New Zealand's second-largest beef and offal market in 2010. Beef and offal exports to Indonesia have decreased since quotas were introduced to limit overseas supplies, in order to encourage local meat production. As a result of deep cuts to quotas, domestic beef offal price in Indonesia jumped as much as 25 percent. Exporting countries of beef and offal to Indonesia in 2012 were Australia, New Zealand, USA, Kyrgyzstan and Singapore. According to Daniel (2013), the total number of beef imports in 2011 was 175,155 tonnes and it dropped sharply in 2012 by 41,385 tonnes. New Zealand' Meat Industry Association (2011) stated, 'given Indonesia's economic growth and the resulting growth in incomes and demand for animal protein, it appears there will still be a need for imported meat.'

Indonesian Bureau of Statistics (2014e) reported that the volume of imported cattle that are ready for slaughter during January to July 21, 2014 reached to 381,212 head or equivalent 76 thousand tonnes of meat. Accordingly, the total beef import that had entered in Indonesia reached to

133,139 tonnes or 23.16 percent of the national meat needs in 2014 which is 757,088 tonnes. Based on the criteria of self-sufficiency program in the Blueprint beef 2014, the condition of self-sufficiency in beef will be achieved if total population 14.2 million head of cattle with a production capacity of 90-95% and import by 5-10%. Tawaf and Arief (2011) study results showed that domestic production has only reached 61.88%. Therefore, Indonesia needed cattle and boxed beef import by 18.75% and 19.37%, respectively.

2.2 Indonesian beef self-sufficiency program

Indonesian government has launched beef self-sufficiency program in 2010. The government has reduced import quota on beef and offal products to encourage the growth of local beef and cattle production. Indonesia planned to achieve beef self-sufficiency in 2014. The restrictions on import of beef products was re-enacted in 2011 as part of actions to achieve self-sufficiency in beef products for 2014. The beef self-sufficiency program by 2014 aimed to improve animal food security based on local resources (Food and Agricultural Directorate 2010). With this program the Indonesian Government sought to increase local production of beef by reducing the volume of import. The initial target of the beef self-sufficiency program was to be achieved by 2000, 2005 and 2010; however the program was unsuccessful in reducing the amount of meat and offal imports, because of continued limited local production. The restrictions on imports of beef products was re-enacted in 2011 as part of actions to achieve self-sufficiency in beef products for 2014.

Nixon and Whiehead (2013) stated beef self-sufficiency program in Indonesia includes three phases. In 2000, the government launched credit programs to assist small holders with fattening and breeding cattle, and breeder import program. The first beef self-sufficiency program with a target date of 2005 was unsuccessful due to a limited supply chain, shortage of land required to allow breeding and fragmented production. The 2005 target moved to 2010 by introducing a seven step policy around improving production capacity. The plan was unsuccessful due to low productivity levels and high calf mortality rate. The 2010 target moved to 2014.

According to The Australian Financial Review (2012), "Indonesian government policy in reducing beef quota will push up Indonesia's cost base, and may increase food prices to the point of causing serious unrest with the bulk of Indonesia's still comparatively poor population". In line with the launch of the beef self-sufficiency program, several steps added to seven step policy, including development of commercial cattle farming, improving supply chain and of the import quota program. However, there are no improvements in current Indonesian cattle breeding (Calving rate: 57 percent/21 months) and mortality (Calf mortality: 18 percent) (Nixon & Whiehead 2013). Thus, the price of local beef has continued to increase and limited supply of beef products.

Australia, is one of the world's most proficient cattle producers and also one of the world's largest exporters of beef at about 14 per cent of the total world beef exports (Kidane 2007). Indonesia has also imported live cattle and frozen beef products including offal, mostly from Australia. Indonesia remained the largest market for Australian live cattle exports in 2013, taking 454,152 head, up 63 per cent valued at AUS$308 million. Indonesia accounted for 53 per cent of total Australian live cattle exports in 2013 (Meat & Livestock Australia 2014).

Indonesia is a key market for Australian offal with trade valued at $22.7 million in 2010 to 2011 (Department of Agriculture Fisheries and Forestry 2012). However, the volume of offal exported to Indonesia halved to about 6000 tonnes in 2011. The Indonesian government policy to reduce the amount and type of offal imports in 2011 led to a shortage of offal supply in Indonesia. As an example, there are around 300 traditional stalls that need 16 tons offal per day in Makassar while only 1,000 kg could be supplied by slaughter houses in Makassar. In addition, the wide spread of unsafe offal in terms of the quality is not new to many people in Indonesia. Moreover, the price of offal has risen to 30 percent (Republika 2012).

Trade restrictions imposed by the Indonesian Government in the name of self-sufficiency was an effort to boost domestic beef production; however, the program has made life difficult for exporters, retailers and buyers. In general, the need for edible offal will continue to increase while local production tends to stay static and the growth rate of the population increases in Makassar. Furthermore, some offal products are found to be illegal in traditional markets, and hence the quality of the product is not maintained because of the high demand for offal. Absence of commensurate increases in the offal supply will create pressure to raise offal prices.

The study of Tenrisanna, Rahman and Khanam (2013) has shown that both local and imported offal is a necessity good, while both local and import beef is a luxury good based on the expenditure elasticity estimates. From the WTP analysis study of Tenrisanna, Rahman and Khanam (2014), it is clear that offal import was quite expensive and was very difficult to find in the market. Moreover, some consumers who bought offal import in the traditional markets found the low quality of offal import in terms of freshness and packaging. Therefore, it is important to maintain the new regulation for beef and offal imports, in order to provide more products in the market, and make the product more affordable.

The Indonesian program for self-sufficiency in beef products in year 2014 should be assessed in depth because the program has not achieved the target results. Permani (2013) noted that Indonesian government program to achieving beef self-sufficiency in year 2014 through protectionist trade will be decreasing beef consumption in the long run and increasing domestic beef prices. Tawaf (2014) argued that the calculation of national meat production was using unrealistic coefficients and measurements based on assumptions. Therefore, the accuracy data needs to be improved through accurate information system.

Local government should give more supervision on the quality and prices of products sell in the market due to high demand of beef and offal products. The potential and opportunities for the development of processing and marketing of livestock products in Indonesia is quite large and has not been used optimally. Therefore, several programs and the main activities carried out by the Indonesian government through the Directorate of Processing and Marketing of livestock products in the field of processing and marketing of livestock includes in five main areas, namely the increase in domestic marketing, international marketing enhancement, improving the quality of refined products, an increase in the application of processing technology and the increase in the provision of processing (Nuhung 2001).

The pause of imported beef and offal will have a negative impact on beef cattle population in Indonesia because of the number of calves born and life will not be balanced by the number of cattle slaughtered (Purba & Hadi 2012). Nixon and Whiehead (2013) projected that if only 10 percent of Indonesia’s beef requirements are filled by import, beginning in 2014 and there are no improvements in current Indonesia cattle breeding, Indonesia‘s cattle herd would diminish to zero in 2022. Pulungan (2014) argued that the reduction of import beef quota by the Indonesian government caused the political climate in the country was volatile due to the scarcity of meat in the market. Reducing import quota has impacted the Australian beef industry. For instance, Australian live cattle exports have fallen by almost 50 percent since 2010.

The study of Pulungan (2014) found that the reduction of import beef quota by the Indonesian government did not affect the political relations of both countries. However, the political climate in the country was volatile due to the scarcity of meat in the market. Similarly, reducing the import quota had an impact on the Australian beef industry. Australian live cattle exports have fallen by almost 50 percent since 2010 (Nixon & Whiehead 2013).

Marhendra (2014) analysed the impact of the restriction on import cattle on livestock company performance. The study found that the import cattle quota policy had a visible impact on reduction of number of cattle import, cattle sales, facility performance, and human resource performance. These impacts will ultimately reduce the input advantage or profit of the company. Nixon and Whiehead (2013) suggested beef and live cattle imports will be required to supplement domestic Indonesian supply and allow domestic herd growth. Four percent domestic herd growth, assisted by import, could lead to 70 percent self-sufficiency.

Foreign aid should be utilized as much as possible to advance the industry. According to Vanzetti et al. (2010), Australia is increasing its aid to Indonesia to increase agricultural productivity and quality. By this program, Indonesia could supply the products of fattened import feeder cattle in Singapore and other countries in the region to benefit of both Indonesia and Australia.

3. EVALUATION OF IMPORT QUOTA POLICY FOR BEEF AND OFFAL

Beef self-sufficiency program by 2014 aimed to improve animal food security based on the local resources (Food and Agricultural Directorate 2010). With this program the Indonesian government sought to increase local production of beef by reducing the volume of import. The self-sufficiency program was targeted to be achieved in 2000, 2005 and 2010 previously; however the programs were unsuccessful in reducing the amount of meat and offal imports, because of limited local production.

Reduction in the number of cattle and offal imports has led to the availability of meat and offal are not evenly distributed throughout the Indonesian market. Moreover, the increasing price of meat is increasingly burdensome for lower middle class society. Beef price in 2009-2010 was US$7/kg, but in 2013-2014 the price reached US$10/kg. As a result, the Minister of the trade Republic of Indonesian announced a new regulation on import live cattle and beef products in order to create beef price stabilisation throughout Indonesia in 2013 (The Minister of Trade Republic of Indonesia 2013). The regulation agrees to increase the supply of cattle by conducting gradual import of cattle and beef products including offal products such as beef heart, beef livers, tongue, lips, tail head meat and tail in a sufficient amount for the purpose of beef price stabilization. This regulation will open more international animal products in the market.

According to Department of Commerce, the government released permit import for live cattle as much 750 thousand head or equivalent to 130,000 tonnes of beef. This amount increased twofold from 2013 equal to 356.950 heads. In 2014, the total beef import quota was equal to 170.324 tonnes, but only 140,000 tonnes can be reached. Because the current price of beef is high, importers are unwilling to import the entire quota amount.

Therefore, Indonesian government has added the amount of import quota in 2013; the beef price is still high at US$10/kg. This policy indicates that the beef self-sufficiency program was unsuccessful for the fourth times. Today, by constraining import, the price of beef and offal will rise and encourage local farmers to sell breeding female to earn more cash. As a result, breeding capacity will decrease. According to Vanzetti et al. (2010), to be self-sufficient in the current market circumstances would require enough additional stock of cattle to sustainable turn off enough slaughter cattle, relatively-mature cattle for short-term fattening and slaughtering, since breeding cycle needs to be taken into account.

Indonesia should do more research that would improve cattle and agricultural productivity in the country. Trade quota restrictions are not relevant to the progress of the livestock industry in Indonesia. The expensive beef prices also as a result of protection policy imposed by the government whereas importers are not allowed to sell beef directly to the public (Izzaty 2013). Importers are allowed to sell beef to beef industry, hotel, restaurant or catering. Thus, beef scarcity persists over time. Transparency import mechanism is required in beef import policy. The government must disclose information about the mechanism of determining the importer, and the distribution of import quota for importers through open auction.

Further field research should be done to analyse import trade policy by using real market data. In addition, policy simulations can also be performed to determine the best strategies for self-sufficiency in beef products. Also, further research on the beef price stabilisation strategy is needed.

The beef self-sufficiency program in Indonesia could be achieved if the availability of meat products in the country can be fulfilled, which may temporarily fulfilled from import meat, offal and live cattle. Moreover, if the Indonesian community can be provided for the needs of animal protein more easily at an affordable price and good quality, the human resources in the future will be improved and malnutrition will be reduced.

4. Conclusion

This study aims to discuss the consumption and availability of beef and offal cattle in Indonesia with regards to import quota trade policy and beef self-sufficiency program. Beef and offal consumption in Indonesia are predicted to grow as the population growth continues to increase. Overall, daily meat consumption of livestock increased from 2.22 grams/capita in 2009 to 2.38 grams/capita in 2013. However, meat consumption derived from livestock has been the lowest consumed throughout the animal protein consumption. In 2011, Indonesia launched beef self-sufficiency program to be achieved by 2014. By imposing import quota, the price of beef, offal and live cattle increased significantly.

Indonesia needs to do further research to improve cattle and agricultural productivity in the country. Based on the literatures discussed previously, trade quota restrictions are not relevant to the progress of the livestock industry in Indonesia. Thus, beef scarcity persists. A transparency import mechanism is required in the beef import policy. The government must disclose information about the mechanism of determining the importer, and the distribution of import quota for importers through open auction. Indeed, to get the right amount for the import quota, the calculation of national beef demand should be based on the actual field data and not based on assumptions.

We believe an important contribution can be made to the literature by presenting an update of beef and offal markets in Indonesia. This study may provide input for refining import trade policy and increasing local beef and offal production in Indonesia.

5. References

Australian Meat Industry Council 2007, *Submission to Department of Foreign Affairs and Trade in Response to Free Trade Agreement with Indonesia*, Australian Meat Industry Council, Australia,<http://www.dfat.gov.au/fta/iacepa/feasibility-study-submissions/Australian_Meat_Industry_Council.pdf>.

Central Board of Statistic of Makasar 2014, *Makassar dalam angka 2014 (Makassar in figures 2014)*, Central Board of Statistics of Makassar, <http://makassarkota.bps.go.id/?hal=publikasi_detil&id=37>.

Condon, J 2014, 'Mla market briefs: Drought underpins record beef offal exports ', *Beef Central*, <http://www.beefcentral.com/news/mla-market-briefs-drought-underpins-record-beef-offal-exports/>.

Daniel, W 2013, *Ini dia negara yang rajin jual daging ke Indonesia*, Detik Finance, <http://finance.detik.com/read/2013/02/04/120124/2160368/4/ini-dia-negara-yang-rajin-jual-daging-ke-indonesia>.

Department of Agriculture Fisheries and Forestry, *Agricultural trade - Review*, 2012, Departement of Agriculture Fisheries and Forestry, Canberra, Australia, <http://www.daff.gov.au/market-access-trade/market-access/ag-trade>.

Director of Community Veterinary 2009, *Policy on import beef and offal*, Center for Indonesian Veterinary Analytical Studies, viewed 6 December 2012, <http://civas.net/sites/default/files/presentasi/diskusi-importasi-daging/Kebijakan-impor-kaskas-daging-dan-jeroan-luar-negeri-Dirkesmavet.pdf>.

Directorate General of Livestock and Animal Health Services Republic of Indonesia, *Meat consumption by type of meat and processed meat per capita, 2007-2011*, 2013, Department of Agricultural, <http://www.deptan.go.id/infoeksekutif/nak/isi_dt5thn_nak.php>.

Food and Agricultural Directorate, *Blue print of beef self sufficiency program 2014*, 2010, Indonesian Bureau of Planning and National Development, Jakarta, <http://www.ditjennak.go.id/regulasi%5Cblueprint.pdf>.

Indonesian Bureau of Statistics, *National survey of socio-economics, Indonesian Bureau of Statistics* 2014a, Jakarta, Indonesia, <http://www.bps.go.id/linkTabelStatis/view/id/937>.

Indonesian Bureau of Statistics 2014e, *Livestock Meat Production by Province and Type of Livestock (Tons), 2007-2014* viewed 12/03/2015, <http://www.bps.go.id/linkTabelStatis/view/id/1510>.

Izzaty, M 2013, *Beef price stabilisation efforts*, Sekretariat Jenderal DPR RI, viewed 27/03/2015, <http://berkas.dpr.go.id/pengkajian/files/info_singkat/Info%20Singkat-V-3-I-P3DI-Februari-2013-52.pdf>.

Kidane, H 2007, 'Export market for Australian beef industry', *Journal of Food Products Marketing*, vol. 14, no. 1, pp. 11-36, viewed 2014/11/05, <http://dx.doi.org/10.1300/J038v14n01_02>.

Kusriatmi, Oktaviani, R, Syaukat, Y & Said, A 2014, 'Analysis of the effects of beef import restrictions policy on beef self-sufficiency in Indonesia', *ISSAAS*, vol. 20, no. 1.

Lamb, K 2013, 'Indonesians struggle with raising meat prices', viewed 3 December 2014, <http://www.voanews.com/content/indonesia-rising-price-of-meat-beef/1597466.html>.

Marhendra, AVH 2014, 'Analysis on the impact of beef import quota restrictions policy on corporate performance (Analisis dampak kebijakan pembatasan kuota impor sapi terhadap kinerja perusahaan) (Studi Kasus Pada Pt Great Giant Livestock (GGLC), Lampung Tengah-Lampung)', *Jurnal Administrasi Bisnis*, vol. 13, no. 1.

Meat & Livestock Australia 2014, *Live exports*, Meat and Livestock Australia, Sydney, Australia, <http://www.mla.com.au/Prices-and-markets/Trends-and-analysis/Beef/Live-exports>.

Meat Industry Association 2011, *2011 Annual Report*, New Zealand Meat Industry Association, Wellington,<http://www.mia.co.nz/docs/annual_reports/MIA%20Annual%20report%202010-11%20-%20final%20version.pdf>.

Minister of Agriculture 2011, 'Regulation of the Minister of Agriculture Number 50/Permentan/OT.140/9/2011 about import approval recommendation for carcas, meat, offal and/or processed into the Republic of Indonesia

', <http://www.deptan.go.id/pengumuman/Permentan-sept2011/Permentan-50-Th2011.pdf>.

Nixon, B & Whiehead, M 2013, in *AMIC 2013 - Meat Industry Conference*: *proceedings of the AMIC 2013 - Meat Industry Conference* ANZ, Gold Coast, Queensland.

Nuhung, I 2001, 'Potential and opportunities for the development of processing and marketing of livestoc ', in *Seminar Nasional Teknologi Peternakan dan Veteriner*: *proceedings of the Seminar Nasional Teknologi Peternakan dan Veteriner* Pusat Penelitian dan Pengembangan Peternakan, Bogor, pp. 11-6.

Oktaviani, R, Syaukat, Y & Said, A 2014, 'Analysis of the effects of beef import restrictions policy on beef self-sufficiency in Indonesia', *Journal of ISSAAS (International Society for Southeast Asian Agricultural Sciences),* vol. 20, no. 1, pp. 115-30.

Permani, R 2013, 'Rethinking Indonesia's beef self-sufficiency agenda', *Inside Indonesia*, <http://www.insideindonesia.org/current-edition/rethinking-indonesia-s-beef-self-sufficiency-agenda>.

Pingali, PL 1997, *Asian rice bowls : the returning crisis?*, CAB International, New York.

Porter, D & Weeks, P 1983, *The Market for Australian Livestock By-products*, Australian Government Pub. Service.

Pulungan, RE 2014, 'Impact of Indonesian import quota policy for beef from Australia (Dampak kebijakan Indonesia membatasi kuota impor daging sapi dari Australia)', *Jurnal Online Mahasiswa (JOM) Bidang Ilmu Sosial dan Ilmu Politik*, vol. 1, no. 2, pp. 1-10.

Purba, HJ & Hadi, PU 2012, 'Beef-cattle product marketing dynamics in Eastern Indonesia', *Pusat Sosial Ekonomi dan Kebijakan Pertanian*.

Republika 2012, '300 stalls need 16 tons offal each day', *Republika Online*, viewed 25 November 2014, <http://www.republika.co.id/berita/breaking-news/nasional/09/12/10/94832-300-warung-butuh-16-ton-jeroan-sehari>.

Sinergi, I 2014, *Indonesia masih dihantui kasus gizi buruk (Indonesia is still haunted by malnutrition case),* Sinergi Indonesia, <http://www.indonesiafightpoverty.com/2014/04/01/indonesia-masih-dihantui-kasus-gizi-buruk/>.

Tawaf, R 2014, 'Critical analysis of the unsuccessful of beef self-sufficiency program in Indonesia', in *6th Livestock Sustainability proceedings of the 6th Livestock Sustainability* Padjajaran University.

Tawaf, R & Arief, H 2011, 'National strategic approach to the availability of meat in Indonesia', in *3rd Livestock Sustainability proceedings of the 3rd Livestock Sustainability* Faculty of Animal Husbandry, Padjajaran University.

Tenrisanna, V, Rahman, MM & Khanam, R 2013, 'Socio-economic and demographic factors of beef offal demand in Indonesia: a case study for Makassar City, Indonesia', in *Proceedings of the 23rd International Business Research Conference*: *proceedings of theProceedings of the 23rd International Business Research Conference* World Business Institute, Melbourne, Australia, viewed <http://www.wbiworldconpro.com/uploads/melbourne-conference-2013-november/economics/1384592885_221-Vidyahwati_Tenrisanna.pdf>.

Tenrisanna, V, Rahman, MM & Khanam, R 2014, 'Consumers' willingness to pay for imported offal in Indonesia - A case study for Makassar City', *Postgraduate and Early Career Research (PGECR) Group 13th Research Symposium University of Southern Queensland, Australia*.

The Australian Financial Review 2012, *Indonesian Policies Cut Beef Supply*, Financial Review, viewed 26th July, <http://afr.com/p/opinion/indonesian_policies_cut_beef_supply_MVveI14ZyVbLKc1cUTXExH>.

The Minister of Trade Republic of Indonesia, *Decree of The Minister of Tade Republic of Indonesia Number 699/M-DAG/KEP/7/2013 Concerning Beef Price Stabilization*, 2013, TMo Trade, Jakarta, <http://www.kemendag.go.id/files/regulasi/2013/08/30/46m-dagper82013-id-1378131055.pdf>.

Vanzetti, D, Setyoko, NR, Trewin, R & Permani, R 2010, *Home grown: cattle and beef self-sufficiency in Indonesia*, International and Development Economics, https://crawford.anu.edu.au/degrees/idec/working_papers/IDEC10-04.pdf>.

Weir, J 2012, 'Quotas imposed despite free-trade agreement', *Business Day*, 24 April 2012.

World Bank 2015, *Data* http://data.worldbank.org/country/indonesia>.