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IOP Conf. Series: Earth and Environmental Science 387 (2019) 012038 doi:10.1088/1755-1315/387/1/012038

A market chain analysis of interisland cattle trade into South Kalimantan, Indonesia

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Abstract. Local cattle production in South Kalimantan (KalSel) has been unable to meet the demand, thus live cattle were imported from other islands.. Cattle imports have increased in recent years, thus local smallholders are experiencing falling prices. The objectives of this paper are to understand the market chains of cattle trading from interislands, and to assess the cost competitiveness of local cattle to the imports. Methods used in this research are market chain and gross margin analysis. Key findings are: KalSel imported approximately 5000 head live cattle per month, mainly from NTT and NTB, followed by South Sulawesi and East Java; cattle from East Java were Limousin and other crossbreeds, other provinces supplied mainly Bali cattle; interisland cattle were traded based on price per kg and actual live weight, while local cattle were based on price per head and estimation of live weight; cattle from East Java was most price competitive, followed by NTT/NTB and then South Sulawesi; in terms of taste, beef from crossbreeds was better, followed by beef from Sulawesi, and then from NTT or NTB; and finally local cattle were cost uncompetitive because of the pricing method used, small scale production and low productivity.

1. Introduction

Crop and cattle integration based on the principle of energy and nutrient recycling makes good sense intuitively. It is seen by the Government of Indonesia as a means for increasing the cattle population in Indonesia to meet growing demand for beef. In response, two ACIAR projects have been developed aimed at increasing beef supply from smallholder farmers, as well as improving their livelihoods. The two projects are: (i) LS/2015/047 ('Improving cattle production and livelihood in crop-based farming systems: CropCow); and (ii) LS/2015/048 ('Improving smallholder beef supply and livelihoods through cattle-palm system integration in Indonesia: PalmCow). CropCow will focus on evaluating the potential of integrating cattle with crops, particularly maize and rice, in West Nusa Tenggara (NTB) and South Kalimantan (KalSel), and PalmCow will focus on integrating cattle with oil palm in Riau, South Sumatra and East Kalimantan. Both projects have four research components: market chains, cattle production, household socioeconomics, and scaling out.

In this paper, we provide a brief overview of the production and marketing systems of beef cattle in KalSel. Constraints and opportunities, as well as areas for further research, for improving the productivity and profitability of smallholder cattle production in KalSel are identified.

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2. Material and method

This market chain analysis is based on a review of literature, an analysis of secondary data, stakeholder consultations, informant interviews, and field and market visits. The study began with a review of literature on market chain research conducted in eastern Indonesia [1-5]. By comparison, limited market chain research has been conducted in KalSel. The field work was conducted in October 2018 and January 2019. The key informants were farmers, cattle traders, butchers and beef retailers at the wet market.

Six farmer groups in Tanah Laut district were visited and their group leaders interviewed, regarding their production systems, costs and returns, and issues and opportunities facing them, either individually or as a group. Several traders were interviewed, including two of the largest interisland traders in Banjarbaru and half a dozen of smaller local/village traders. For traders, we were obtaining information on their main suppliers and customers, volumes traded, buying and selling prices, marketing costs, gross income, and issues and opportunities facing them. Three beef retailers at the wet market were interviewed.

In addition, two input suppliers were interviewed, including supplier of rice bran and palm kernel cake (PKC), and tofu/tempe manufacturer. A number of discussions on current market conditions and any issues and opportunities were held with the researchers at the University of Lambung Mangkurat, the manager of the livestock market in Pelaihari, and BPTP KalSel and Dinas officials.

3. Results and discussion

South Kalimantan (KalSel) had 164,219 beef cattle in 2017 [6]. But local production has been unable to meet demand (Table 1). While 33,041 head of live cattle were imported, 7,616 head were exported to neighboring provinces in 2017. Cattle imports have increased further in recent years as exporting provinces divert cattle to Kalimantan from their traditional markets in Jakarta and West Java, which have become less profitable because of competition from frozen beef imports. As more and more cattle are imported into KalSel, local smallholders are experiencing falling prices.

Table 1. An overview of the cattle sector in South Kalimantan

Cattle overview	
Cattle population (head)	164,219
Cattle slaughter (head)	33,235
Cattle import (head)	33,041
Cattle export (head)	2,701
Beef production (kg)	7,259,189
Beef Consumption (kg)	6,528,236

3.1. Cattle marketing by farmers

The majority of slaughter cattle in Tanah Laut are sold to local traders at the farm gate. There are at least 2-3 small traders in each village, trading in small numbers (3-5 head/week). Cattle are normally sold when the households need cash to pay for school fees, wedding, registration for Hajj, and the celebration of religious events. However, the timing when the cattle is sold does not always correspond to the timing when the cattle price is high. Therefore, it is reasonable to state that cattle farming is done for economic reasons, but most farmers are not "market-oriented" because often the production and marketing decisions are made without planning or based on market demand.

3.2. The livestock market in Pelaihari

It is the only cattle market in KalSel. At the Pelaihari livestock market, there could be around 80-100 traders on the trading day (every Monday), including some traders from Sulawesi and East Java. The most significant issue faced by the livestock market is a drop in the trading volumes. Since 2015, the number of cattle traded has decreased from 500-700 head/week to 100-150 head/week because traders from Sulawesi offer/sell their cattle directly to slaughterhouses and butchers. This means that the market chain is getting shorter, with the potential to reduce marketing costs and improve marketing efficiency. Although this is a positive development, the impact on local farmers could be negative as local Bali cattle production is less efficient compared to NTT or NTB. Another reason for the decline is government has introduced more stringent requirements for groups to receive cattle from the cattle distribution program, and hence the number of breeding stock traded on the market has been reduced.

3.3. Cattle pricing

According to traders and butchers interviewed, the value of a slaughter cattle is determined by the amount of beef that can be extracted multiplied by the prevailing beef retail price, plus the value of offal and other parts. For example, a farmer in Tanah Laut may receive around Rp. 15 million/head and a farmer in NTT around Rp. 14 million/head if the estimated meat weight is 100 kg of beef at Rp. 120,000/kg + offal and other parts at Rp. 4 million (= Rp. 16 million/head), after accounting for transport and other marketing costs, and local demand and supply conditions. From the butcher/trader interviewed we also learned that if the live weight of a crossbred cattle is 500 kg, then the composition of a carcass can be estimated as follows: meat: 200 kg; bones: 60 kg; offal: 16 kg (liver, lungs, heart, tongue, and kidneys); intestines: 12 kg; legs + head: 18 kg; skin/hide: 38 kg; other: fats.

These figures indicate a dressing percentage of 52% and a meat yield of 40% for cross breeds. The latter is higher than the average meat yield of 35% for Bali cattle. More research is needed to double check the figures, as well as to see the variations in breeds

In Indonesia, cattle pricing can be done either with a weighing scale or by visual appraisal without a scale, most cattle traded with farmers are based on visual estimation. On the other hand, cattle traded between interisland traders are done mostly based on weight and live weight price per kg. Farmers thought they are not familiar with weighing or they have not used one before and there is no a livestock scale in the village or at the livestock market. Some farmers believe weighing reduces the selling price of the livestock.

Further insight was gained from the interview of a cattle fattener in Banjarbaru who buys feeder cattle and sells slaughter cattle regularly. As a fattener, he prefers to trade cattle based on estimation for several reasons. Firstly, when he buys feeder cattle, live weight is not the main selection criterion, but depends on several features of the animal, such as: (1) must have a strong frame; (2) hooves must be disc-shaped; (3) the tail is not too long; (4) the horns must point upward; (5) sturdy feet; (6) the colour of the hair must be white; (7) the snout is short. Secondly, for Idul Adha, there are several conditions that must be adhered to; namely, cattle must be male, aged over 2 years, healthy and no defects. Because of these additional requirements, the selling price is higher than usual. Thirdly, he is worried that cattle may be forced to eat or drink before weighing, and hence heavier than they should be. Finally, when selling, he believes the selling price of cattle that is based on estimation will be higher than those weighed. He also said that buying cattle from NTT, which is based on weight, are cheaper than buying cattle from the livestock market, which are not weighed. In practice, he prefers to buy using a scale, but by estimation when selling, which seems to be the case for interisland traders as well. It also appears that traders in NTT and East Java use scales, but not NTB or Sulawesi.

3.4. Marketing arrangements

There are many different selling and buying arrangements between traders and farmers: (1) a trader buys cattle in cash from the farmer; (2) a trader makes a down payment to the farmer and takes the cattle after 3 months. This pre-payment system has a higher price than paid in full on the day in cash, e.g. 12 million by down payment and only 10 million on the day; (3) a trader makes a payment after the cattle has been sold; (4) a trader pays the farmer half of the agreed price when taking the cattle, and pays another half after the sale.

3.5. Relative returns

Marketing margin or gross return is around Rp. 500K/head (ranging from Rp. 300K-700K/head) for a trader, which is relatively high compared with the gross return of 500K-750K/month/head for a farmer

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after fattening a livestock for at least 3-4 months. To determine whether there is an excessive profit or inequity in cattle trading or not will require an economic analysis looking at the operating costs (search costs, transport costs, feeding/vet, market fees/retribution, taxes, quarantine, etc) and the risk premiums (changes in market prices, and risks associated with visual estimation, as well as livestock being sick or injured on route to the market) of the trader, as well as the production cost of the farmer.

3.6. Demand for beef

Demand for beef in Indonesia was projected to increase substantially due to growth in population and income. However, based on interviews with bakso processors and several beef retailers in the wet market, their beef businesses have actually declined. The reasons for the decline include: mine closures and low commodity prices, and competition from lower cost substitutes (e.g. fish, chicken meat, imported frozen beef, etc). Fish and chicken prices are around Rp. 20-30K/kg, while it is Rp. 100-130K/kg for local beef, Rp. 80-90,000/kg for imported frozen beef and Rp. 60-65,000/kg for imported buffalo meat. These observations seem to suggest that the demand for beef in kalSel is both income- and price-elastic.

There is a significant seasonality in demand where demand for cattle doubles or triples during Idul Fitri (a one-week long holiday) and Idul Adha (a one-day event). Many farmers fatten cattle specifically for Idul Adha because of higher cattle prices. However, demand for beef is substantially reduced right after Idul Adha. Therefore, Idul Adha may have different impact on different operators along the market chain. Furthermore, the seasonality in the demand for cattle also suggests that cattle production is unlikely to become commercialised without a more stable demand throughout the year.

3.7. Sources and numbers of cattle coming to KalSel

KalSel is a beef-deficit province, approximately 70% of total beef demand is met by imports from other islands. In KalSel, there are eight big interisland cattle traders: 4 are based in Banjarbaru, 3 in Banjarmasin and 1 in Pelaihari. Imported cattle come from NTT, NTB, Sulawesi and East Java. Cattle from Java, Madura, NTT and Bima come to Kalsel through Banjarmasin port once to twice per week on ships while cattle from South Sulawesi come through Batulicin port by ferries. Some cattle may have come through East Kalimantan by truck. The majority of cattle brought in from other islands by traders are slaughter cattle (70%). Some cattle which are deemed too small for slaughtering (< 200kg) may be fattened up or re-conditioned by the traders or farmers (30%). Breeding cows and heifers are brought in only occasionally by government under the cattle distribution program. The numbers traded, the breeds and the prices from other provinces are presented in Table 2.

Table 2. Sources, numbers, price and live weight of cattle imported into South Kalimantan

Cattle source	Breed	No./month	Live weight (kg)	Pricing method	Price of live cattle (Rp/kg)
East Java	Limousin	750	600-750	Scale	44-51,000
S. Sulawesi	Bali	1,000	300	Scale	50,000
NTT	Bali	1,500	300	Scale	46-47,000
NTB (Bima)	Bali	1,500	250-300	Scale	46-47,000
Local	Bali	250	unknown	Estimation	unknown
Total		5,000			

The butchers/traders interviewed also indicated to us that in terms of taste, beef from exotic breed is better, followed by beef from Sulawesi (raised predominantly in an intensive system), which is better than beef from NTT or NTB (raised predominantly in an extensive system).

3.8. Issues

The most significant issue facing farmers and local traders is the increase in live cattle imports from NTT, Sulawesi and Java in recent years. As a result, slaughter cattle price has dropped by as much as Rp. 2 million/head. Previously, we learned from traders in NTB that they have redirected their market

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from Jakarta to other islands because they could not compete with cheaper frozen beef imports in the Jakarta/West Java market – their main market in the past. The most significant issue facing beef retailers is the increase in frozen beef imports from Australia and India. One beef retailer claimed that her sales have been reduced by as much as 60%. In KalSel, frozen beef imports are only available from a government-owned meat distribution center. The main issues facing the butchers/traders are: frozen beef imports which depress demand for local beef (retail prices are Rp. 80,000/kg for frozen beef and Rp. 120-130,000/kg for local beef); local cattle from KalSel cost more because they are traded by estimation, rather than by weighing scales; and in August/September and January, there is a supply shortage from other islands because of rough seas, which forces him to source locally in a lower volume and at a higher cost.

4. Conclusion

South Kalimantan is experiencing a growing demand for beef. However, few local cattle farmers have benefited from this market opportunity. The main reasons are uncompetitive compared with interisland cattle, depressed beef the demand due to imported frozen beef, and the demand for beef in KalSel appears to be both price and income elastic. Several changes are required to improve the livelihoods of the farmers in KalSel, including the change in attitudes and market orientation that views cattle farming as a business, rather than as a savings device, and adoption of improved production technologies that improve productivity and reduces.

Acknowledgements

Authors thank the Australian Centre for International Agricultural Research for funding this research through the IndoBeef Program, and Dinas Livestock, Quarantine Office, farmers and cattle/beef traders in KalSel for providing data and market information, as well as their time to assist us in this research.

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