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Meat Broiler Supply Chain Analysis at Malang City, East Java (A Study on One Meat Broiler Distributor)

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Abstract: The research has been conducted on April 1st to May 1st 2010, at Malang City, East Java Province. Result of research shows four patterns of marketing chain. The first marketing chain is farmer/producer → wholesaler → retailer → consumer. The second marketing chain is farmer/producer → wholesaler → RPA → retailer → consumer. The third marketing chain is farmer/producer → wholesaler → restaurant → consumer. The final marketing chain is farmer/producer → wholesaler → retailer → broker → consumer. Basically, value chain on each chain is about the unbalanced profit share taken on each chain, the final marketing agent is inclined to take the highest profit, thus make the price on consumers become higher. The result of marketing margin analysis indicates that the margin distribution of first chain is 26.52%, while those of second, third and fourth chain are 28.08%, 13.36% and 32.04%. Farmer's share in first chain is 44.72%, while those in second, third and fourth chain are 43.57%, 61.56% and 40.22%. Profit share per cost of each farmer is similar in rate of 0.08. The profit share of broker in the first chain is 0.47, while those in second, third and fourth chain are 0.49, 0.09 and 0.59.

Key words: Broiler farming, marketing margin, farmers share, profit share

INTRODUCTION

Indonesia has a large poultry industry. Production is mainly aimed to supply the national market, although some exports of processed products and one-day-old chicks exists and may be important regionally. The development of livestock in Indonesia also coincides with the Livestock Revolution of the 1980s, a high growth rate in the poultry sector in both developed and developing countries. The demand for meat, egg and milk has increased significantly as the economy grew and average income rose. In 1999, the amount of consumption for cattle and poultry meat, eggs and milk was 1.7, 0.6 and 1.1 million tons, respectively. These amounts were equivalent to 4.1 kilogram of meat per capita per year, 2.7 kilograms of eggs per capita per year and 5.09 kilograms equivalent of milk per capita per year, respectively. In 2003, these amounts increased to 6.08 kilograms of meat per capita per year, 4.47 kilograms of eggs per capita per year and 7.28 kilograms equivalent of milk per capita per year.

In the poultry sub-sector, the consumption of chicken meat (broiler and non-broiler) increased slightly during the period of 2004-2006. The consumption of chicken meat increased from 2.08 kilograms per capita per year in 2004 to 2.3 kilograms per capita per year in 2006. However, the consumption of eggs decreased from 3.45 kilograms per capita per year in 2004 to 3.04 kilograms per capita per year in 2005 and revived again increasing to 3.31 kilograms per capita per year in 2006 (Central Agency of Statistics). The income elasticity of demand for poultry products in Indonesia is very elastic, shown by a

significant decrease (5.25%) in its consumption during the economic crisis at the end of the 1990s. After the crisis, the level of consumption of poultry products increased by 9.75%, as the consumers, including the rural poor, saw that poultry products were the most affordable protein source. One should note that the substitution elasticity of demand for poultry products is also high, implying that when the prices of poultry products increase, consumers easily substitute the poultry consumption with beef, fish, etc (Oktaviani, 2008). Poultry industries in Indonesia vary from backyard poultry to commercial breeding farms. About half of commercial breeders present in the country use vertically integrated operations. However, most of the small to medium enterprises lack integration, DOC supply, hatchery egg suppliers and feed mills. In addition, abattoirs belong to different actors. There are four types of broiler industries in Indonesia (Muladno *et al.*, 2008):

- Full vertical integration (A-Type), an enterprise that has all the business of the primary component (grandparent stock, parent stock, final stock and abattoir) and contributing component (Feed mills companies, Medicine Company and meat processing plant).
- B-Type as semi-vertical integration, an enterprise which has all the business of the primary component (grandparent stock, parent stock, final stock and abattoir), but only has one contributing component (feed mills companies or drug company, or meat processing plant).

- C-Type (Partial vertical integration) has two primary components and one or two contributing components.
- Non-vertical integration (D-Type) has only one primary component and only one or two contributing components.

Markets for poultry and poultry products are a centre for economic and social activity in the community. Indonesia has more than 13,000 live bird markets operating daily, where 80% of traded poultry is sold alive and 20% slaughtered (Safe poultry Trade practices, 2007).

Poultry/live bird markets: A live bird market is a specific location where only live bird transactions take place and includes pet bird markets and poultry markets. Live bird markets are usually temporally operating markets. Their operating schedules may follow a specific religious calendar, e.g. open every 5th day. Poultry are usually traded in the early morning. Local traders move between the markets that are open on different days. Poultry are usually not separated by species (Sumiarto and Arifin, 2008). Biosecurity conditions are poor, there is not enough water and there are unhygienic and/or unsanitary conditions. No personal protective equipment are used by live bird sellers. There is no disinfecting of birds, crates, pens, nor do store facilities take place (Safe poultry Trade practices, 2007).

Traditional markets: Traditional markets are places where all commodities for daily needs, including live birds, are offered. The poultry section includes live bird selling, slaughtering and carcass selling activities with inadequate hygienic and sanitary conditions. A traditional market can be categorized as modern based on the physical aspects of the building, the trading system and the human resources. Traditional markets are called wet markets and are characterized by unhygienic and unsanitary conditions, where there is no permanent roof (Safe poultry Trade practices, 2007). Traditional markets operate every day. Often small slaughter places are located at these markets. The number of traditional markets is much lower than the number of poultry markets. City of Malang is second big city in east java below Surabaya, Malang is one of centre area of higher education in Indonesia, its indicated by more than 50 universities that operate in this town. Based on number of university students, Malang has an relatively higher meat broiler demand than others cities in east java. So, this research has an objective to analyze meat broiler supply chain and to analyze meat broiler marketing efficiency, i.e. marketing margin, market share, farmer share and profit share.

MATERIALS AND METHODS

The research has been conducted from 1st April to 1st May 2010, at Malang City, East Java Province. Research location has been selected purposively at one of meat

broiler distributor in Malang that operate not only as meat broiler distributor but also as nucleus on broiler farm partnership scheme with 140 plasma or broiler farmers. Primary data were collected using questionnaire, and secondary data were collected directly from other parties (meat distributor and local government offices). Marketing efficiency has been analyzed using this formulas:

Marketing margin:

$$MM = Pr - Pf$$

MM = Marketing margin (Rp/kg)
Pr = Consumer price (Rp/kg)
Pf = Producer price (Rp/kg)

Farmer's share:

$$Spf = (Pf/Pr) \times 100\%$$

Spf = Marketing efficiency (%)
Pf = Producer price (Rp/kg)
Pr = Consumer price (Rp/kg)

Profit share and cost marketing share:

$$Ski = (Kpi) / (Pr - Pf) \times 100\%$$

$$Sbi = (Bpi) / (Pr - Pf) \times 100\%$$

Ski = Profit share at-I (I=1) (Rp/kg)
Kpi = Marketing profit at-I (Rp/kg)
Sbi = Cost marketing share at-I (Rp/kg)
Bpi = Cost marketing at-I (Rp/kg)
Pr = Consumer price (Rp/kg)
Pf = Producer price (Rp/kg)

RESULTS AND DISCUSSION

Meat broiler price level agreed by meat broiler distributor as nucleus with broiler farmers as plasma in the partnership scheme is indicated at Table 1.

Table 1: Meat broiler prices

Live weight (kg/head)	Prices (Rp)
<1.00	12.620
1.00-1.19	12.430
1.20-1.39	12.280
1.40-1.59	12.240
1.60-1.79	12.280
1.80-1.99	12.360
2.00-Up	12.380

Source: Primary data survey (2010). *) 1 US \$ = Rp 9.023,-

Table 2: Broiler farm inputs agreed by nucleus and plasma

Broiler farm inputs	Price (Rp/head)
Day Old Chicks (DOC)	3.850
Feed S10	5.300
Feed S11	5.250
Feed S12	5.225

Source: Primary data survey (2010). *) 1 US \$ = Rp 9.023,-

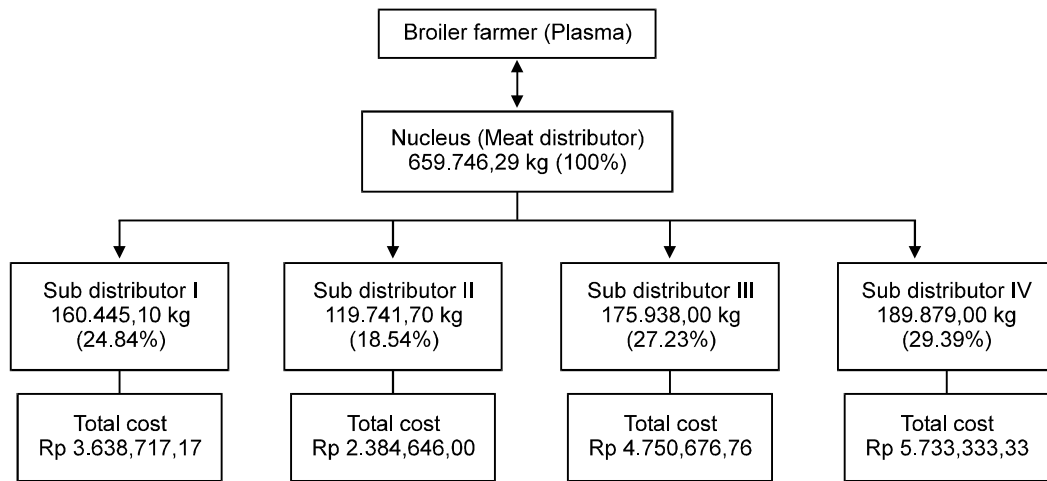


Fig. 1: Meat broiler marketing channel and marketing cost

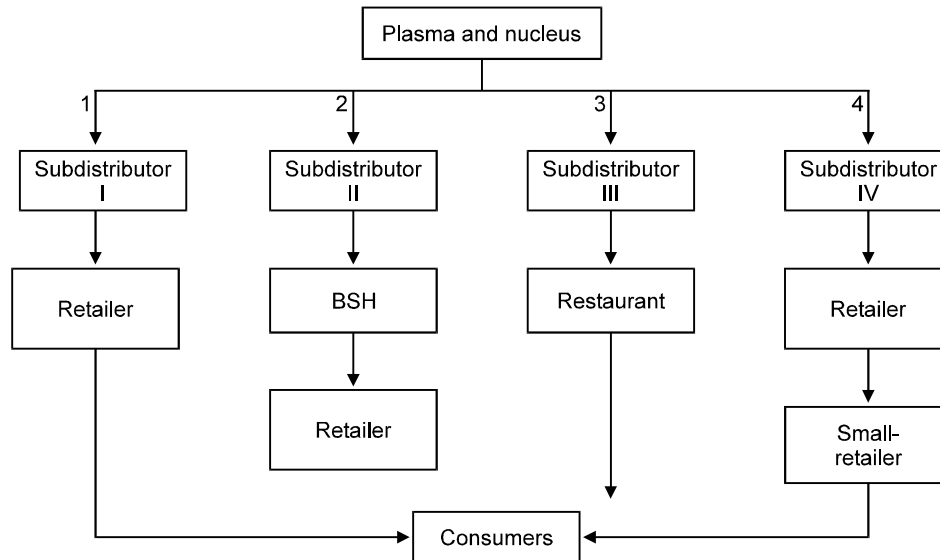


Fig. 2: Broiler meat marketing channel

In average broiler chicken consume feed is about 3.2 kg per head during growing production period 35 days to 40 days, with Average Daily Gain (ADG) is about 1.8 kg per. Basically, broiler farming management between plasma that have been used by farmers or plasma is identical, but there are a difference on farm scala between farmers.

Broiler farm inputs and outputs agreed by nucleus and plasma is fixed before broiler farming started, means that if there are price inputs or outputs fluctuations at the period after that agreement and during production period (35 to 35 days), the prices agreed is remain fixed. The consequences of that situation to be halter by nucleus and plasma. In east java, broiler farm inputs and outputs were fluctuated, even daily. So, this level price input and

output agreement is risky vis a vis nucleus and also plasma. On the other side this agreement is crucial for minimizing risks, or as a price guarantee mechanism between nucleus and plasma.

Figure 1 indicated meat broiler marketing channel and marketing cost. Nucleus as broiler meat distributor collected is about 659.75 kg per day from broiler farmer as plasma. From that amount has been distributed to sub-distributor 1, 2, 3 and 4 is about 24.84%, 18.54%, 27.23% and 29.39% respectively. Marketing cost is varied between Rp 2.384,646,00 to Rp 5.733,333,33 its depend on marketing channel.

There are four broiler meat marketing channel as indicated on Fig. 2. First level are broiler farmers as plasma and meat distributor as nucleus, second level

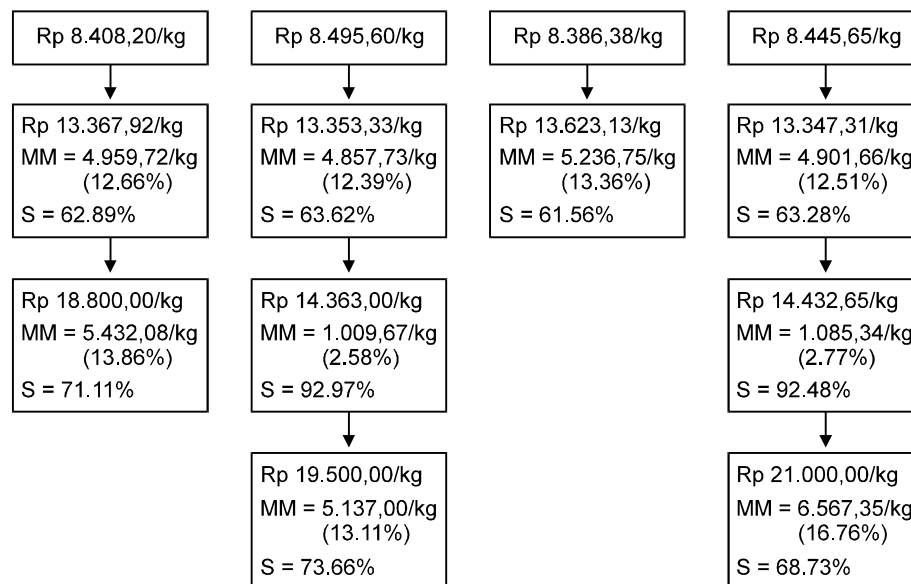


Fig. 3: Meat broiler marketing margin and farmers share. MM = Marketing Margin, S = Farmer's Share

are sub-distributor or big trader, third level are mid-retailer, restaurant and slaughter house and finally on the fourth level are small-retailers.

Figure 3, indicated broiler meat price, marketing margin and farmers share. Broiler meat prices varied between Rp 8.386,38/kg to Rp 8.495,60/kg at the first level of marketing channel or at farm level. At the second level, meat broiler price varied between Rp13.347,31/kg to Rp 13.623,13/kg with marketing margin varied between 12.39% to 13.36% and farmers share varied between 61.56% to 63.62%. At the third level marketing margin varied between 2.58% to 13.86% and farmers share varied between 71.11% to 92.97%. Finally, at the fourth level, marketing margin varied between 13.11% to 16.76% and farmers share varied between 68.73% to 73.66%. That results implies that a longer channel of marketing has consequences on higher of marketing margin but smaller on farmers share.

Conclusion:

- There are four type of meat broiler marketing channels including several actors: broiler farmers as plasma, distributor as nucleus, sub-distributor or big trader, retailer, small retailer, slaughter house and restaurant.
- The highest value of marketing margin is at fourth marketing channel is about 32.04% and lowest at third marketing channel is about 13.36%.
- The highest value of farmers share is at third marketing channel is about 61.56% and lowest at fourth marketing channel is about 40.22%.

- The highest profit share is at fourth marketing channel is about 0.59% and lowest at third marketing channel is about 0.09%.

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