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The Relevance of a Rules-Based Freshmilk Price Structure Policy in East Java : An Evidence Based Assesment

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Abstract

At present, Indonesia is still lack of freshmilk supply, domestic freshmilk production is covered only 30% national freshmilk processing industry needed and is about 70% milk industry material should be imported, mainly from New Zealand, Australia, EU and USA. The following actors are active in the formal dairy supply chain in Indonesia: (1) Milk producers, (2) The primary dairy/ village cooperatives (KUD), (3) The overall dairy cooperative (GKSI), (4) The milk processors/ dairy industry, (5) Based on that situation, and to improve the development of smallscale dairy farming activities in east java, this paper have an objective to examine the relevance of a rules-based freshmilk price structure policy in east java. East java dairy supply chain inefficiencies are reflected in a relatively large difference between farm gate milk price and consumer prices of milk products. Factors like the dependency on imported milk powder and the strongly fluctuating world market prices, the lack of protection against world market fluctuations for the local milk producers, the scale and structure of dairy farming, and poor raw milk quality affect the development of east java dairy supply chain.

Keywords: Price structure, dairy farming, dairy cooperative, dairy industry

Introduction

Strategic interaction between public and private actors is increasingly recognised as an important determinant of freshmilk market performance in east java. Trust and consultation tends to positively affect private activity while uncertainty of government behaviour impedes it. Encouragingly, a rules-based policy tend to promotes a much more stable market outcome thereby substantially reducing the risk of input output prices instability. These results underscore the importance of predictable and transparent rules for the government involvement in freshmilk markets.

The local milk production in East Java is mainly concentrated in the higher altitude areas of the island. There is an interest of the government and the private sector (dairy industry/Nestle) to stimulate local milk production. Competing claims for land and climatic conditions in the lower altitude areas limit expansion of milk production at East Java. The trend to establish large scale dairy farms will contribute to the increase of milk production, but also in future the bulk of the milk will be produced by smallholders. Increase of milk production per cow by improved farm management practices, increased efficiency of the dairy supply chain (which should result in higher farm gate milk prices), and improved provision of services and inputs to farmers are key factors in increasing milk production on small scale farms.

Government policy is directed to increase self-sufficiency in milk products from the current 30% to 50% by 2015. Small-scale dairy farming that leads to improved incomes and employment opportunities in the rural areas also meet important objectives of government policy. Government policy directed at the primary producers aims at improvement of production levels per cow (milk production per cow per day to increase from the present 8-10 kg to 15 kg per cow per day), improvement of raw milk quality and a minimum farm gate milk price to be at least 80% of the world market price.

Main actors in the dairy supply chain in Indonesia are the dairy farmers (mainly smallholders), primary and secondary dairy cooperatives (main activities: milk collection and transport, service and input supply), milk processors, the government, and private service and input suppliers. Many of the managerial problems at the small scale farms are related to feeding. Increased availability of land for forage production (growing of forage in forests, plantations), better utilization of available forage, better quality concentrate feeds, and improvement of farmer's knowledge will provide better conditions for milk production (Wouters 2009).

Dairy cooperatives owned by farmers assist dairy farmers by means of collection and sales of milk to the milk processing industry and by providing

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feeds, credit (for feed, cows etc) and services to farmers. Some cooperatives have engaged in small scale processing and marketing of dairy products. Dairy cooperatives are a good entry point for improvement of dairy farming practices, because of their direct relation with farmers. Management competences of many cooperatives however need to be strengthened. The overall dairy cooperative GKSI offers an indirect platform for farmers to negotiate with the dairy industry. The dairy industry is dominated by a number of large players: Frisian Flag/Foremost, IndoMilk/Indolacto and UltraJaya (all with dairy plants at West Java) and Nestle (with a plant at East Java). Current government policy imposes limited levies on importation of dairy products. The poor raw milk quality is a major problem for the use of locally produced milk by the dairy industry. Milk payment schemes according to quality (total solids and total plate count) stimulate cooperatives to improve milk quality, but as yet insufficiently at farm level. The dairy industry provides (technical) assistance to a number of cooperatives and their members to improve milk quality and milk production.

Dairy and/or village cooperatives assist dairy farmers by collecting and selling milk to the milk processing industry and/or by processing and marketing of milk. Moreover, cooperatives provide inputs, credit in kind (feed and cows), and services to farmers. Efficient collection schemes, effective chilling equipment, and high standards of hygiene at the collection centers are needed to keep collection costs low and to improve milk quality.

At present there are about 90 primary dairy cooperatives in Indonesia. These cooperatives collect milk from their members. Many cooperatives have cooling facilities at collection centers and/or collection points, either on loan or pre-paid by the dairy industry, supplied from donor funds, or financed by the cooperative itself. The cooperatives without cooling facilities can take the milk to the cooling facilities of the overall cooperative GKSI where milk is cooled and thereafter transported to the dairy plants. The role of the overall cooperative GKSI in facilitating cooling and transport is declining. Many primary cooperatives deal directly with the dairy industry.

Many cooperatives provide services for farmers as well. Supply of concentrate feeds is the most important. A well-developed cooperative like KOPSAE in Pujon, Malang Regency not only supplies concentrate feeds but also provides veterinary services and AI services to members. The services are paid collectively (through collective deduction from the milk price). KOPSAE employs extension staff, veterinarians and AI technicians. Members pay a fixed fee per liter of milk. Besides, this cooperative exploits a shop, processes part of the milk, and sells small quantities of pasteurized milk.

Most dairy cooperatives produce cheap concentrates (price setting is an important issue for the farmers) at the expense of the quality (too low protein levels while energy content is often also too low). A cooperative can negotiate for and facilitate services which are out of reach for individual small scale farmers like acquiring land to grow forage.

The management of the cooperatives is crucial. The dairy cooperatives are a democratic institution and for organizational matters supported by the Ministry of Cooperatives and the overall dairy coop GKSI. The dairy cooperatives have a small board of directors (chairman, secretary and treasurer) and a supervisory board. Both boards are composed of member farmers. Many cooperatives have difficulty in electing farmers who are competent for board positions. Capacity building of management and members of cooperatives is an important issue.

A number of cooperatives also employ extension workers. Extension officers still concentrate on individual farm visits and seem to be more reactive (for example reacting to a problem with milk quality) than pro-active. The impression is that group approaches in extension, with application of participatory methodologies (for example farmer field school approaches) could make extension more efficient and more farmer directed. This requires more training of trainers. Within the dairy cooperative there are often registered farmers groups in a village or neighborhood engaging in certain common activities like dairy farming, that could be a possible vehicle for extension.

At present, Indonesia is still lack of freshmilk supply, domestic freshmilk production is covered only 30% national freshmilk processing industry needed and is about 70% milk industry material should be imported, mainly from New Zealand, Australia, EU and USA. Domestic milk industry demand is about 1.3 milion tons, whereas national freshmilk production is about 489 tons so real demand needed is about 810 tons.

Based on that situation, and to improve the development of smallscale dairy farming activities in east java, it is necessary to examine the relevance of a rules-based freshmilk price structure policy in east java.

Method and data

Information and data that have been used in this paper were collected from various secondary data sources and articles on rules-based freshmilk price

structure. Method of information and data analyzes that have been used were descriptive analytical or an assesment based an evidence the implementation of rules-based freshmilk price structure in east java and its evolution.

Results and discussion

Since LOI of IMF was singed in 1997, government attention on dairy farming activities was very low. However, government role is highly needed especially on technical aspetc for increasing productivity of dairy farming business, i.e. to diminished the consequences of dairy cattle deseases (mastitis, brucelosis, etc.).
The following actors are active in the formal dairy supply chain in Indonesia: (1) Milk producers, (2) The primary dairy/ village cooperatives (KUD), (3) The overall dairy cooperative (GKSI), (4) The milk processors/ dairy industry, (5)

Milk producers
Most dairy farmers practice zero-grazing (cut and carry or stall feeding) and lack of land to grow forage is a major limitation for farmers to expand their dairy enterprise and/or for new farmers to start with dairy farming. Possible solutions are intensification of forage production (fertilization and cutting management) and expansion of forage production into public or private estates. In Lembang, the dairy cooperative KPBSU has made a contract with the Forest Department so that members of the cooperative can grow forage on about 1000 acres in between young trees in the production forests. Similar approaches are proposed in the Blue Print (Toharmat *et al.*, 2007), including growing of forage or grazing in plantations.

Inadequate feeding is another major problem, related to lack of forage. Unbalanced feeding (often too much concentrate in relation to forage) and poor quality concentrate feeds lead to poor nutritional status and often also fertility problems of the cows. Reproductive problems and low conception rates resulting in long calving intervals are often related to feeding (minerals, inadequate energy supply at beginning of lactation). Health problems like metabolic diseases and displaced abomasums are caused by poor feeding practices. A number of simple innovations like growing more forage, chopping of forage, and better quality concentrates in combination with improving the farmers' knowledge could improve the feeding practices.

The dairy cooperatives
Dairy and/or village cooperatives assist dairy farmers by collecting and selling milk to the milk processing industry and/or by processing and marketing of milk. Moreover, cooperatives provide inputs, credit in kind (feed and cows), and services to farmers. This " cooperative model" (see figure 2) was introduced nationwide after 1983 (Sulastri and Marhajan 2002).

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The dairy industry
Five dairies dominate the dairy market with Frisian Flag Industries/Foremost being the main producer of milk products and second regarding the processing of locally produced milk. Nestlé dominates the market in East Java (1 dairy plant). In West Java, Frisian Flag/Foremost and Indomilk/Inodolacto have both 2 factories, Danone (previously Numico) 1 and UltraJaya 1 (Fabiosa, 2005).

The Indonesian Consumer Organization (Suksmaningsih, 2005) mentions that at national level an oligopolistic market situation exists resulting in too low farm gate milk prices. From 1982-1998, government regulations required the milk processing industry to produce milk products from locally produced milk and recombined milk (from imported milk powder) at fixed ratios. This regulation was abolished in 1998 after the financial crisis, among others as part of conditions imposed by the IMF readjustment program to lower consumer prices. Current government policy imposes limited government restrictions on imports of dairy products, although bureaucratic import procedures may take long. For finished products an import tariff of 5% is in place.

Table 1. Milk payment scheme (from July, 2007) according to composition and hygienic quality

(adapted from Meylinah, 2008 based on information GKSI).

Suksmaningsih (2005) mentioned also that milk prices in supermarkets were at equal levels with dairy products in Australian supermarkets and that farmers received too little of the margin. A quick and dirty survey in the supermarket showed prices of UHT milk per liter on average of about 12,000 IDR/litre (about 80 euro cents, December 2008) while prices (including the extra bonus payment of the dairy industry) paid to farmers (KPBSU, Lembang) are about 3200 IDR/liter (about 20 euro cents, December 2008). The ratio producer/consumer price based on the available information is 3.75. This ratio is about 2 in the Netherlands but comparable with Turkey where the ratio producer/consumer price was about 3.5 in 2006 (CBAT, 2007). Several factors contribute to the large difference between producer and consumer prices but high collection and transportation costs are important factors.

Freshmilk price structure model was applied when global freshmilk price highly increased, it was between 2007 to 2008. Through that model, freshmilk price of dairy producers in easr java for example, it was divided in several components. That components are pricebase, competitive, loyalty, transport and feed incentives.

In central and west java provinces, even not exactly equal, freshmilk processing industry also introduced freshmilk price structure model. However, freshmilk price components were more simple, for example there exist feed price component and fuel component.

In east java provice, PT Nestle Indonesia has fixed price-base freshmilk is about 2,700 IDR per KG, with competitive incentive is about 700 IDR per KG and since december 2008 has been decreased 200 IDR became 500 IDR per KG. Others incentives are loyalty incentive 300 IDR per KG, transport incentive 150 IDR per KG and soya bean meal processing residue as a feed 200 IDR per KG.

An assesment based an evidence the implementation of rules-based freshmilk price structure model in east java and its evolution, it seem to be related with conflict of interest between government, industry/private sectors, dairy cooperatives and dairy farmers. Government would to improve the development of dairy farming activities, so incentive schemes that promote business activities on each stakeholders must be take into account. Industry/private sectors or freshmilk processing industry would have supply guarantee of freshmilk material, and tend to seek global freshmilk price fluctuation, when global freshmilk price fall below domestic freshmilk price, national milk industry tend increase milk material importation, and when global freshmilk price rise up to domestic freshmilk price, national milk industry tend to increase arbsorbtion of domestic freshmilk production. Dairy cooperatives would to expand their business activities, they stand up between government, private sectors and dairy farmers. As a tool of government, internaly dairy cooperative tend to have a conflict of interest between social and business objectives. Dairy farmers would to improve their incomes because their business in general is so small having only 2 – 3 dairy cattles, so improving their family incomes are the main ojectives.

Based on that situation, government roles on freshmilk price structure rules is seem to be not so clear, means that industry/private sectors are the main actors that determine domestic freshmilk price structure rules, surely depend on their interests. Sometimes, that rules are not really business reasoning, for example when global freshmilk price fall below domestic freshmilk price means that industry used milk and milk product material importations, their not introduced domestic freshmilk price incentives. But if global freshmilk price rise up to domestic freshmilk price means that industry used more domestic fresh milk, their introduced subjectively price based, and competitive, loyalty, transport and dairy feed incentives. So, it is clear that domestic freshmilk pricedetermine by industry/private sectors closely depend on global freshmilk price fluctuation.

Conclusion

East java dairy supply chain inefficiencies are reflected in a relatively large difference between farm gate milk price and consumer prices of milk products. Factors like the dependency on imported milk powder and the strongly fluctuating world market prices, the lack of protection against world market fluctuations for the local milk producers, the scale and structure of dairy farming, and poor raw milk quality affect the development of east java dairy supply chain.

Alternative possible solutions to improve freshmilk price structure rules determination in east java should focus on improvement of an integrated approach in which government, dairy industry, dairy cooperatives and dairy farmers take part is required. The government could support improvement of profitability by means of subsidies, tax policies, improved services, and facilitating the availability of dairy inputs.

Table-1 Milk payment scheme

Milk product	Milk price (IDR)	Euro cents (rate 1-12-2008)
Grade 1 TS 12% TPC < 250,000	3047	18.80
Grade 2 TS 12% TPC 250,000 – 500,000	2947	18.20
Grade 3 TS 12% TPC >500,000 – 1,000,000	2847	17.60

Source: Meylinah (2008) Rules-based freshmilk price structure policy in east java:

Table 2: Freshmilk price criteria evolution

Year	Fat	SNF	TS	TPC	Antibiotic content	Price milk criteria
1978-1983	no	no	no	no	no	Based on volume (liters)
1984-1987	yes	no	no	no	no	Fat content standard 3% Penalty 5 IDR per Kg each 1% < or > standard
1988-1997	yes	yes	no	no	no	Based on each gram fat and SNF
1998-April 2004	yes	yes	yes	yes	no	Based on each gram fat and SNF TS min 11% & bonus or penalty 5 IDR per Kg per +/- 0.1% TPC 20 – 30 millions, with bonus < 20 m. & penalty > 30 m.
Mei 2004	yes	yes	yes	yes	no	Based on each gram fat and SNF TS < 11% rejected & bonus > 11% TPC 20 – 30 millions, with bonus < 20 m. & penalty > 30 m.
June 2004	yes	yes	yes	yes	no	Based on each gram fat and SNF TS < 11% rejected & penalty between 11% - 11.2% & bonus >11.3% TPC 10 – 15 millions, with bonus < 10 m. & penalty > 15 m.
August 2004	yes	yes	yes	yes	yes	Based on each gram fat and SNF TS < 11% rejected & penalty between 11% - 11.2% & bonus >11.3% TPC 10 – 15 millions, with bonus < 10 m. & penalty > 15 m. Antibiotic penalty 200 IDR per Kg
2007/2008	yes	yes	yes	yes	yes	Based on each gram fat and SNF TS < 11% rejected & penalty between 11% - 11.2% & bonus >11.3% TPC 10 – 15 millions, with bonus < 10 m. & penalty > 15 m. Antibiotic penalty Rp 200,- per Kg **Note:** In West Java : bonus on feed & fuel energy In East Java : price based 2,700 IDR per Kg, competivity incentive 700 IDR per Kg, loyality incentive 300 IDR per Kg, milk transport incencentive 150 IDR per Kg & soya bean residue/feed incentive 200 IDR per Kg.

Source: GKSI (2009).
Note: SNF (solid non fat), TS (total soild), TPC (total plate count)

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