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Analysis of the Milk Supply Chain of Livestock Farmer Groups in Gunung Pati District, Semarang Regency

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ABSTRACT

The aim of this research is to determine the supply chain system, margins and marketing efficiency of dairy cow's milk in Gunung Pati. This research was conducted in February-March 2024. The location of this research was determined purposively with the consideration that Gunung Pati District is a dairy cattle business center with great potential. The respondents in this study were the entire population of the three largest Farmer's Groups (KTT) in Gunung Pati District, namely 68 dairy farmers consisting of KTT Rejeki Lumintu, KTT Sido Makmur and KTT Rukun Makmur. This research analysis method is descriptive in nature to describe the location and type of marketing channels. The results of the research show that the marketing margin and marketing efficiency it is good, this can be seen from farmers who get more than 50% of the profit, so the farmer's profits are quite large.

Keywords: Supply chain, efficiency, marketing margin

INTRODUCTION

The livestock subsector is part of the agricultural sector that supplies protein sources include milk, eggs, and meat (Wankar et al., 2021; C. M. Godde, 2021; dan Erdaw, 2023) Milk is product from dairy farming businesses which provides nutritious food needs (Kassa, 2019; Garcia et al., 2019). Milk protein requirements increasing along with increasing population, income levels, and urbanization (Maulani et al., 2022; Smith et al., 2024). The development of globalization is quite rapid currently encouraging livestock businesses for able to survive and thrive, but in Indonesia is still constrained because the majority are smallholder dairy farms small ownership scale (Apdini et al., 2021; Pamungkasih dan Febrianto, 2021; Kusumastuti dan Febriansyah, 2023) by involving good family members including wife, children and siblings as energy work (Doss et al., 2018).

Semarang Regency consists of 19 sub-district, Gunungpati District is one of three sub-districts which develops agriculture, horticulture, livestock for the City Government Semarang (Bekti et al., 2023). The geographical conditions of the Gunungpati region is high above sea level and surroundings which is beautiful to create a dairy farm thrives and becomes a milk supplier for the city of Semarang. Gunungpati District has the largest population of dairy cattle in the city of

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Semarang reaches 50% of current dairy cow population (Musabbikhin et al., 2020).

Problems that are generally frequent occurs on cattle farms in the region Gunung Pati is gender equality still lacking, farmer income and power product competition that is not yet optimal. Selling price which is relatively low to middlemen one of the factors of low income farmer. Inefficient marketing method also leads to reduced income farmers in the Gunung Pati District area. Apart from that, the quality of the food available still lower than the source other dairy products. Found a number problems in supply chain operations which has an impact on the smoothness of the channel and marketing efficiency. The problem is arise in this supply chain can classified as risk, where risk is the possibility of something happening adverse events resulting from its operation (Soedjana, 2007). Business risks are defined as a fluctuation in return percentage project or possible losses. This thing which is one of the causal factors low income of cattle breeders dairy farmers, especially cattle farmer groups in Gunung Pati region (Rusdiana and Sejati, 2009).

The aim of this research is to analyzing the dairy milk supply chain in livestock farming groups in Gunungpati District, Regency Semarang. The results are expected to be successful provide answers to problems which occurs in coordination, chain integration supply and competitive advantage in the household livestock farmers in improving welfare of dairy farmers in Gunung Pati District Area.

METHODOLODY

This research was conducted in 3 groups Livestock Farming namely KTT Rejeki Lumintu, KTT Sido Mamkur and the KTT Rukun Makmurt is on Mount Pati. Location determination research is carried out purposively or deliberately in Gunung Pati District, Semarang Regency with consideration that this area is a center the largest and most dairy cattle business potential.

Research methods used in this research is a quantitative method and qualitative with a research approach survey. The survey research method is investigation conducted for obtain facts from symptoms existing and looking for information.

Data required in research this is primary data and secondary data. Primary data is data about respondents which can be obtained directly or indirectly from the respondent farmer. The primary data was obtained through direct interviews with 68 respondents which was determined by purposive sampling. This amount is determined based on Lenaini's research (2021), states that retrieval an illustrative sample that originates from something certain considerations such as characteristics population. Meanwhile secondary data was obtained from related departments or agencies as well as studies libraries related to variables in this research.

This study use descriptive statistical analysis was used to describe data without the aim of being interesting applicable generalizations or conclusions for the wider population. In this research statistical analysis description is used to describe respondent profile in channel or pattern of distribution of dairy cow's milk. Marketing margins and efficiency used to see and know margins and marketing channel efficiency existing in each Farmer's Livestock Group (Summit) in Gunung Pati District. Referring in (Septya et al., 2024), with using the formula:

Mmi = Ps – Pb

Where:
Mmi: Marketing margin at every level marketing agency
Ps: Selling price at each institutional level marketing
Pb: Purchase price at each institution marketing

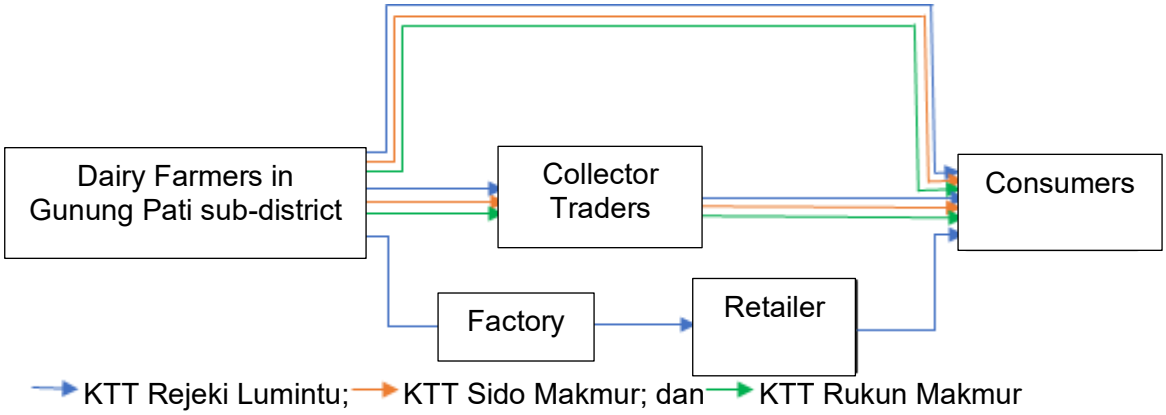
$$\mathbf{MP} = \frac{Pr-Pf}{Pr}\ x\ 100\%$$

Where:
MP: Fresh milk marketing margin
Pr: Milk prices at the consumer level
Pf: Milk price at producer level

RESULT AND DISSCUSSION

Dairy Milk Value Chain Gunung Pati District

Marketing channels are channels used by manufacturers in distribute their products to consumer. In product marketing patterns, we can see chain or supply flow of a product agriculture which contains movement of a product from each his institution. From the research results, channels marketing of cow's milk produced cattle breeders in Gunung Pati District can be seen in Figure 1.



Source: Primary data that has been processed, (2024)

Figure 1.
Cow's Milk Marketing Channels in Gunung Pati District

Based on Figure 1 above, it can be seen that marketing channels consist of three Livestock Farmers Group (KTT) which exists in Gunung Pati District, the three summits namely the Lumintu Fortune Summit, the Sido Makmur Summit, and the Rukun Makmur Summit. The supply chain for each of the three summits is not to long, because caused by several factors include fresh milk production. Milk product does not last long if its is not treated with special processing. That's way resulting from the Lumintu Fortune Summit, KTT Sido Makmur and KTT Rukun Makmur dominantly distributed to traders collector and retail directly on end consumers. Handayani and Nurlaila (2011) stated that milk is perishable's commodity, so the marketing channels should get serious attention.

Sido Makmur Summit and Rukun Makmur Summit predominantly distributed to merchants emptive and directly in ecer on consumers who are already become

fixed subscriptions merchants as well as sold directly by breeders to consumers who who come directly to the location of livestock. But in the other hand, Lumintu Summit has one different channels, namely some member breeders Rejeki Lumintu Summit sells production milk their cows in factories or industries small milk processing that later The dairy products are retailed through national dairy retailers or businesses which is around Semarang City. The process of flowing goods from farmers to consumers requires costs, with marketing costs the price of a product will be higher. The longer the marketing chain, the costs incurred in marketing will increase. To find out the amount of profit and marketing margin for fresh milk in marketing channels 1 to 3 in Gunung Pati District, Semarang Regency, see Tables 1 and 2.

Margins And Efficiency Marketing

Marketing margin calculation is The final consumer purchase price divided by producer selling price (Sudiyono, 2002). Milk Marketing Margin at Lumintu Summit, Sido Makmur Summit, and Rukun Summit Prosperous can be seen in Table 1.

Table 1
Milk Marketing Margins at the Summit Lumintu, Sido Makmur Summit, and Summit Rukun Makmur

No	Aspect	Marketing Margin		
		Lumintu Summit	Sido Makmur Summit	Rukun Makmur Summit
			Rp/lt	
1	The price of fresh milk at the consumer level	10000	10000	10000
2	The price of fresh milk at the producer level	5000	5500	4500
3	Marketing margin	5000	4500	5500

Marketing margins at the Lumintu Summit is Rp. 5000/ltr, Sidomakmur Summit is Rp. 4500/ltr, and Rukun Makmur Summit is Rp. 5500/ltr. The highest marketing margin in the summit prosperous through the prosperous harmony through direct-to-consumer marketing. Because of each summit has a different management of cows, so the benefits that are collected are also different. Setyowati (2008) states that margin is an element that important in marketing strategy.

According to Widitananto (2012) an efficient marketing system will encourage low margins due to reduced marketing costs, thereby increasing prices at producers and relatively cheap prices for consumers and competitiveness products are higher, so that fair profits are achieved for marketing institutions. This statement is supported by the opinion from Atmakusuma et al. (2017) seen from the market aspect, the greater the marketing margins can cause inefficient marketing channels.

Marketing Efficiency

Efficiency economical marketing of fresh milk known by looking at the

percentage marketing margins and the part that farmer's share on every marketing.

In Table 2. it can be seen that share received by the farmer (farmer's share) at the lumintu summit at 50%, the Sido Makmur Summit at 55%, and the Rukun Makmur Summit at 45%. It was concluded that the marketing of milk at the Summit Lumintu, and Sido Makmur Summit are already efficient due to received parts breeders more than 50%, while on Rukun Makmur Summit at 45%. According to Rasyaf in Abadi (2007), if the profits that are accepted by producers > 50% then marketing is said to be efficient, and if the profits are accepted by producers < 50% means marketing not yet efficient.

Table 2

No	Aspect	Marketing Efficiency		
		Lumintu Summit	Sido Makmur Summit	Rukun Makmur Summit
			%	
1	Marketing Efficiency	50%	45%	55%
2	Share received by producers (breeders)	50%	55%	45%

CONCLUSION

Supply chain in the three farmer groups is good enough, this can be seen from the three indicators i.e. Short supply chain, margins marketing that is not long (many are direct-to-consumer) and efficiency good marketing is above 50% so it can be said to be an advantage breeders are large and prosperous in terms of economy.

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REFERENCES

Abadi, F. N. 2007. Analisis Pemasaran Keripik Tempe di Kecamatan Sambungmacan Kabupaten Sragen. Skripsi S1 Program Studi Sosial Ekonomi Pertanian/Agrobisnis Fakultas Pertanian Universitas Sebelas Maret Surakarta. Tidak Dipublikasikan.

Apdini, T., Zahra, W. A., Oosting, S. J., Boer, I. J. M., Vries, M.d., Engel, B. dan Middelaar, C.E.v. (2021). Understanding variability in greenhouse gas emission estimates of smallholder dairy farms in Indonesia. International Journal of Life Cycle Assessment 26: 1160–1176. https://doi.org/10.1007/s11367-021-01923-z

Bekti, M. A., S. Gayatri, dan A. S. Prasetyo. (2023). IMPLEMENTASI PROGRAM KOSTRATANI DI

WILAYAH KERJA BALAI PENYULUHAN PERTANIAN KECAMATAN GUNUNGPATI. Jurnal Mahatani, 6(1), 32-53.

Doss, C., Meinzen-Dick, R., Quisumbing, A., dan Theis. S. (2018). "Women in agriculture: Four myths". Global Food Security. 16: 69–74. https://doi.org/10.1016/j.gfs.2017.10.001

Erdaw, M. M. (2023). Contribution, prospects and trends of livestock production in sub-Saharan Africa: a review. International Journal of Agricultural Sustainability, 21(1). https://doi.org/10.1080/14735903.2023.2247776

Garcia, S. N., Osburn, B.I., and Cullor, J.S. (2019). A one health perspective on dairy production and dairy food safety. One Health, 7, https://doi.org/10.1016/j.onehlt.2019.100086

Godde, C.M., Mason-D'Croz, D., Mayberry, D. E., Thornton, P. K. and Herrero, M. (2021). Impacts of climate change on the livestock food supply chain; a review of the evidence. *Global Food Security, 28.*

Kassa, A. 2019. Review of performance , marketing and milk processing of dairy cattle production system in Ethiopia. Journal of Dairy, Veterinary & Animal Research, 8(1), 1–9. https://doi.org/10.15406/jdvar.2019.08.00234

Kusumastuti, A. E. & Febriansyah, E. (2023). PERAN KOPERASI AGRO NIAGA (KAN) JABUNG DALAM PENGEMBANGAN USAHA PETERNAKAN SAPI PERAH DI KECAMATAN JABUNG, KABUPATEN MALANG (STUDI KASUS DI DESA GADING KEMBAR). PROSIDING Seminar Nasional Integrasi Pertanian dan Peternakan, 1(1), 15-27, https://semnasfpp.uin-suska.ac.id/index.php/snipp

Lenaini, I. 2021. Taknik Pengambilan Sampel Purposive dan Snowball Sampling. *HISTORIS*, 6(1), 33-39.

Maulani, I., Rahmadi, Y., Sugiyono, dan Ismiarti. (2022). KAJIAN KUALITAS SUSU SAPI TINGKAT PETERNAK DAN PELOPER DI DESA JETAK KECAMATAN GETASAN KABUPATEN SEMARANG. Media Informasi Penelitian Kabupaten Semarang (SINOV), 4(1), 1-12.

Musabbikhin, A., S. Satmoko, dan A. S. Prasetyo. (2020). HUBUNGAN KOHESIVITAS DENGAN PARTISIPASI ANGGOTA PADA KELOMPOK TANI TERNAK REJEKI LUMINTU DI KELURAHAN SUMURREJO KECAMATAN GUNUNGPATI KOTA SEMARANG. Jurnal Sosial Ekonomi Pertanian,13(3), 232-241.

Pamungkasih, E. dan N. Febrianto. 2021. PROFIL PETERNAK SAPI PERAH DI DATARAN RENDAH KABUPATEN MALANG. KARTA RAHARJA, 3(2), 29-35.

Rusdiana, S., & Sejati, K. W. (2009). Upah Pengembangan Agribisnis Sapi Perah dan Peningkatan Produksi Susu Melalui Pemberdayaan Koperasi Susu. *Forum Penelitian Agro Ekonomi*, 43-51.

Septya, F., Andriani, Y., Pebrian, S., Yulida, R. dan Rosnita, R. (2024). Supply Chain Analysis Of Rice Marketing Actors In Dumai City In Supporting Urban Food Security. *Agrisocionomics: Jurnal Sosial Ekonomi Pertanian*, 8(1), 310-321.

Smith, K., Watson, A. W., Lonnie, M. , Peeters, W. M., Oonincx, D., Tsoutsoura, N., Simon-Miquel, G.,

Szepe, K., Cochetel, N., Pearson, A. G., Witard, O.C., Salter, A.M., Bennett, M., and Corfe, B. M. (2024). Meeting the global protein supply requirements of a growing and ageing population. European Journal of Nutrition https://doi.org/10.1007/s00394-024-03358-2

Soedjana, T. D. (2007). Sistem Usaha Tani Terintegrasi Tanaman-Ternak sebagai Respons Petani terhadap Faktor R isiko. *Jurnal Litbang Pertanian*, 26(2), 82-87.

Wankar, A.K., Rindhe, S.N. dan Doijad, N.S. (2021). Heat stress in dairy animals and current milk production trends, economics, and future perspectives: the global scenario. Tropical Animal Health and Production, 53(70), 1–14. https://doi.org/10.1007/s11250-020-02541-x

Widitananto, A., G. Sihombing, dan A. I. Sari. (2012). Analisis pemasaran ternak sapi potong di Kecamatan Playen Kabupaten Gunung Kidul. Tropical Animal Husbandry, 1(1), 59–66.