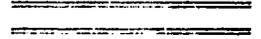


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Small Ruminant - CRSP



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**FARMERS' SHARE, MARKETING MARGIN AND  
DEMAND FOR SMALL RUMINANTS IN NORTH SUMATRA**

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**FARMERS' SHARE, MARKETING MARGIN AND DEMAND  
FOR SMALL RUMINANTS IN NORTH SUMATRA**

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**ABSTRACT**

The farmers' share, marketing margin and local demand for small ruminants were observed in North Sumatra during December 1992. The survey evaluated the margins at different levels of the marketing system and local demand.

Middlemen play an important role in the marketing system. There is evidence of monopsonistic behaviour or collusion of the traders. The bargaining system between trader and farmers is not working well.

There are four levels of in the marketing chain for small ruminants in North Sumatra namely village/district, regency, municipality and provincial. The marketing margin and farmer's share per animal at different levels of the marketing system are as follows : a) farmer-regency (Rp 6575) with farmer's share 85.18 % ,b) farmer-municipality (Rp 7617) with farmer's share 83.22 % ,c) farmer-province (Rp 11600) with farmer's share 77 %. Approximately 290000 sheep and goats are consumed in North Sumatra every year. The average liveweight of sheep and goats slaughtered is about 18 kg. Middlemen estimate that only 45 % of total demand curently fullfiled. It means that supply is not keeping pace with demand.

**PANGSA-PETANI, MARGIN TATANIAGA DAN PERMINTAAN  
RUMINANSIA KECIL DI SUMATRA UTARA**

**ABSTRAK**

Pangsa-petani, margin tataniaga dan permintaan lokal ruminansia kecil telah diamati di Sumatra Utara pada bulan Desember 1992. Survei dilakukan untuk menilai besarnya margin pada berbagai tingkat saluran tataniaga dan besarnya permintaan lokal (untuk ruminansia kecil).

Pedagang perantara (penggalas) memegang peran yang penting dalam sistem tataniaga yang ada. Terdapat petunjuk adanya kekuatan monopsoni atau kolusi diantara pedagang perantara. Sistem tawar menawar antara petani degang pedagang perantara berlangsung kurang baik.

Ada empat tingkat rantai pemasaran ruminansia kecil di Sumatra Utara, yaitu tingkat desa, kabupaten, kotamadya dan propinsi. Pangsa-petani dan margin tataniaga pada berbagai tingkat tataniaga tersebut berturut-turut adalah: a) petani-pedagang tingkat kabupaten (85,18% dan Rp 6575), b) petani-pedagang tingkat kotamadya (83,22% dan Rp 7617), c) petani-pedagang tingkat propinsi (77% dan Rp 11600). Lebih kurang 290000 domba dan kambing di konsumsi di Sumatra Utara setiap tahun. Berat rata-rata domba yang dipotong adalah 18 kg. Menurut pedagang perantara, pengadaan atau pemotongan ruminansia kecil sekarang hanya dapat memenuhi 45% dari jumlah permintaan yang sebenarnya. Hal ini berarti bahwa pengadaan ruminansia kecil masih kurang dari permintaan.

## INTRODUCTION

Sheep and goats are an important source of meat in North Sumatra. Resources for production of small ruminants vary from region to region. One of the main problems with the small ruminant marketing system in North Sumatra is insufficient number of markets for farmers wanting to sell animals.

A good market for livestock is a place where a producer can take or send animals and be reasonably sure of receiving offers from a number of buyers. A trader views a market as a place where stock can be bought in a short time without having to travel long distances to many producers. The basic function of the market is thus to bring together sellers and buyers to trade under convenient conditions at a prearranged time and place.

There is a small ruminant market in South Tapanuli, but it is far away from sheep farmers in other parts of the province. The feasibility of establishing local markets (such as in Java) needs to be researched by focussing on farmer share, marketing margin, and local demand.

Costs and margins of marketing animals reflect the efficiency of a marketing system. Since the costs of marketing are affected by the marketing channels used and the marketing services received, knowing costs and margins helps animal producers to determine the most efficient way to market their product.

A marketing margin is the difference between prices at different levels of the marketing system. The margin between farm and retail is the difference between what the consumer pays and what the producer receives for the animal produce.

## METHODOLOGY

### Marketing margin and farmer share

A marketing margin is the difference between prices at different levels of the marketing system ( Amir and Knipscheer, 1989). The margin between farm and retail is the difference between what the consumer pays and what the producer receives for the agricultural produce. It is expressed as the following :

$$\text{Marketing Margin (MM)} = P_2 - P_1$$

where  $P_1$  = Price at one level in the market  
(such as the retail level)

$P_2$  = Price at another level in the market  
(such as the farm level)

In this research the marketing margin was determined by analyzing prices of sheep and goats sold by farmers and middlemen.

A farmers' share is the price spread between farm level and retail, expressed as a percentage. The farmers' share was determined by the following equation :

$$\text{Farmers' Share (FS)} = \frac{\text{Price at farm level}}{\text{Price at retail level}} \times 100 \%$$

The first stage of this research focussed on gathering information from farmers, middlemen (penggalas) or key informants and slaughter houses in Medan, Kisaran, Rantau Prapat, Pematang Siantar, Binjai and Tebing Tinggi.

These chosen towns represent the highest populations of small ruminants and the highest annual slaughter of small ruminants (Dinas Peternakan Propinsi Sumatra Utara, 1990). Data on small ruminants slaughtered, market prices and marketing costs were collected using surveys.

#### Demand for sheep and goats in North Sumatra

An earlier study on small ruminant marketing channels in North Sumatera (Karakaro et. al.1990) has recognized four levels of middlemen namely village, sub-district, district and provincial traders. However, marketing margin, marketing efficiency and local demand are still unclear. The aim of this study was to determine demand for sheep and goats by analyzing data of total registered and unregistered slaughtering of sheep and goats in North Sumatra.

### RESULTS AND DISCUSSIONS

#### Total registeredly slaughtered sheep and goats

Table 1 shows the total sheep and goats slaughtered at five slaughter houses in North Sumatra namely Medan, Kisaran, Pematang Siantar, Binjai and Tebing Tinggi from April until November 1992. It shows approximately that 1843 sheep and goats were registered slaughtered monthly at Medan's slaughter house. There was a higher total of sheep and goats slaughtered during 1993 compared to

previous year in the provincial capital Medan and in the municipal slaughter house Kotamadya Pematang Siantar. The increase was approximately 12.3 % in Medan and 6.3 % in Pematang Siantar. However, there was a decrease of approximately 5.2% of total slaughtering at Tebing Tinggi and a constant total slaughtered at Kisaran. The maximum total sheep and goats slaughtered during 1992 and 1993 for all cities surveyed occurred in July. Of the four regional slaughter houses, Binjai had the highest average of sheep and goats slaughtered during 1992/93, namely 222 per month. The number of sheep and goats slaughtered at Pematang Siantar, Tebing Tinggi and Kisaran were 197, 138 and 162 animals, respectively.

Table 1. Total registered sheep and goats slaughtered at several slaughter houses (RPH) in North Sumatra

Month	RPH Medan		RPH T.Tinggi		RPH P.Siantar		RPH Kisaran		RPH Binjai	
	1991	1992	1991	1992	1991	1992	1991	1992	1991	1992
April	1099	1571	120	159	227	198	155	155	270	224
May	1555	1980	153	164	202	210	165	165	290	240
June	1595	1989	149	144	188	186	160	160	270	250
July	1877	2145	158	95	192	261	165	165	260	242
August	1742	1969	150	140	192	198	160	160	200	240
September	1743	1892	138	128	188	176	160	160	170	240
October	1602	2021	145	130	176	202	165	170	190	240
November	1735	1984	135	116	184	214	160	160	228	230
December	1907		138		182		165		224	
January	2263		150		190		165		232	
February	2262		129		171		165		232	
March	1934		124		216		165		240	
T O T A L	36865		2765		3943		3245		4442	
AVERAGE	1843		138		197		162		222	

Source : Local livestock service in North Sumatra.

### Total unregistered sheep and goats slaughtered

Government regulations implemented by the Directorate General Livestock specify that any slaughter for human consumption should be in a slaughter house operated by the local livestock services. However, especially for sheep and goats many sheep and goats are slaughtered outside the slaughter house (unregistered slaughtering). Table 2 describes the average monthly registered and unregistered sheep and goats slaughtered at several locations in North Sumatra.

Table 2 indicates that there are a tremendous number of sheep and goats slaughtered outside of the slaughter house. The percentage of unregistered sheep and goats slaughtered outside of the slaughter house ranges between 54-154 percent. This indicates that the slaughter house is not as effectively used as it should be. The

Table 2 : Average registered and unregistered sheep and goats slaughtered at different levels of marketing system in North Sumatra.

No. Cities	Average slaughtered monthly (1993)			Percentage unregistered (%)
	registered	unregistered	real	
1. Medan	1944	2988	4932	154
2. Kisaran	162	110	272	68
3. R.Prapat	100	115	225	115
4. P.Siantar	204	111	315	54
5. T.Tinggi	135	195	330	144
6. Binjai	238	167	405	70
Total	2783	3686	6469	

Source : Estimated by authors based upon local Livestock Services information.

problems seem to be that: (1) the butchers lack knowledge on the advantages of using the slaughter house so that they slaughter sheep or goats at home and bring the meat to the market directly, (2) farmers in the villages cannot afford the additional costs of bringing animals to the slaughter house in the town, and (3) butchers try to reduce the slaughtering fees paid by underestimating the number slaughterings.

#### Cost and profit at different levels of marketing system

There are approximately 35 middlemen who play an important role in small ruminant marketing within the surveyed areas. However, during the survey only 30 middlemen were interviewed. Based on the information from the middlemen there are at least 8 components of marketing costs such as transportation, slaughtering fee, cooling, electricity, tax, cleaning services, night watches and labor (Table 3).

## Margin analysis

Changes in prices from a certain market level to another are called marketing margins. Presently there are four levels in the sheep or goats marketing channel namely village collector, regency middlemen, municipality middlemen and provincial middlemen. The higher

Table 3. Cost and profit selling each sheep/goat (BW 18 kg) at different levels of marketing system (in December, 1992)

Types	Total Cost (TC)/animal ( Rp.)					
	P	M			R	
	Medan	P.Siantar	T.Tinggi	Binjai	Kisaran	R. Prapat
1. Buying animal	43,400	43,200	41,400	42,000	38,500	39,600
2. Marketing cost/animal						
Transportation	100	85.71	100	100	-	-
Slaughtering fee	1650	1500	1500	1500	1750	1500
Cooling	150	-	-	-	-	-
Electricity	1.54	-	-	-	-	-
Tax	36.92	25.48	-	-	250	2500
Cleaning services	8.79	-	-	-	100	150
Night watch	1.54	-	-	-	-	-
Labor	128.21	-	-	-	1250	-
# Marketing cost	2,077	1,611	1,600	1,600	3,350	4,150
3. Total cost (1 + 2)	45,477	44,811	43,000	43,600	41,850	43,750
4. Selling products						
Meat	38,500	35,000	35,000	35,000	35,000	36,750
Liver	4,400	4,000	4,000	4,000	3,000	3,500
Internal organs	1,500	3,000	2,250	1,500	2,000	1,700
Head	2,000	1,500	1,500	1,500	1,500	1,500
Legs	600	400	400	600	200	600
skin	2,400	2,200	2,000	2,400	1,500	1,500
Total income	49,400	46,100	45,150	45,000	43,200	45,550
5. Profit/animal (4-3)	3,923	1,288	2,150	2,400	1,350	1,800
6. Average profit/ animal/ each level of mkt chains	3,923		1,946		1,575	

Note : P = provincial level ; M = municipality level ; R = regency level

the marketing margin the lower the farmer's share. In other words, the higher the marketing margin the higher the price should be paid by consumers. Table 4 describes the marketing margin of sheep and goats in the different levels of the marketing system in North Sumatra.

Table 4 shows that the highest marketing margin is between farmers and provincial traders, followed by that between farmers and municipality traders. This indicates that in the marketing system in North Sumatra the longer the marketing channel the higher the marketing margin. Even for sales to provincial traders the farmer's share relatively high ; therefore the profit received by farmers is relatively high. However, it is assumed that the shorter the marketing chain the higher the profit farmers received.

Table 4. Marketing margin of sheep and goats at different levels of marketing system in North Sumatra

Types of analysis	Level of marketing system			
	Farmer	Regency	Municipality	Provincy
Price of animal	37800	39050	42400	43400
Total marketing cost	-	42200	43804	45477
Income selling products	-	44375	45417	49400
Marketing profit	-	1575	1946	3923
Marketing margin/farmer share (%) :				
		M. Margin	F. Share(%)	
farmer - regency		6575	85	
farmer - municipality		7617	83	
farmer - provincial		11600	77	
regency - municipality		1042		
regency - provincial		5025		
municipality - provincial		3983		

#### Structure of the small-ruminant markets

Compared to other regions in Indonesia, North Sumatra has a unique marketing system. Middlemen (penggalas) usually buy sheep and goats directly from farmers and then transport them to the next middlemen. There are four types of middleman in the marketing system, namely village/district collectors, middlemen at regency level (Kabupaten), middlemen at municipality level (Kotamadya) and middlemen at provincial level. The main business of middlemen is usually buying sheep or goats from village/district collectors and selling meat to consumers. In addition to being village collectors most of middlemen are also butchers. This makes sense since the

main profit of small ruminant traders is from the selling of internal parts. The profit is gained if the middleman is working as both retailer and butcher.

The main problem in the marketing system in North Sumatra is that no market exists at sub-district or district levels. Therefore, the only way farmers can sell their animals is through a chain market of middlemen (Figure 1.). This structural inefficiency in marketing sheep and goats domestically will continue until producers have greater direct access to markets and can bargain directly for higher prices.

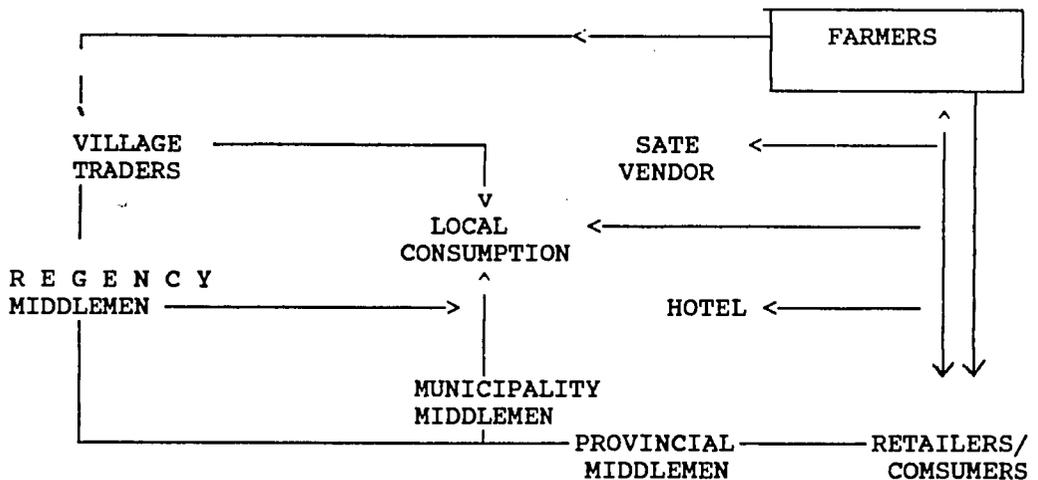


Figure 1. Small Ruminant Market Structure in North Sumatra.

Demand for sheep and goats in North sumatra

To estimate the demand for sheep and goats in North Sumatra the data collected in this base line survey of total registered and unregistered slaughterings of sheep and goats were combined with estimates released by the Regional Livestock Services of sheep and goats slaughter in each slaughter house (Table 5). Sheep and goats slaughtered by farmers in ritual ceremonies are numerous but are not included in these estimates.

Table 5 shows that approximatly 190000 sheep and goats are slaughtered every year. The average liveweight of sheep and goats slaughtered is 18 - 20 kg. The sheep and goats slaughtered fulfills only about 45 % of North Sumatra demand (Buyung et. al. personal communication). Therefore, local demand for sheep and goat in North Sumatra totals about 290000.

Table 5. Estimated monthly demand for sheep and goats in North Sumatra, 1992/93.

No. Location	Sheep and goats slaughtered		
	registered	unregistered	total
1. Medan	58320	89640	147960
2. Kisaran	4860	3300	8160
3. R.Prapat	3000	3450	6750
4. P.Siantar	6120	3330	9450
5. T.Tinggi	4050	5850	9900
6. Nias	00	68	68
7. Sibolga	38	63	101
8. P. Sidempuan	968	103	1071
9. Tarutung	19	10	29
10. Sidikalang	17	20	37
11. Kaban Jahe	222	20	242
12. Setabat	61	117	178
13. Deli Serdang	480	20	500
14. Asahan	1600	80	1680
15. Simalungun	16	65	81
		Total	186207

Source 1- 5 : Local Livesatock Service (1992)

6-15 : Provincial Livestock Service (1991)

#### CONCLUSION

In North Sumatra there is a general shortage of sheep and goats slaughter due to low efficiency of production. The demand for sheep and goats is approximately 290000 animals per year, which suggests that supply is not keeping pace with demand. The sheep and goats slaughtered fulfills only about 45 % of North Sumatra demand (Buyung et. al. personal communication). In other words, the local offtake of sheep and goats is approximately 55 per cent. This study confirms that middleman play an important role in the marketing system. However, there is evidence of monopsonistic behaviour or collusion of the traders. The bargaining system between trader and farmer is not effective. The establishment of markets to shorten the marketing chain is recommended to increase farmer share.

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