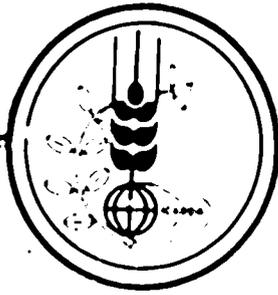


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RESEARCH REPORT

No. 76

MARKETING OF GOAT AND SHEEP
SKINS IN HIGHLAND BALUCHISTAN

by

Abelardo Rodríguez, Imran Ali,
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1992

THE MART/AZR PROJECT

HIGH ELEVATION RESEARCH IN PAKISTAN



Pakistan Agricultural Research Council

ARID ZONE RESEARCH INSTITUTE,

Brewery Road, Quetta, Pakistan.

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This research report series is issued by the Management of Agricultural Research and Technology Project/Arid Zone Research Component (MART/AZR). This project is sponsored financially by the Mission to Pakistan of the United States Agency for International Development (USAID).

The project contract is implemented by the International Center for Agricultural Research in the Dry Areas (ICARDA) at the Pakistan Agricultural Research Council's Arid Zone Research Institute (AZRI).

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MARKETING OF GOAT AND SHEEP SKINS IN
HIGHLAND BALOCHISTAN, PAKISTAN

Abelardo Rodríguez¹, Imran Ali, Mohammed Afzal and Nisar Ali Shah²

ABSTRACT

The value of the edible and non-edible meat by-products produced annually in Balochistan province is about \$23 million and most of the raw skins are exported, as there are no tanneries in Balochistan. Informal and formal survey information was used to investigate the marketing process of sheep and goat skins, to identify problems faced by intermediaries involved in skin marketing, to identify opportunities to improve market efficiency and to evaluate the potential for developing tanneries and export channels. Two major factors affected the skin prices: seasonality and animal species. Prices for sheep and goat skins received by butchers in winter were 16-22% higher than prices in summer. Sheep skin prices were 38-83% higher than goat skin prices. All butchers sold their skins directly to *beoparis* (wholesalers) who collect the skins. Across all areas, only the market margin (difference received between price received by butchers and *beoparis*) of goat skins was significant. *Beoparis* grade skins by size and used place of origin as an extra criterion. One-third to one-half of the butchers borrowed money from *beoparis* to finance their operations while 12-19% of the *beoparis* borrowed from commission agents. None of these merchants borrowed from private or public financial institutions. Price information flowed on a one-to-one basis, and there was no agency that monitored skin prices. Because of poor management, most of the skins of highland Balochistan were of low quality, in terms of size, thickness, flaying cuts and scars. To induce producers to deliver animals with better skins, it is necessary to show them that there are consistent price differences for different skin qualities. Through a market information system, price information could be regularly collected, analyzed and disseminated through radio and newspaper communications, but it is necessary to persuade government decision makers of the potential benefits associated to these actions.

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INTRODUCTION

After cotton, exports of leather and leather products are Pakistan's second largest source of foreign exchange (GOP, 1991a), and their value has increased from US\$269 million in 1985 to US\$483 million in 1990 (GOP, 1991b). This rapid growth has been successfully based on the domestic supply of skins. Considerable research and training has been done by the Leather Research Division (Pakistan Council of Scientific and Industrial Research) and the Leather Products Development Organization on the processing and handling of skins. However, little or no attention has been paid to the social and economic factors that affect supply.

As long as skins are perceived as meat by-products, their supply will continue to be inelastic; that is, the supply of skins will respond to meat, rather than leather, prices. The tanning industry has the capacity to absorb more than the total domestic supply of 37.6 million skins (GOP, 1991b). The imports of raw skins have increased in recent years (GOP, 1991b) to satisfy the demand of the tanners, who have correspondingly increased their exports of leather and leather goods. Pakistan has evolved from a net exporter of raw skins to a net exporter of leather and leather products (GOP, 1991b). While this is a desirable trend in economic development, additional savings could be achieved if the domestic supply of skins satisfied the demand from the tanners.

Information about the supply of skins in Pakistan is sparse and very general, covering only the number of skins produced annually (GOP, 1991a) and their quality (Mahmood and Walters, 1990, and Alvi, 1991). Ogiwara (1984) described the relevant features of skins in the tanning process but did not provide information about the quality supplied from different provinces in the country. Siddiqui (1992) analyzed more comprehensively the factors that affect the quantity and quality of skins.

The supply of skins is not only a function of biological aspects that determine production, but also of those marketing aspects that constrain their flow from producers to consumers. If there is market efficiency, the preferences of tanners are passed back through the marketing chain to the producers who then respond to the price signals, producing commodities in quantities as a function of prices and costs. Efficient marketing systems provide goods and services over time and space and in the form consumers want at the lowest possible cost (Brokken and Williams, 1990, and Mitchell, 1985).

To improve the production and marketing of skins in Balochistan province, there are important questions to be addressed: can livestock producers increase their income by paying attention to factors that affect skin quality? Is there anything that the Pakistan Agricultural Research Council (PARC) can do to assure a steady supply to the leather industry? More specifically, is it feasible to develop tanneries in Balochistan given the fact that this province has 27% of the sheep and goat population in the country?

The present study was initiated upon the suggestion of the USAID mission to Pakistan (MART/AZR Project, Phase II), one of whose important goals is to

Identify skin production and marketing bottlenecks in Balochistan and to promote the creation of agribusinesses (Chaudhry, 1991). The objectives of this study were: 1) to obtain a clearer understanding of the marketing of sheep and goat skins in highland Balochistan, 2) to identify problems faced by different intermediaries involved in skin marketing, 3) to identify opportunities to improve market efficiency and 4) to evaluate the potential for developing tanneries and export channels in highland Balochistan.

OVERVIEW

Using figures provided by Mahmood and Rodríguez (1991), the estimated provincial annual offtake of small ruminants is 56,000 tons of meat with a market value of Rs2,840 million (\$130 million, using \$1=Rs21.8, July 1990). Adding the value of edible and non-edible by-products, this figure increases to Rs3,336 million or \$153 million. Transhumant and nomadic pastoralists own 85% of the livestock (FAO, 1983), and large quantities of livestock move within Balochistan, and between it and the surrounding provinces and countries, according to regular seasonal patterns.

Butchers buy the live animals from the market, slaughter them either in the government slaughterhouse or in their own shops, and sell the fresh meat. The butcher collects the skins from the slaughterhouse or does the flaying (skinning) himself. The skins are perceived as by-products rather than as value-added products of the meat industry suitable for further processing (Rao, 1992). These skins are generally sold to the wholesalers (*beoparis*) either for cash payment or on a contract basis. The skins are brought to the *beoparis'* warehouses for salting. They are classified and stored until shipment to the terminal markets, where commission agents, operating on behalf of the tanneries, receive them at the end of the marketing chain. *Beoparis* coordinate their work with the slaughterhouse managers to collect daily shipments of skins, or periodically collect the skins from butchers' shops. According to Ogiwara (1984), the skins from Pakistan are not of high quality: "their main characteristics are fine grains which make them suitable for shoe uppers. The best quality goat skins are from Punjab. Those from Balochistan and mountainous areas are lower in quality, as they are thinner and marred by many scratches." In contrast, Naseem (1992) states that the quality of goat skins is quite satisfactory but the quality of sheep skins is not so good due to skin diseases.

Markets in Balochistan are for the collection of skins, as there are no tanneries in the province. Most are located in villages or small towns, and Quetta city is the largest redistribution market. In Quetta, skins are collected from different areas of Balochistan, Iran and Afghanistan, salted, graded, traded and shipped to the terminal markets in Sindh or Punjab provinces.

METHODS

Informal interviews were conducted with butchers, *beoparis* and managers of the slaughterhouses in different cities of highland Balochistan to identify the most important steps in the marketing process, the services provided by different individuals and their costs. With this information and the scarce secondary information about skin production and marketing (Ogiwara, 1984, Alvi, 1991 and Mahmood and Walters, 1990), separate questionnaires were prepared for butchers and *beoparis*. The questionnaires were pre-tested to ensure that the wording was clear enough to obtain the desired information (Annex 1 presents both questionnaires). The questionnaire for butchers included the following items: sheep and goats bought per day for slaughter; number of skins sold to *beoparis*; price received per skin and variations due to season, skin disease, and flaying cuts; grading system; transportation costs, credit availability, source of credit and price information. The *beoparis*' questionnaire included: the number of skins handled of each species, the pricing and grading system, means of transportation, distance to market and costs, availability and source of credit and pricing information, and processing and storage costs. Formal interviews were held during summer 1991 with 60 butchers and 35 *beoparis* in different towns of highland Balochistan (Fig. 1) grouped in three areas: Quetta (Quetta, Kuchlak and Mastung), north (Sanjavi and Loralai) and south (Kalat and Khuzdar).

Beoparis' warehouses in Quetta city were visited to measure the length and width of 80 sheep skins and 50 goat skins, which were classified by size (small, medium and large) and by origin (Balochistan, Iran and Afghanistan). The approximate sizes, estimated by multiplying length with width, were used to compare species with classified sizes and place of origin. Cross-tabulation, t-test and ANOVA procedures were used to compare differences in the relevant variables among the three areas.

THE MERCHANTS

Butchers

Butchers in the Quetta area operate larger businesses than butchers in the southern or northern areas and therefore sell more skins to *beoparis*. The average number of sheep bought per day by a butcher in Quetta was 7.2 (range 1-15) while in the south it was 3.0 (1-5) and in the north 4.0 (2-10). Likewise, the average number of goats bought per day in Quetta was 10.2 (1-30); in the south it was 2.5 (1-10), and in the north 2.0 (1-6). The two major factors affecting skin prices of small ruminants are seasonality and animal species. On one hand, prices for sheep and goat skins received by butchers in winter were 16-22% higher than prices in summer (Table 1). Because of the large supply of sheep and goat skins during the Eid holiday the prices were only 52-65% of the winter prices. On the other hand, sheep skin prices were 38-83% higher than goat skin prices. Butchers were slaughtering young animals; 4% of the sheep were younger than one year, 30% were one to two years old, 60% were two to three years old, and 6% were over three years; likewise, 35% of the goats were one to two years old, 60% were two to three

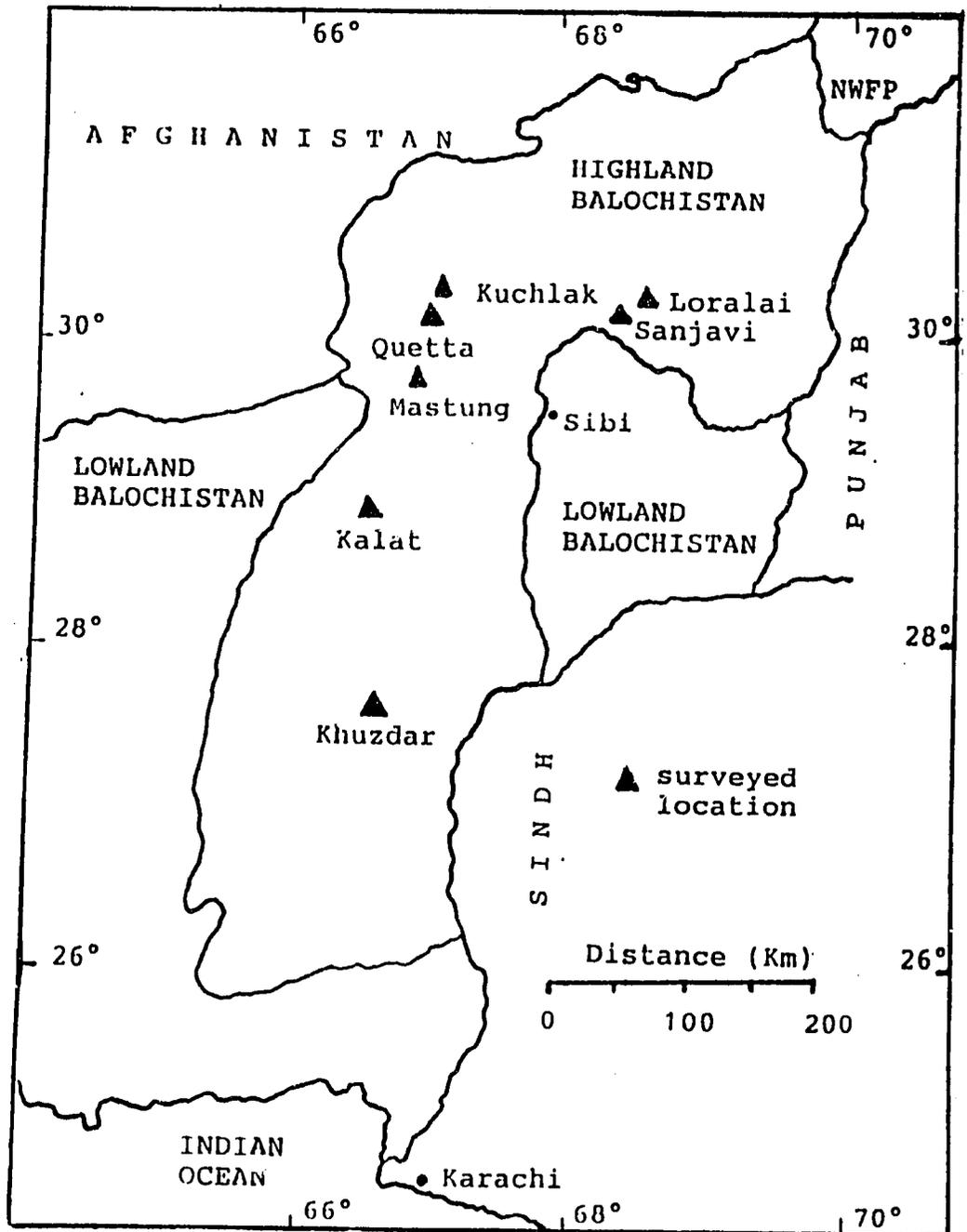


Figure 1. Locations surveyed in highland Balochistan (above 1000 m altitude)

Table 1. Prices of sheep and goat skins (Rs/skin) received by butchers in different areas in highland Balochistan, (means \pm standard deviations).

	Season	Quetta	North	South
Sheep	Winter ¹	115.4 \pm 7.1	88.2 \pm 19.3	103.5 \pm 10.6
	Summer ²	94.7 \pm 27.5	76.0 \pm 20.5	86.0 \pm 6.5
	Eid ³	75.4 \pm 21.7	58.0 \pm 19.0	64.0 \pm 8.2
Goat	Winter ¹	65.0 \pm 8.9	66.3 \pm 4.8	67.0 \pm 5.1
	Summer ²	55.4 \pm 9.2	56.3 \pm 4.8	55.0 \pm 6.0
	Eid ³	41.3 \pm 4.0	42.3 \pm 2.9	38.0 \pm 5.9

¹October–March, ²April–September, ³Eid ul Azha, which occurs in the Islamic month Hajj, (23 June in 1991).

years, and 5% were over three years. All butchers stated that they sold skins directly to the *beoparis* who collect the skins. They considered that the low number of skins sold each day did not justify the time which would be needed to transport them directly to the *beoparis*' warehouses.

Flaying costs, which included slaughtering the animal and removing the skin, were highest in Quetta (Rs12/skin), followed by the south (Rs10/skin) and the north (Rs5/skin). No salting was done by butchers. Whenever butchers had their animals killed in the slaughterhouse, they collected the carcasses and skins. A total of 123 butcher shops were present in Quetta and only 37 had a license (Municipal Committee Office, Slaughter Section, Document in Urdu provided in October, 1991). Illegal butcher shops (86) did not kill their animals in the slaughterhouse because they were not registered (in the slaughterhouse) and did not have sanitation clearance for their shops. All the butchers interviewed declared that they were licensed butchers.

Butchers did not regard skins as a component which could be marketed at advantageous prices. In all the areas surveyed the butchers sold to the *beoparis*, but only 27% of the butchers obtained market information from them. Butchers realized that skin prices varied seasonally but not that they could vary as a function of quality. This, in addition to their dependence on the *beoparis* for pricing information, makes them very vulnerable as they are the market agents who face and accept the price inelasticity of supply.

All butchers who had their animals slaughtered in a slaughterhouse (mostly in Quetta city) rented carts for transporting the carcasses and skins from the slaughterhouse to their shops. Total costs per skin, including collection, flaying and transportation, were Rs13.7 in Quetta, Rs9.5 in the south and Rs5 in the north. Distances from the slaughterhouse to the *beopari* warehouses were 4 km in Quetta and 3 km at both the northern and

southern locations. None of the butchers interviewed had storage facilities for skins; this prevented them from salting and storing the skins and selling them at the best time, which was in winter when the demand for skins was higher.

Beoparis

Beoparis in Quetta and the southern areas handled 14-37 goat skins and 11-45 sheep skins per day, while in the northern area they handled 8 goat skins and 13 sheep skins. Goat skin prices received by *beoparis* varied from Rs47.2 in the north to Rs70.0 in the south, and sheep skin prices varied from Rs54.5 in the north to Rs101.9 in Quetta. The variation of sheep skin prices in the north was about three quarters of the variation of prices in the south, or one sixth of the variation in Quetta. All *beoparis* sold to commission agents who operated on behalf of the tanneries in Karachi.

The monthly number of skins transported and sold to commission agents ranged between 2,740 in the south and 4,900 in Quetta, while it was only 1,075 in the northern area. The distance from Quetta to Karachi was 680 km, from the northern area to Quetta 160 km, and from the southern area to Karachi 220 km. Total costs per skin, including collection, salting, storage, and *octroi* (local tax) were Rs8.5 in Quetta, Rs5.6 in the south and Rs4.3 in the north. Of these costs, collection costs represented 10-18%, storage costs 60-61%, transportation costs 13-23% and *octroi* 0.5%. Skin markets in the south operated as self-contained redistributive markets, like Quetta, exporting skins directly to the terminal markets in Karachi. The markets in the north operated as collection markets, shipping skins to Quetta.

Beoparis bought the skins on the day of slaughter from the butchers and then store them for up to four weeks because they had to accumulate enough to make up a truck-load to deliver to the Quetta or Karachi market. Storage costs varied in the three areas from Rs340 to Rs514 per 100 skins. The monthly volume of skins transported from Quetta to Karachi was 3 times larger than the volume transported from the northern areas to Quetta, while the transportation costs of 6 Rs/km from Quetta to Karachi were only 16% of the transportation costs from the northern areas to Quetta.

Beoparis run family businesses with a limited number of employees. Sixty-two percent of the *beoparis* in Quetta employed non-family labor, but only 37-43% of the *beoparis* in the north and south had non-family labor. Sixty-four percent employed only one person, while 36% employed two. Monthly wages paid to laborers in the warehouses ranged from Rs650 to Rs950.

MARKET MARGINS

The difference between the skin price received by butchers and skin price received by *beoparis* constituted the market margin between these agents. Table 2 compares the prices received by butchers and *beoparis*. In the north and south differences between the skin price received by butchers

Table 2. Skin prices received by butchers and *beoparis* in highland Balochistan, averaged across seasons (means \pm standard deviations).

	Merchant	Quetta	North	South	All areas
Sheep	Butcher	92.5 \pm 15.2	78.9 \pm 4.0*	75.5 \pm 13.1*	83.1 \pm 14.3
	<i>Beopari</i>	81.6 \pm 39.1	84.4 \pm 5.6	88.8 \pm 16.2	84.2 \pm 27.6
Goats	Butcher	49.6 \pm 9.1	40.9 \pm 3.7**	49.7 \pm 6.1**	47.4 \pm 8.1**
	<i>Beopari</i>	53.4 \pm 8.6	50.6 \pm 5.6	63.8 \pm 10.9	55.3 \pm 9.8

*Butcher and *beopari* prices significantly different at $P < 0.05$.

**Butcher and *beopari* prices significantly different at $P < 0.01$.

and *beoparis* were significant ($P < 0.05$) for both sheep and goats. Only the margin of goat skins was significantly ($P < 0.01$) different across all areas. The margins in Quetta were non-significant, even negative in the case of sheep skins; this reflected the difficulty in estimating margins by means of surveys with merchants. Unreliable information from butchers and *beoparis* could explain the results. Even the significant differences do not fully explain how the *beoparis* make a profit after paying for the labor and other costs (e.g., goat skins in Quetta, Table 2). Without information from the commission agents operating on behalf of the tanneries, it was not possible to obtain a better picture of the market margins.

GRADING SYSTEM AND QUALITY

While butchers were paid different prices depending on the season, *beoparis* were paid prices which varied according to the size and origin of the skins. Butchers interviewed stated that they were paid 2-4% less for damaged skins which is an extremely small reduction. However, this may indicate that butchers perceive the cost of skin damage as a minor cost compared to the price differences due to season.

Thirteen out of fourteen *beoparis* in Quetta said that they graded the skins by size, regardless of weight. They used large, medium and small grades for sheep and goats, and used the place of origin as an extra criterion (Table 3). At the aggregate level, there were no differences between the sizes of the sheep and goat skins ($P > 0.10$). No differences were found in the sizes of the skins from Iran and Afghanistan ($P > 0.10$). However, significant ($P < 0.01$) differences were found between the skins from Balochistan and the skins from Iran or Afghanistan. The sizes of all the groups of skins were significantly different from each other except for the small and medium sizes of goat skins from Balochistan. This was possibly because the differentiation of these sizes was artificial. It was not clear

Table 3. Sizes (m²) of different skins from different origins and classified sizes traded in Quetta (summer 1991 survey) (means \pm standard deviations).

Origin	Size	Sheep	Goat
Balochi	Small	0.49 \pm 0.10	0.42 \pm 0.06
	Medium	---	0.49 \pm 0.06
	Large	0.74 \pm 0.10	0.69 \pm 0.09
Afghani	Small	0.46 \pm 0.09	---
	Medium	0.69 \pm 0.08	0.64 \pm 0.06
	Large	1.16 \pm 0.12	0.96 \pm 0.16
Irani	Small	0.41 \pm 0.07	---
	Medium	0.60 \pm 0.08	---
	Large	0.93 \pm 0.08	---

from the data collected how this grading system in Quetta relates to the grading scheme "Pak one", "Pak two" and "Pak three" introduced in Pakistan in 1968 (Chaudhri, 1971), when the country was a net exporter of raw skins. In that system these three grades were subdivided into small, medium, large and extra large sizes (The News International, Karachi, 15 January, 1992).

Table 3 shows that the largest goat and sheep skins from Balochistan were comparable with the medium sizes from Iran or Afghanistan. Size was attributable to breed and age at slaughter. It is difficult to envisage a change in breed to give larger skins. However, size for a given age could be increased by better management and nutrition. A problem faced by the commission agents was that the quality of the skins could not be confirmed until after the wool or hair was removed. Informal interviews with commission agents who bought skins on behalf of the tanneries in the Punjab revealed that the quality of the skins was associated with the place of origin or the breeds that prevailed in those places. Quality of skins was dependent upon their thickness, the absence of cuts and scars, and size. In general, commission agents considered that the quality of the skins from small ruminants in Balochistan is low, with the only exception being the sheep skins from northern Balochistan, where feed was dependable and resulted in better nutrition of the animals. Sheep skins from Iran had the highest quality, giving them good export marketability, followed by the skins from Afghanistan.

Improvement of the quality of the skins produced in Balochistan could be achieved by minimizing the presence of skin scars, deep scores or gouge-marks, disease and parasitic damage and flay cuts (Chaudhri, 1971). Producers should adopt good shearing practices to avoid skin damage. Better

nutrition, such as increasing the protein content of the animals' diet, would also improve skin quality but it would require cost-effective supplementation.

FINANCING AND PRICE INFORMATION

One-third of the butchers in Quetta and in the northern areas borrowed to finance their purchases of livestock, while almost one-half of the butchers in the south borrowed money (Table 4). None of the butchers who finance their operations borrowed money from private or public financial institutions, rather, they borrowed from *beoparis*. They did not pay interest on the loan, but it was adjusted against the supply of skins.

Table 4. Sources of credit for butchers and *beoparis* in highland Balochistan (percentages are in parentheses).

Merchant	Area	Number interviewed	Number of borrowers	Source of credit	
				Friend or relative	<i>Beopari</i> or commission agent ¹
Butcher	Quetta	27	10(37)	0	10(100)
	North	15	5(33)	0	5(100)
	South	18	9(50)	0	9(100)
<i>Beopari</i>	Quetta	16	4(25)	2(50)	2(50)
	North	8	3(38)	2(67)	1(33)
	South	8	3(38)	1(33)	2(66)

¹*Beoparis* lend to butchers and commission agents lend to *beoparis*.

Twenty-five to 38% of the *beoparis* borrowed to finance their operations. One-half of them borrowed from friends and the other half from commission agents. There was no payment of interest, but the re-payment of borrowed money to commission agents was made with skins. Half of the *beoparis* borrowed an average of Rs4,000 twice a month, 20% borrowed an average of Rs31,250 2-3 times a year and 30% borrowed Rs35,000 once a year. *Beoparis* were less dependent on commission agents for financing than the butchers were on the *beoparis*.

Seventy-three percent of the butchers did not obtain periodical information on the price of skins. The ones who obtained price information through the *beoparis* perceived them to be the best source concerning price fluctuations. *Beoparis* in turn obtained their price information from the commission agents on a one-to-one basis. There is no agency in Balochistan that monitors skin prices.

OPPORTUNITIES AND BOTTLENECKS

Are tanneries feasible in Balochistan?

An issue often raised by the different market agents involved in the skin trade is the feasibility of establishing a tannery in Balochistan, given the large stock numbers in the province and the large, but not quantified, imports from Iran and Afghanistan. Importation of skins has almost no official restrictions on the Pakistani side, and no restriction whatsoever from the neighboring countries. Even though there is no official exchange rate between Pakistan and its neighbors, Iran and Afghanistan, the favorable unofficial exchange rate of the Pakistani rupee with respect to the rial (5.34:1 in December 1991) and the afghani (47:1 in December 1991), contribute to making Quetta the most important trade center for domestic and imported skins in western Pakistan.

A small tannery could process 1,000-2,000 skins a day, but would have large water requirements of 40 to 120 l/kg of skins (Ogiwara, 1984); therefore, the most suitable areas for the location of tanneries in highland Balochistan would be in the northern districts of Balochistan, where water is less scarce than in Quetta, Kalat or Khuzdar districts. A good water supply is necessary for tanning but it is also important to consider the effluent emissions. If chromium tanning, as opposed to vegetable tanning, is used it would be very advisable to consider the potential of ground-water pollution caused by untreated effluents. Because of potential fluctuations in the exchange rate of the Pakistani currency against the rial and afghani currencies, it would be more realistic to consider the potential of tanneries in highland Balochistan supplied with domestic skins for the national leather market, rather than a tannery producing leather for the international market. Even though foreign exchange is desirable, setting up tanneries in Balochistan aimed at domestic leather production could have a stimulating effect on the provincial skin market where quantities and prices of skins are not subject to any regulations. This stimulus could also be enhanced by better information being supplied to producers, butchers and *beoparis* about the quality of skins and current market prices. A tannery could be an example of the economic potential for value-added products compared to by-products. This could encourage the producers, through the intermediaries in the marketing chain, to produce more and better skins demanded by the tanneries.

Bottlenecks in Skin Marketing

Thirty-four percent of the sheep and 35% of goats slaughtered were less than 2 years of age, thus fetching low prices. Because of poor management, most of the skins of highland Balochistan were of low quality in terms of size, thickness, cuts and scars. To induce producers to deliver animals with better skins, it is necessary to show them that there are consistent price differences for different skin qualities. It is difficult to convey this if butchers and *beoparis* do not have complete information about the structure

of the market in which they operate, or on potential financial options. Lack of information constitutes a major hurdle to improving market efficiency.

Grading of skins is done regardless of weight or thickness, the latter often being related to the origin of the skins. This affects the perception of *beoparis*, butchers, and producers about the influence of quality factors on the price of skins. The current flow of information about the prices of skins is limited to the merchants actually buying and selling on a one-to-one basis. Public auctions could help to convey the existence of price seasonality and quality factors affecting skin prices. Public or private banks are not financing the operations of butchers and *beoparis*; this limits the operations of merchants who do not have reliable information about production, marketing and financial opportunities.

Extension efforts have ignored the contribution of skins to the economy of Balochistan, focusing only on meat and carpet wool (GOB, 1990). This has exacerbated the belief that skins are by-products rather than value-added products, of the meat industry. Furthermore, no extension resources have ever been allocated to the marketing practices of livestock, meat and value-added products. An unbalanced governmental extension effort focussing only on the biological aspects of production (Rodríguez, 1992) is short-sighted.

RECOMMENDATIONS

It is necessary to conduct studies on the social and economic aspects that determine the supply of skins to the leather industry. In spite of being the second largest industry in the country which generates foreign exchange, there are no studies on the economics of the skin market at the provincial or national level. These studies could benefit the leather industry by identifying areas of research that could improve the quality and quantity of skins and, in general, could ensure the sustainability of the leather industry. One example could be a joint research venture between the government and private sector; the government could provide technical advice on livestock economics, and the tanners could provide access to information on quantities and prices of purchased skins.

Through a market information system, price information could be regularly collected, analyzed and disseminated through radio and newspaper communications. Extension services could use their infrastructure and relationship with clients to develop awareness of quality factors that affect skin prices, price fluctuations related to seasonality, and the general situation of supply and demand of skins. It would be advantageous to use the experience of the Extension Department with radio programs (GOB, 1990) to launch a series with specific topics for target groups. Agricultural and livestock economists should be appointed in the Directorate of Livestock Extension. Government decision makers need to perceive the value of market information systems as an area with high pay-offs for the economic development of Balochistan.

REFERENCES

- Alvi, A.S. 1991. Meat production and technology in Pakistan. Pakistan Agricultural Research Council, Islamabad, 139 pp.
- Brokken, R.F. and T.O. Williams. 1990. Economic considerations for smallholder cattle milk and meat production and marketing: I. Economic policies, supporting institutions, marketing and demand. African Livestock Policy Analysis Network Paper No. 26, International Livestock Centre for Africa, Addis Ababa, Ethiopia, 26 pp.
- Chaudhri, A.M. 1971. Government participation in livestock marketing programmes: situation report on Pakistan. In: Mary M. Lawrence (Ed.). Central Treaty Organization (CENTO) workshops in marketing livestock and their products. Catholic Press, Beirut, Lebanon, pp. 50-63.
- Chaudhry, M.A. 1991. Strengthening linkages between research agribusiness. MART/AZR Research Report No. 72, ICARDA, Quetta, 41 pp.
- FAO (Food and Agriculture Organization of the United Nations). 1983. Report of the assistance to rangeland and livestock development survey in Balochistan. FAO Technical Cooperation Program, TCP/PAK/0107, FAO, Islamabad, pp. 18.
- GOB (Government of Balochistan). 1990. Annual progress report, July 1989 to June 1990. Directorate of Livestock Extension, Government of Balochistan, Quetta, 17 pp.
- GOB (Government of Balochistan). 1991. Development statistics of Balochistan. Bureau of Statistics, Planning and Development Department, Government of Balochistan, Quetta, Pakistan, 186 pp.
- GOP (Government of Pakistan). 1991a. Economic survey 1990-91. Finance Division, Government of Pakistan, Finance Division, Economic Advisor's Wing, Islamabad, 248 pp.
- GOP (Government of Pakistan). 1991b. Economic survey 1990-91: statistical supplement. Government of Pakistan, Finance Division, Economic Advisor's Wing, Islamabad, 250 pp.
- Mahmood, K. and Rodríguez. 1991. Marketing and processing of small ruminants in Highland Balochistan. MART/AZR Project Research Report No. 71 ICARDA, Quetta, 14 pp.

- Mahmood, A. and F. Walters. 1990. Pakistan agriculture. Directorate of Agricultural Policy and Chemonics International Consulting Division, Economic Analysis Network Project. Government of Pakistan and the United States Agency for International Development. 183 pp.
- Mitchell, M. 1985. Agriculture and policy: methodology for the analysis of developing country agriculture sectors. Ithaca Press, London, 165 pp.
- Naseem, M. 1992. A review of the progress of leather and allied trades. In: Pakistan Leather Show 92, Pakistan Tanners Association, Karachi, pp. 1-15.
- Ogiwara, C. 1984. A practical guide to light leather processing. Pakistan Council of Scientific and Industrial Research, Karachi, 558 pp.
- Rao, K.S. 1992. Economic importance of goats and sheep skins in industrial activity and to the export trade. Paper presented at the USAID Workshop on Small Ruminants: Production Systems for Sustainability, New Delhi, February 28-29, 13 pp.
- Rodríguez, A. 1992. Social and economic considerations of sheep and goat production and marketing in Baluchistan, Pakistan. MART/AZR Project Research Report No. 74, ICARDA, Quetta, 12 pp.
- Siddiqui, Shuja Uddin. 1992. Prospects of quantitative and qualitative improvement of hides and skins through and integrated approach to meat processing industry. Pakistan Leather Trade Journal, 19:51-62.

BUTCHER QUESTIONNAIRE

1. Location.....
2. Village/Town.....
3. Name.....
Date.....
4. Main occupation.....

Purchase of skins in villages/towns

Type of animal	Buys animals per day	Price received/skin
Sheep	5. _____	6. _____
Goat	7. _____	8. _____

Is there any price difference (Rs/skin) due to skins defects.

	Skin disease	cut
Sheep	9. _____	10. _____
Goats	11. _____	12. _____

Age of animals

(9 mon-1 yr) (1-2 yrs) (2-3 yrs) (>3 yrs)

Sheep	13. _____	14. _____	15. _____	16. _____
Goats	17. _____	18. _____	19. _____	20. _____

Disposal and Prices of Skins at Butchers' level.

Sheep

21. Sold to: _____
Beopari (Town/city) = 1 Market (Town/city) = 2
22. Number of skins sold _____
23. Price per skin (Rs) _____

Goats

24. Sold to: _____
Beopari (Town/city) = 1 Market (Town/city) = 2
25. Number of skins sold _____
26. Price per skin (Rs) _____

27. Reasons for selling to beopari/Market _____

1= Big lot (has big lot of skins) 2= Better prices 3=Contract

ANNEX 1 (Continued): MARKETING OF SKINS IN HIGHLAND BALOCHISTAN

Handling charges on skins

Operation	Cost/skin	Amount
Skinning	28. _____
Collection	29. _____
Transportation	30. _____

Market information

31. Do you obtain market information? 1=Yes 0=No
 32. If yes, source of information _____
 1= Personal contact 2= Neighbor 3= *Beopari*
 4= Comm. agent 5 Others

Means and cost of transportation

Mean	Distance to market (Km)	No. skins Transport.	Cost (Rs/100 skins)
Cart	33. _____	34. _____	35. _____
Bus	36. _____	37. _____	38. _____
Truck	39. _____	40. _____	41. _____

Financing

42. Did you borrow? _____ 1=Yes 0=No
 If Yes
 Source of credit Amount (Rs)
 Relatives/friends 43. _____
 Agents 44. _____
Beopari 45. _____
 Ag. Dev. Bank Pak. 46. _____

Supply of skins and prices

- (Rs/skin)
 47. Winter _____
 48. Summer _____
 49. Eid Season price _____

BEOPARI (Wholesaler) QUESTIONNAIRE

1. Name of the trader _____
 2. Location _____
 No. of skins handled per day
 3. Goats _____ 4. Sheep _____
 Avg. price paid per hundred skins (Rs/100 skins)
 5. Goats _____ 6. Sheep _____
 7. Do you operate on behalf of _____?
 1=commission agent 2=butcher 3=individual 4=self

ANNEX 1 (Continued): MARKETING OF SKINS IN HIGHLAND BALOCHISTAN

Cost incurred on skin trading

	Number	Cost (Rs/100 skins)
8. Collection	_____	_____
9. Transport	_____	_____
10. Storage	_____	_____
11. Octroi	_____	_____
12. Social cost	_____	_____

Disposal of skins

	Number
13. Sold to commission agent	_____

Types and costs of transportation

Means	Distance to market (Km)	No. skins Transported	Cost (Rs/100 skins)
Cart	14. _____	15. _____	16. _____
Bus	17. _____	18. _____	19. _____
Truck	20. _____	21. _____	22. _____

23. Do you grade the skins? _____ 1=Yes 0=No
 24. If Yes _____ 1=By weight 2=By size
 25. How many grades do you have?
 26. Sheep _____
 27. Goats _____
 28. Do you borrow? _____ 1=Yes 0=No
 29. If Yes, how frequent? _____
 1= every month 2=two times a month 3=three or four times a year 4=every year.

- Source of credit
- | | Amount |
|-------------------------------|-----------|
| Relatives/Friends | 30. _____ |
| Commission agent | 31. _____ |
| Agricultural Development Bank | 32. _____ |
33. Have you employed any persons? _____ 1=Yes 0=No
 If Yes
 34. What is their total number? _____
 35. What monthly wages do you pay (Rs/person)? _____