GOATERY

Goat is a multi functional animal and plays a significant role in the economy and nutrition of landless, small and marginal farmers. In pastoral and agricultural subsistence societies, goats are kept as a source of additional income and as an insurance against disaster. Goats are also used in ceremonial feasting and for the payment of social dues. In addition to this, goat has religious and ritualistic importance in many societies.

Live goats, goat meat, goat milk and milk products, goat skin, Blood, bile, intestines are various produce of goat that have demand in market. The goat products are in great demand because of their nutritional value. Blood is of 3.5 to 5.5 percent of the body weight. It is rich in iron, protein. Blood mixed with wheat bran is used as animal feed supplement. Mixing blood with less fibrous bran is more desirable for poultry feed. Butcher gets higher price for intestine used in the production of sports guts and musical strings. As meat is more lean (low cholesterol) and relatively good for people who prefer low energy diet especially in summer and sometimes goat meat (chevon) is preferred over mutton because of its “chewability”.

Goat milk is easy to digest than cow milk because of small fat globules and is naturally homogenized. Goat milk is said to play a role in improving appetite and digestive efficiency. Goat milk is non allergic as compared to cow milk and it has antifungal and anti bacterial properties and can be used for treating uro genital diseases of fungal origin.

India is the richest country in the world in livestock wealth, both in numbers and germ plasm. India has 124.35 million of Goats as per census 2003, making it the second largest goat rearing country in the world. The share of livestock in agricultural GDP is 23%, of which small ruminants contribute about 16% to the total value of livestock sector. At the national level, small ruminants (mainly sheep and goats) account for 14% of the meat output, 4% of the milk output and 15% of hides and skin production in the country.

There are nearly 102 breeds of goats in the world, of which 20 breeds are in India. Most of the breeds of goats in India have evolved naturally through adaptation to agroecological conditions; to a limited extent there has been artificial selection for specific needs. These breeds have generally been named after their place of origin or on the basis of prominent characteristics. Most of the breeds of goats are very well adapted to the harsh climate, long migration and lack of vegetation and drinking water. Barbari, Osmanabadi and Black Bengal are important breeds of goats reared by the commercial goat farmers among them Sirohi and Barbari breeds are very popular. Osmanabadi is exclusively reared in Maharashtra, but has recently started spreading to other states like Karnataka, Andhra Pradesh and Madhya Pradesh. The Sirohi is the most sought after breed, particularly in the semi-arid and arid parts of the country. Some commercial farms in Maharashtra, Madhya Pradesh, Rajasthan and Tamil Nadu also rear South African Boer-cross goats. They are cross between Boer and Osmanabadi or Sirohi breeds or nondescript goats. This cross breed gains a body weight of 24-30 kg at the age of 6 months, which is higher than that of the pure breeds. Crossing is also necessary as colour and meat of local breeds are preferred by the domestic consumers.

Goat rearing needs less capital as the animals can be raised in small farms. The initial investment needed for Goat rearing is low due to small body size and docile nature, housing requirements and management problems with goats are less. The floor space requirement per adult animal is about one square meter. Normally goats are friendly animals and enjoy being with people. Stall-fed goat farming is an ideal occupation for marginal and landless agricultural laborers.

In drought prone areas risk of goat farming is very much less as compared to other livestock species. Goats are ideal for mixed species grazing. Goats can efficiently survive on available shrubs and trees in adverse harsh environment in low fertility lands where no other crop can be grown. The animal can thrive well on wide variety of thorny bushes, weeds, crop residues, agricultural byproducts unsuitable for human consumption. Under proper management, goats can improve and maintain grazing land and reduce bush encroachment (biological control) without causing harm to the environment.

Trading live goats: Live Goats are the major output of the commercial goat farms. The goats are purchased by the meat sellers and by goat rearing farmers for breeding. Always pregnant goats, which give birth to kids in 40 to 60 days, are in high demand. The live goats are not sold on the basis of their body weight but on the basis of purity of the breed in the livestock markets. Unlike large animals in commercial farm conditions both male and female goats have equal value. Some commercial farmers also rear male kids purchased from the market for fattening and selling during the festival of Eid. Such selling fetches much higher price compared to the kids sold for meat purpose. The best animals (particularly males) from the traditional flocks are mostly sold for slaughtering to traders/butchers. The trade of live goats is mostly unorganized and is in the hands of a large number of middlemen, traders and butchers, does not favour goat farmers.
Goats are prolific breeders and achieve sexual maturity at the age of 10-12 months. Gestation period in goats is short, she-goat will deliver 2-4 kids at each parturition after a short gestation period of 150 days. Twinning is very common and triplets and quadruplets are rare. There are mainly two mating seasons, February-April and October-November. However, some goats on few farms kidded in other months also. The kid mortality is estimated to range from 5.64 per cent. It is found that mortality rate is lower in Sirohi and Osmanabadi than Barbari and Black Bengal. Even otherwise mortality rate can be reduced by providing better feed, preventive healthcare and better management.

Expenditure on feed and fodder are the major components of the cost of goat rearing on commercial farms and it accounted for 59 per cent of the total variable cost. The concentrate feed and dry fodder accounted for 58 per cent and 25 per cent of the total feed cost, respectively. Suggested green fodders are, CO3, CO4, Lucern, Barseem, Stylo, Dashrath, Hybrid Napier, African Tall, Sorgum, Molato, Gini Grass, Subabul and Dry Fodder of Barley, Maize, Ground Nut etc. Therefore, it is prudent on the part of farmers to economize on the feed cost to enhance profitability. The commercial goat farmers had to make some expenditure on electricity, insurance, prophylaxis and treatment of animals.

**Issues in the goat rearing:** Poor access to good quality breeding animals and veterinary services are main constraints in goat rearing. Availability of institutional credit to small entrepreneurs, with projects of 50-100 goats has limited capital for collateral security.

Mortality rate among kid goats in higher. The overall mortality in kids in different categories ranged from 5.64 per cent to 12.28 per cent and in adults, it was 4.89 per cent.

The major diseases that affected goats on commercial farms were: PPR, enterotoxaemia (ET), pox, FMD, diarrhoea and pneumonia. The other health ailments were abortion, tympani, gidd, external parasites, etc. The use of vaccines such as PPR, HS and FMD and medication for internal as well external parasites need to be used as recommended for effective prevention of diseases and improved productivity. On many occasions, farmers have not been able to use vaccines due to their non-availability. Non-availability of veterinary doctor and limited, the absence of organized efforts for breed improvement of goats, not availability of low cost complete feed are the constraints for the traditional farmer in goat farming.

Goat milk and milk products: Goat is termed as walking refrigerator for the storage of milk and can be milked number of times in a day. Many milk products like cheese, paneer and khoa are made from the goat's milk. At the age of 16-17 months goat starts giving milk, a properly fed and managed milky goat will yield at least as much milk (on average two liters per day) as low yielding desi cows. Among the Indian breeds, Jamnapari is a good milk yielder and gives about 200 to 250 litres per year.

Cheese: Goat milk is the proprietary item for a few varieties of soft, hard and semi-hard cheese which are being marketed as Premium Cheese in many European countries. Greece and France have the largest goat milk cheese production. Cheese prepared exclusively from goat milk is hardly available. However, technology has been developed for cheddar type cheese using admixture of buffalo and goat milk (80:20 or 90:10).

Paneer: The method of manufacturing paneer from goat milk has been extensively studied and standardized at Central Institute for Research on Goats, Makhdooom Freshly prepared paneer had no goaty odour and salty taste. The body of the paneer is semi-hard with smooth texture and no air pockets. Various indigenous dairy products viz., khoa, a heat desiccated base material used for preparation of a variety of sweetmeats is made from goat's milk.

An important characteristic of goat milk is the unique ‘goaty’ flavour which is attributed to difference in the fat fraction of goat milk and to the relatively higher proportion of short and medium chain fatty acids in the country. No such data is available exclusively for goat milk. There is difficulty in fat separation are some of the few technological problems related to goat milk processing into value added products.

**Market:** India has some of the great milch breeds like Jamunapari, Beetal, Surti, etc. Barbari is the highest producer of goat milk in the world. In spite of good efforts in dairy development, the organized sector processes only about 15% of total milk produced. In Indian consuming market, there is very little demand for goat milk accounting for only 3.5% of the total demand for milk. Contribution of Goat Milk in total milk production is approximately 4 per cent.

**Issues:** milk productivity of goats under the prevailing traditional production system is very low. It is because they are maintained under the extensive system on natural vegetation on degraded common grazing lands and tree lopping. Even these degraded grazing resources are shrinking continuously. Moreover, adoption of improved production technologies/ management practices in the farmers’ flock is very low.
Goat Meat: However, goat meat is quite popular constituting about 35% of total meat market. 63% of the red meat that is consumed daily worldwide is actually goat meat. Rearing of goats under intensive and semi-intensive system using improved technologies for commercial production has become imperative not only for realizing their full potential but also to meet the increasing demand of chevon, cabrito or capretto (goat meat), in the domestic as well as international markets. There are nearly 102 breeds of goats in the world, of which 20 breeds are in India. Goats’ rearing for meat production is the main objective.

Based on empirical evidences, it has been suggested that the medium and large sizes of goats reared under intensive system for commercial production should attain more than 25-kg body weight at the age of 6-7 months for achieving their full economic potential. Therefore, the farmers need to make efforts to further improve the weight gain of their animals through better management and technological interventions. Technological and management options are the only alternatives to accelerate growth in the productivity of goats, which is low in the traditional system of production.

One of the main traits of the local sector is that butchering is conducted on-farm, and direct sale is the more common marketing practices. Goats are slaughtered twice daily. Since the entry or exit barriers are not there to become a kuchia, people of any caste and level are in to this, (unlike that of butchers where only people from Qureshi or Khatik community are into it). The butchers are the system nodes in the Goat meat subsector, i.e. entire trade passes through the butchers as they are the one who transforms live goats to dressed meat. Also, they are the only retailers. They are able to dictate their terms in negotiating the price and modality of payments (credit purchase).

**Issues:** A Transportation regulation does not support the commercial requirements of the traders, goat keepers and butchers. Simplification in regulation and making it more viable is required.

**Market:** Australia is a major world supplier of quality goat meat to the United States and many other countries like Middle Eastern, Asian, African, Latin American and Caribbean people. The world production of Goat meat was 5.14 million tons in 2007. India ranked second in goat meat production.

**Goat skin:** There are two types of goat skin, Tanned and non-tanned. Tanned skin is used for parchment for drumheads or sounding boards of some musical instruments. Tanned leather is used to make rugs and carpet binding, gloves, boots. Black Bengal breed of goat provides high quality skin. 60 to 70 percent of goat skin is used for the upper leather of shoes. Leather from Bore goats is thicker and stronger than other goat types. At each point in the chain, the skin gains additional value depending upon the inputs, storage period and margin of profit to the seller. Skin is purchased by skin traders locally. The skin is sold raw and the skin traders treat it with salt. The trend is towards decline, 10 years back the rate of the skin was Rs. 125-130 per skin. Now it has come down to Rs. 50 per skin. This is because perhaps the export of leather goods has decreased. The price mark up of goat skins varies from market to market.

Asia is the major producer of goat skin in the world as it produces 70% of world production. In China, Pakistan and India the demand for raw skins from their domestic markets out strips production and thus these countries are forced to import raw skins for processing. There are seven important terminal markets for goat skin in India. The annual turnover ranges from 0.5 million to 1.0 million skins. In addition there are general markets operating below 0.5 million pieces /year throughout the country at regional and sub regional levels.

Realising the importance of goat in the agrarian economy of the country, various developmental activities have been taken up by Govt. of India. The Central Government has established Central Institute for Research on Goats at Makhdoom, Farah, Mathura District, Uttar Pradesh. During VIII Plan Period Seven Intensive goat breeding farms were proposed with the objectives to produce 1000 stud bucks per year for the distribution among goat rearers, to improve yield of milk and chevon through selective breeding.

The growing demand of meat and meat products in the country and the share of the small ruminants (mainly sheep and goat) within, hold’s good potential to develop small ruminant sector in the rural areas with the objective of increased returns to the rearing communities. Goat rearing creates employment to the rural poor besides effectively utilising unpaid family labour. There is ample scope for establishing cottage industries based on goat meat and milk products and value addition to skin and fibre.

*Information till Nov-2010*