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Constraints and opportunities of goat production in Ethiopia: A Review

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Abstract: These review asses that the constraints and opportunities of goat production in Ethiopia with the aim of delivering summarized and synthesized information for the customer and producer. In developing countries, huge goat resources are present and the demand for meat products is strongly increasing. The significant recent development in the goat value chain is a very high export demand for goat meat from Ethiopia. About 80% of meat exported to the Middle East is goat meat. About 12% of the goat meat that enters the value chain from lowlands (7,924 TECs) is exported to these countries per annum .The hides and skins value chain is composed of a network of collectors, small and big regional traders, and tanners. About 105,714 tonnes of hides and skins are collected. Goat manure is widely used as a soil fertilizer for crop production. Sheep and goats are largely produced in mixed crop–livestock, specialized pastoral and agro pastoral systems. Goat productions are highly hindered by feed shortage, disease and climate change, market fluctuation, mortality, transport, severe water shortage and high. There are opportunities to increase goat production like require short generation interval, high market demand smaller space and capital, large unmanaged land, their high turnover rate, easy to be managed by children and women, and job opportunity. Depending on this review biggest increase in production and profits will occur when multiple interventions are combined. It is important to use modern production systems with improved technology in urban and per-urban area, and in rural area improve traditional system through Provide training to farmers, development agent, traders cooperatives and transport office. In addition to this Government should provide the investment for pasture improvement, introducing and promoting improved forage, Support livestock sector with special credit service.

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Introduction

Small ruminants such as goats are an important source of income for smallholder farmers in South Asia and Sub Saharan Africa: they may be kept as a stepping stone to owning larger and higher-value animals such as cattle or bu□alo, or provide a more-profitable and less-risky alternative in marginal or densely populated areas where access to feed resources are limited. However, smallholder goat production in these areas is often low due to low growth and reproduction rates and high animal mortality [1].

Analysis of data from the Ethiopian Revenue and Customs Authority shows that Middle East countries (12 countries) are the major market outlet for meat and live animals exported from Ethiopia. Among these countries, the lion's share of meat volume was exported to KSA and UAE. Other destination markets for Ethiopian meat are Egypt, Yemen, Kuwait, Oman, Bahrain, Congo Republic and Congo Democratic, Turkey, Vietnam, Angola, Comoros Islands and India [2].

The significant recent development in the goat value chain is a very high export demand for goat meat from Ethiopia. About 80% of meat exported to the Middle East is goat meat. About 12% of the goat meat that enters the value chain from lowlands (7,924 TECs) is exported to these countries per annum. Two of the six sub-chains supply live goats to the export market (one formal and one informal). Only 0.3% (193 TECs) of the goat meat entering the value chain is formally exported and 9.1% (5,992 TECs) of the total goat meat is exported through informal sub-chain. This indicates the amount of foreign exchange earnings the country is losing due to the informal livestock trade. This could be captured in the formal sub-chain through government facilitation of marketing for the pastoral community living close to borders [3].

The value chain assessment showed there are about 64,430 TECs of goat meat entering these value

chains per annum. This is supplied through four sub-chains. Two of these supply live goats to individual consumers for slaughter at home (backyard slaughter). About 47,997 TECs of goat meat is consumed by individual consumers in this sub-chain out of which 43,810 TECs are supplied from the mixed systems. The remaining balance is supplied by the grassland systems [3].

Hides of cattle, and skins of sheep and goats, but is detailed only from producers to farmers and consumers (in this case the domestic leather producers). The value chain from farmers to consumers, domestic or export is not detailed due to lack of data. It is estimated that 80% of cattle and 90% of shoats are slaughtered in backyards. Thus, the bulk of hides and skins in the value chain are collected from backyard slaughter and a strong network of value chain actors is required to recover all the hides and skins produced in each and every corner of the country. The hides and skins value chain is composed of a network of collectors, small and big regional traders, and tanners. About 105,714 tonnes of hides and skins are collected annually in this value chain [4].

The price analysis of the hides and skins sub-chains shows that producers are paid the same prices per kg, whether the hides and skins go to modern or traditional tanneries. The average sheep skin price paid to producers (ETB 20 per kg) is two higher than the average goat skin prices (ETB 10 per kg), and almost seven times higher than other hide prices per kg (ETB 3 per kg). Prices to consumers are basically the same, as well, whether they buy from modern or traditional tanners. Most of the gross margins are captured by the tanneries since they add the most value by processing the hides and skins [3]. Traditional tanners get 100% of the gross margin since they buy directly from producers, and modern tanners get from 33–75% since. They get more from collectors and traders in the chain. In any case, processing hides and skins is a lucrative business in Ethiopia and there appears to be significant opportunities for investment in more tanneries given the growing numbers of animals and the opportunity to do a better job in collection of hides and skins [5].

In general according to my view and different literatures Goats are widely distributed in diverse habitats and adapt well, they can thrive in variable temperatures during food and water shortages. They breed all year round in tropical zones, have a short gestation of period and often produce twins. Goats are also a useful source of financial security for communities as they can be easily and quickly sold for cash to meet other family needs. But in Ethiopia still the production of goat is not develop as compared to other livestock production .Therefore, this seminar was undertaken to assess the Constraints and opportunities of goat production in Ethiopia.

Literature review

Goat Production System in Ethiopia

Livestock production system in Ethiopia

The sector analysis using LSIPT is organized along livestock production systems and value chains. A livestock production system is defined as a group of farm operations with approximately the same characteristics of climatic conditions and farming practices (i.e. the combination of land/herd, labor and capital). The classification by production systems is critical, because interventions (i.e. improvements in animal health, feeding) are strongly livestock system specific. For example, the required type and scope of a policy support or technology differ significantly between a commercial market-oriented, intensive stall-fed dairy system and a mobile pastoral dairy grazing system [3].

Mode of livestock production in Ethiopia is broadly classified into pastoral, agropastoral and mixed crop–livestock, peri-urban and urban production systems. In pastoral systems, extensive livestock production is mostly the sole source of livelihood with little or no cropping. In the submoist/moist lowlands, agro pastoralism is the main mode of production. The less dominant and underdeveloped systems include urban/peri-urban dairying and sheep/goat fattening and large-scale commercial livestock production [4].

The livestock production systems in Ethiopia have evolved largely as a result of the influence of the natural production environments and socio-economic circumstances of farmers/pastoralists rather than market forces. Sheep and goat in Ethiopia and most developing regions are kept under traditional extensive systems. Goat production systems namely extensive (55.4%) and semi-intensive (44.6%) were commonly practiced. Although, the extensive production system was the most dominant in small ruminant production systems under smallholder farmers, there were a significant number of farmers practicing semi-intensive system in the study area [6].

Sheep and goats are largely produced in mixed crop–livestock, specialized pastoral and agropastoral systems. Livestock production is of subsistence nature. Market-oriented or commercial production is almost non-existent. Smallholder livestock production predominates in the highland mixed crop–livestock systems because of land and capital limitations. As shown in Figure 1, large flocks are maintained in the extensive lowland (agro) pastoral systems (Mieso and Metema PLWs), while small flocks and tethering is practiced in densely populated areas (Alaba PLW; Figure 2) [4].

Figure 1 Ownership of large flocks of sheep and goats in extensive management system of Metema (left) and Mieso (right) in North Ethiopia Source [4].

Figure 2 Tethering systems of goats in Alaba (south Ethiopia) [4].

Reproduction system

Breeding females constituted the largest average flock composition followed by weaners and kids. Goat owners relied mainly on births and purchases to build their flock while sales and deaths were the major routes of disposal [5]. Kids are kept separate during the day in corrals. Lactating does may wear udder bags or kids may have a thorn through their nose to Kids are kept at home for the first 24 weeks until they are strong enough to go out grazing [7]. Age at First Parturition (AFP) for goats, estimated average puberty age is (7.04 ± 0.10 months for male and 7.40 ± 0.10 months for female), first Kidding age is (13.04 ± 0.16 months) and lambing interval (8.5 ± 0.12 months) were significantly Higher ($P<0.05$) in the HL than in ML prevent suckling during the day. Fires may be lit to keep goats warm during the wet season [7].

On average, female gave first birth at the age of 1.4 years, kidded every 8.6 months and stayed on production/kidding for about 5 years, giving daily milk yield of 0.37 liter [5]. In Afar the average number of kids born per breeding female is 2.9. Of all births reported 98.6% were single births and 1.4% was twins

[7]. The observed variation in production levels could be partly due to inherent genetic and due to environmental differences [5]. Unlike sheep, the average addition of goat flock through birth was considerably higher in LL than in HL and ML. In addition to this estimated age at sexual maturity for goats was significantly lower in LL than in HL and ML [8]. The lowland nature of the environment and abundance of browse plants could favor better performance of goats in LL than in HL and ML agro-ecological zones .Significantly higher numbers of goats were removed through sale and death in LL than in HL and ML [8].

Breeding system

There are indigenous goat breeds in the country. Naming livestock types can be a contentious issue. In Africa breeds are often named after the main ethnic group keeping them, e.g. the Boran cattle breed, the Boer goat etc. However, some breeds can also be named after the region in which they are found, which is sometimes synonymous with ethnicity. Types can also be referred to in a more neutral manner by naming them after an important identifying characteristic. E.g. West Africa Dwarf goat, the Long-eared Somali goat Arsi bale goat. Figure 3 describes breed type goat in Ethiopia. According to [2] breeding stock is one of the prerequisites to start goat production. The primary actors in Abergelle goat production are smallholder farmers. Their initial breeding stock may come from purchases, gifts, inheritance, share goat rearing, and other similar means. Fanners use replacement stock from their own herd, and buy from market. In some cases, Non-Governmental Organizations (NGOs) are also involved in supplying breeding stocks .Farmers usually buy young female goats for breeding purposes [2]. On the other and according to [9] criteria for breeding does and bucks are for Western lowland goat owners, the most important selection criteria for breeding does were multiple births, body conformation, mothering ability and kid growth with index values of 0.34, 0.16, 0.15 and 0.11, respectively. Coat colour, fertility traits (kidding interval and age at 1st kidding) were also mentioned as selection criteria but with lower ranking [9].

The aim of introducing exotic goat breeds was to improve milk production of the local goat breeds. Anglo-Nubian and Toggenberg are exotic goat breeds that were introduced by Farm-Africa and higher learning institutions. Very recently, Boer goat semen has been imported from the United States of America for crossbreeding studies at the two Universities to improve meat production of local goats [10]. The high proportion of females maintained in the flock reflects the owners' desire for milk. Very few breeding males are maintained in the flock leading to an adult male to female ratio of 1:34 [7]. Natural mating is the most widely used in their breeding practice almost (100%) in HL (High land), ML (Mid land), and LL (Low land) [11]. Mating is allowed to take place all year round. [7]. Goat producer do not want to share his bucks to other goat producers in the same village or in his/her neighborhood [12]. Even though majority of the producers practiced breeding stock selection and possessed their own breeding buck, the traditional (communal) production systems in the study areas lead to uncontrolled mating making it difficult to control flock reproduction [11]. Thus, crossbreeds between Anglo-Nubian and Hararghe Highland and Anglo-Nubian and Somali are being used for milk production by smallholders in central, eastern, southeastern, and southern parts of the country [10].

Feeding system

The major feed resources for sheep and goats include grazing on communal natural pasture, private pastures, crop stubble, fallow grazing, road side grazing, crop residues, browses, grains, improved forages, and non-conventional feeds including household food leftovers, weeds from crop fields, tillers from dense crop fields, fillers (crops intentionally planted on part of crop lands or around homestead to be used as feed) and traditional brewers grains (locally known as atella; [4]. A large proportion of the interviewed flock owners in LL indicated the utilization of browsing plants (Acacia species, shrubs and Acacia species pods) for sheep and goats than from HL and ML. This is probably due to the abundance of browse in the LL. Farmers in the LL use Acacia pod in two ways, dry and green [8]. Goat production in the area is based on browses in the bushes and forests [12].

Availability of different feed types varies based on the season of the year. From the feed type that are available in all season, natural pasture accounts the largest proportion (37.1 %). In line with this The other feed types such as grazing after math, private gazing land, local brewery by products (atella), food leftover, and crop tillers are season dependant feed type [13]. Grazing and browsing on natural pasture and leguminous tree species are commonly used in their feeding system [14]. Natural pasture (shrubs and bushes) was the primary source of goat feed across the study areas during the dry and wet seasons of the year [11]. Free grazing during the day, returning home at night; this is because there is no practice of providing supplementary feed to goats [12]. Although the practice of supplementing sheep and goats with concentrates is not common, certain agro-pastoralist supplement their sheep and goats with some feed supplements [8].

About 55% of Bati area goat owners also reported supplementations based on availability of kitchen and milling residues, homemade grain, residues

of local grain grinding houses and oilseed cake [11]. For majority of fruits leaves (banana, mango) (16.1%) are abundant feed resources for goats from February to June and grazing aftermath (8.1%), local brewery byproducts atella (11.3%), food leftover (14.5%) and maize grain (8.1%) are more abundant from October to January [13]. Farmers who had wells and irrigation cultivated and used improved forages (mainly Sesbania sesban, Leucaena leucocephala and Pennisetum purpureum) [8]. The major strategies for control of the feed shortage include collecting and providing of green leaves and pod from perennial plants, crop residues, collected and standing hay in Bati area, and migration of adult and healthy animals in Borana and Siti. In some areas, majority of the goat owners use mineral supplement (table salt) during wet season only when there is sufficient feed [11].

Goat marketing system

According to [5] report most of the criteria used to set price of goats at the market was similar. Price was offered and negotiated merely on the basis of size (25%), age (20%), sex (17%), body condition (16%), and coat color (14%). Brown and white colored goats gained higher prices in LLCL and P/AP systems, respectively. But according to [2] Goat supply increases during August, September, November and January related to improvement of body condition of goats and increase in demand correlated to holydays like New Year and Christ Mass). Goats were sold mainly at the farm gate when money is needed to buy grains and other farm inputs. Consumers, producers, traders, butchers and brokers were the major buyers of live goats [5]. Processing involves preparing of goat meat either for domestic consumption or for export consumption. Butcheries, hotels and restaurants are involved in processing goat meat for domestic consumers [2]. Generally, buyers paid higher price for male goats particularly for fattened male goats in all areas. The highest price was given for highland goats fattened for meat purpose [5].

Production and Productivity of Goat

Goat meat

A Common operation in traditional fattening system was castration, which improves body condition [The main reason given for castration was to receive a better price at sale [7]. They are easier for management and have better carcass yield than the horned ones [15]. A small number of males are castrated at two years and above. . In addition, male o□spring weighed only 9 kg when sold at 6 months [1]. Average age at sale/slaughter of male goats was about 1.4 years [5].

Processing involves preparing of goat meat either for domestic consumption or for export consumption. Butcheries, hotels and restaurants are involved in Processing goat meat for domestic consumers .These actors slaughter and Prepare meat for consumption as raw meat, war], kikil and tibs [15]. In afar meat may be consumed fresh or air-dried (teru). Fresh meat may be cooked with rice or roasted and eaten on its own (alayseni). Kids, less than 1 month old, may be sold as a delicacy known as bekel (male) and bekelo (female). Fresh blood is consumed to treat malaria and bullet wounds [7]. Goat meat is widely eaten, mostly during social and festive occasions. This goat type is more prolific than other goat types in the region and is potentially a desirable meat producer in the highlands. Meat is eaten raw, fried or boiled as a soup (kikil). The intestines are cooked as dulet, or cooked with blood as wadi diga [7]. Some farmers also buy slaughter goats for their household consumption if they do not have one in their herd [2]. Abattoirs are involved in slaughtering, removing the skin, chilling, wrapping the carcass in the cotton linen and exporting the chilled carcass by maintaining its cold chain [2].

Goat skins

According to FARM Africa research results the product of goat skin used in different way. In Tigray the skin (korbet) is softened by rubbing with animal fat, rapeseed oil or other oils. After processing the skin may be used as an apron (shirara); a grain, water, butter or honey container (lekota); sling (wanchef); a small mat or shoulder cape (agoza); pages of religious books (brana); sandals (sa'ani); edges of baskets (makumbeti) and belts (kulfi). Goat skins are widely traded; On the other hand the skins of the hairy Arsi-Bale goats are highly valued as saddle covers. The white haired skins are particularly prized and, if well-decorated, can fetch Birr 50-80. People living at very high altitudes around Dinsho and Batu value hairy skins as a warm garment (gishe kora) often worn when herding goats. Skins of Nubian goats are used as water containers, and some are. In Afar Skins are used for beds and made into prayer mats (akess). Skins are extensively used as water containers (sar) and as butter churns (koda) [7].

Goat milk

The daily milk yield produced was estimated to be between 350 and 380 milliliters, average of 370 milliliters [5]. Daily milk off takes of 250 to 500 ml was recorded in the agricultural highlands of Sidamo for 10 lactating does on their third or above parity [7]. The small amount of goat milk utilization by family members could be a reflection of the low milk yield/doe/day in Woyina-Dega (0.29) and Kolla (0.31) [17]. Milk from goats is also small (low quantities) in pastoralist [6]. In all the villages goat milk was also produced but in small volumes. It was appreciated for its nutritional value and was often consumed by

children directly from the udder or by mixing it with boiling tea [6].

The demand for goat milk is so high that even the smallest amount of milk available is diluted with some water to make sure that as many children as possible drink some. Does with desirable dairy type body conformation are common, especially in the highlands. The goats are milked usually once a day for two to four months throughout the year. Butter is occasionally extracted for medicinal purposes [7]. Households consume either whole goat milk or milk products. They usually process it into butter; Skimmed milk (Awsa), whey (agaat) and cheese (ayib). Except butter, which households sell to generate cash income for the household, the other milk products are important part of their diet [2].

There are cultural taboos in the consumption of goat milk in certain societies. About 88% of goat keeping households in Woyina-Dega and 74.1% in kolla provide goat milk primarily for children. The households provide goat milk for their family for several reasons such as part of the normal diet/meal; its reputed medicinal value; it strengthens their children; cures fast bone fractures; and provides resistance to illnesses when consumed by sick individuals. In addition, it is also provided for pregnant and nursing mothers, and elderly persons [17]. In some areas, goat milk is preferred to cow's and ewe's milk to feed to children, as ingredient in certain hot drinks and believed to have some medicinal value. But goat milk is more common than sheep milk, within the household member children are the most frequent consumers (44.4%) of the goat and sheep milk [8]. Afar goats are extensively milked (hadore hana) for food, medicine and sale. Udder size is relatively small with a circumference of 21 cm and length of 17 cm.

Occasionally the milk is made into butter for home use and sale. Sour milk, mixed with fenugreek and garlic, is used to treat measles. Skimmed milk may be mixed with sorghum and maize porridge. Melted goat milk butter is used to treat sick eyes and ears and as a treatment for headaches. It is also used to massage damaged limbs [7]. All Abergelle goat owners reported milking their goats, and milk is made into butter for home consumption and sale. Milk is thought to have medicinal qualities and is used to treat the sick. Goats are extensively milked in Tigray. Goat milk (tseba) butter (t'esmi) is made and used for cooking and as a cosmetic (likai); it commands a high price. Milk is also made into yoghurt (rugeo) and cottage cheese (ajebo) [7].

According to [7] households consume either whole goat milk or milk products. They usually process it into butter, Skimmed milk (Awsa), whey (agaat) and cheese (ayib). Except butter, which households sell to generate cash income for the household, the other milk products are important part of their diet. Special priority gives to nourishing children and if available, other family members will eat. During summer/rainy season (July, August, and September) where farm households mostly face serious food deficit, milk and milk products play an important role in terms of filling the food deficit gap. According to the farmers, goat milk is considered as a good medicine as goats browse different types of grass and leafs. However, due to cultural reason women's are not allowed to drink whole milk [6].

The status/habit of goat milk consumption and the factors affecting goat milk consumption of the people, With regard to goat milk consumption status, majority (about 96%) of the producer did not consume milk attributed to different factors including culture (about 85%), lack of awareness of the importance of goat milk (9%) and low amount of milk produced by goats (about 7%) With the overall Goat production purposes were also identified as mainly to provide milk and meat for home consumption and cash income generation [17]. On the other hand, there was a complaint of bad odor of goat milk by some respondents. Milk from goats has odour similar to the goats themselves [13].

Manure

Using organic fertilizer for crop land has great advantages in which the fertility of the soil can be increased by increasing the available minerals. Hence, agro pastorals should be used sheep and goats manure for crop land in order to improve the crop production, there by crop by products will be improved and used as feed for sheep and goats. The results suggest that, their need to be better extension works to utilize sheep and goat manure in the form of organic fertilizer as wheal as in the form of fuel [18].

Production Constraints of Goats

Climate

Climate change was affecting and challenging the life of farmers. The pasture production potential was declining because of climate change [17]. The major challenges of goat rearing include feed and water shortage, disease incidence and recurrent drought with different order of prioritization [11].

Feed shortage

Poor quality grazing limits milk production. Shrinkage and decline yield of grazing lands driven by increase livestock population and drought was reported to be the leading reasons for feed shortage across all the study sites. Increases of human population and Decline carrying capacity of grazing land are also mentioned to cause feed shortage [8]. According to [12] report the farmers did not provide supplementary

feeds such as pods collecting from browse trees, household products such as atela (residue of local beer), concentrates and silage. It is in line with the result of [2] who reported goat production in the area is based on browses in the bushes and forests.The farmers do not practice providing Supplementary feeds such as concentrates and silage to goats throughout the year. Besides this [7] reported that the most frequently reported constraints in the highlands are shortage of grazing, problems due to the mobility of goats in densely populated villages and disease. In the long dry seasons and spring, trees and bushes shade their leaves, which make goats to starve and reduce their body size, become infertile and could cause death of animals [2].

Diseases and predator

Constraints hindering goat's production and productivity diseases reported were anthrax, liver fluke, orf (disease like Footand-mouth disease), pneumonia and internal parasites [16]. It is in line with the result of [7] which reported the major goat diseases reported are anthrax, liver fluke and other internal parasites, orf and pneumonia. In the pastiorial area the main diseases reported were mange, mastitis, pasteurellosis and some tick-borne diseases On the other hand according to [14] internal and external parasites are the first and second ranking diseases and parasites which affect the small ruminants. Microbial caused diseases are PPR, goat pox, Orf, Actinomycosis and Pasteurellosis. And [12] reported the parasitic diseases are Menge, Lice, Coenurosis and Moniezia expansa [7].

Water shortage

In low land areas, relatively higher proportion of households reported the problem of rainfall shortage as a limitation for low fodder production. This may be due to low and erratic nature of rainfall in lowlands than in relatively wetter highlands [8]. The availability of water was not consistent particularly in the dry season [11]. Concerning the quality of goat milk, the majority (about 64% in Woyina-Dega and 56% in Kolla) of the respondents reported that market milk is not usually of good quality mainly due to the use of unclean milk utensils (such as clay pot with no lid). As summarized, water shortage is critical in, which in turn could be accountable for the poor hygienic quality of goat milk [17]. Farmers in study area have limited practice of feed conservation [8].

Market access and information

The participation of goat producers in the market was constrained by seasonality of market, low price and lack of market information and infrastructure [5]. Farmers do not have any permanent customer to whom they supply goats when they go to markets to sell animals [2]. Most of the goat producers often sold their goat at farm gate and local primary markets held weekly. Selling was done mainly at the time of cultural and religious festivals and during dry season when money is needed in order to buy grains and other farm and household inputs [5]. The involvement of export abattoirs in HLCL and P/AP production systems was lower than it was in LLCL system. This could be due to high price competition and small flock size in the highlands and poor infrastructure development in pastoral and agro-pastoral areas [5].

Health constraint

Goat production was constrained by poor reproduction and high mortality rates, which led to low numbers of livestock available for sale or home consumption [1]. The incidence of disease, internal and external parasites caused body loss and death of goats there by produce economic loss to the farmers [2]. Early kid mortality is considered a serious problem [7]. The high death in LL could be linked to lack of access to veterinary service compared to the HL and ML. This is because, in the Ethiopian context, the level of infrastructure is different between AEZs; the LL being the one characterized as relatively remote and inaccessible [8]. In the long dry seasons and spring, trees and bushes shade their leaves, which make goats to starve and reduce their body size, become infertile and could cause death of animals [12].

Transport

The animal health workers do not have transport services such as car, motor bicycle and mule used to travel from the health post to kebeles and villages to provide veterinary service [2]. In order to deliver goats purchased from producers to consumers in differen t areas; traders use two modes of transportation viz, trucking and trekking. Larger traders who collect in bulk use ISUZU trucks for transportation.The mortality rate is on average two goats per one ISUZU truck load. One truck load is 70-100 goats [2].

Opportunities to Goat Production

The major opportunity of small ruminant production is that they require short generation interval, high market demand smaller space and capital investment with index of 0.26, 0.24 and 0.23 respectively [14]. High demand of the small ruminants in the local market as a result of population increase, urbanization, and the increment in price of goats (even within a district) can be considered as an opportunity for the small ruminant producers [13]. Analysis of data from the Ethiopian Revenue and Customs Authority shows that Middle East countries (12 countries) are the major market outlet for meat and live animals exported from Ethiopia [2]. In any case, processing hides and

skins is a lucrative business in Ethiopia and there appears to be significant opportunities for investment in more tanneries given the growing numbers of animals and the opportunity to do a better job in collection of hides and skins [3]. Therefore, the existence of large unmanaged land, their high turnover rate, easy to be managed by children and women can be taken as a great opportunity of goat production in the area if the extension system supports forage development (specifically feed conservation during excess time) and, the land is managed properly [13].

Conclusion and recommendations

In Ethiopia, almost all goats are produced in mixed crop-livestock and pastoral and agro-pastoral systems. They are managed under extensive traditional systems and produced the lowest compared to other sub-Saharan African countries. Goat inhabits a wide range of environments, extending from tropical to cool temperate climates. The small body size, broad feeding habits, adaptation to unfavorable environmental conditions and their short reproductive cycle provide goats with comparative advantage over other species to suit the circumstances of especially resource poor livestock keepers. Goat productions are highly hidered Goat productions are highly hindered by feed shortage, disease and climate change, market fluctuation, mortality, transport, severe water shortage and high. There are opportunities to increase goat production like require short generation interval, high market demand smaller space and capital, large unmanaged land, their high turnover rate, easy to be managed by children and women.

Depending on the study I recommend the following things to improve goat production and productivity in Ethiopia. It is important to

- ✓ Use modern production system with improved technology in urban and per-urban area
- ✓ Improve traditional system through Provide training to for development and cooperative
- ✓ Producer should use feed storage a system for dry seasons and cultivate forages through irrigation.
- ✓ Government should provide the investment for pasture improvement, introducing and promoting improved forage.

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