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Production Performance, Challenges and Opportunity of Goat Production in Ethiopia

Matawork Milkias Gobena
Jimma University College of Agriculture and Veterinary Medicine, Department of Animal Production

Abstract
This study reviews the production performance, challenges and opportunities of goat production with the aim of delivering summarized and synthesized information for the beneficiaries and users. In developing countries, huge goat resources are present and the demand for meat products is strongly increasing. Ethiopia has one of the largest livestock population in Africa with the estimated domestic animal number of 57.83 million cattle, 28 million sheep, 28.6 million goat, 1.23 million camels, 60.5million poultry, 2.1 million horses, 0.4 million mules and 7.88 million donkeys. Ethiopian possesses one of the largest goat populations in the continent that serves multiple functions to communities that herd them. The growth rate of goat population is 1.1% with off-take rate of 35%. In Ethiopia, goat production accounts for 16.8% of total meat supply and 16.7% of milk consumed in the country. The average annual meat consumption per capita is estimated to be 8kg/year which was lower than consumption of meat in the USA (124kg per capita per year) and that of the global average meat consumption. The average carcass weight of Ethiopian goats is 10 kg, which is the second lowest in sub-Saharan Africa. Ethiopian indigenous goats are genetically less productive as compared to temperate breeds. They constitute over 95% of the small ruminant population of Africa and 99.77% of Ethiopia. Goat productions are highly influenced by feed shortage, disease and parasites, market fluctuation, high predatory, genetically less productive breed, severe water shortage and high shortage of labor. There are opportunities to increase goat production like several development partners involved in higher learning; research and development are currently committed to goat development. Depending on this review 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 feed supplementation and better health care.
Keywords: goat production, challenges, opportunities, Ethiopia.

1. Introduction

1.1. Background

In developing countries, huge goat resources are present (Aziz, 2010) and the demand for meat products is strongly increasing (Narrod et al., 2011). Thus, goat farming could play a considerable role in improving the livelihoods of poor African farmers (Peacock, 2005). Goats are less numerous as compared to cattle in Ethiopia; however, the sheep to goat ratio decreased from 1.29 to 1.06 within the last 20 years (FAOSTAT, 2015). The country is home to genetically diverse goat populations that are widely distributed across all agro-ecologies (Hassen et al., 2012).

Ethiopia has one of the largest livestock population in Africa with the estimated domestic animal number of 57.83 million cattle, 28 million sheep, 28.6 million goat, 1.23 million camels, 60.5million poultry, 2.1 million horses, 0.4 million mules and 7.88 million donkeys (CSA,2016). Ethiopian possesses one of the largest goat populations in the continent that serves multiple functions to communities that herd them. The recent data from CSA (2012) indicated that the growth rate of goat population is 1.1% with off-take rate of 35%. In Ethiopia, goat production accounts for 16.8% of total meat supply (Ameha, 2008) and 16.7% of milk consumed in the country (Tsedeke, 2007). In Ethiopia, the average annual meat consumption per capita is estimated to be 8kg/year which was lower than consumption of meat in the USA (124kg per capita per year) and that of the global average meat consumption (38kg/year) (Ahmed, 2008).The average carcass weight of Ethiopian goats is 10 kg, which is the second lowest in sub-Saharan Africa (Adane and Girma, 2008). Ethiopian indigenous goats are genetically less productive as compared to temperate breeds (Mohammed et al., 2012). They constitute over 95% of the small ruminant population of Africa and 99.77% of Ethiopia (CSA, 2012).

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. Though the purpose of keeping goats vary from area to area due to economic, cultural and ecological factors (Getahun ,2008), they are mainly maintained for fulfilling multiple roles, ranging from socio-cultural purposes to providing meat, milk and manure (Workneh, 2003). Flock sizes are larger in the lowland mixed crop-livestock and pastoral and agro-pastoral systems (Solomon et al, 2010). In the highlands, because of shrinking cultivated areas per household, reduced feed availability and land degradation, goats are kept in a small flock size.

Goats are often found in severely degraded areas and are thus wrongly accused of being the cause of degradation. Actually, goats are an important animal and an integral part of tropical agricultural systems. Goats are important for diversifying production, creating employment, increasing income, building capital, contributing to human nutrition and reducing risk, in addition to their quantifiable outputs of several products. Goats are found in all agro-ecological zones from hyper-arid to super-humid and over the whole range of production systems from intensive smallholder production to very extensive nomadic pastoralism (Payne and Wilson, 1999).With the realization that small ruminants in general and goats in particular are an under-used and poorly understood resource, an interest in goat production in the tropics has grown in recent years. There is need for a greater understanding of their role, capabilities and outputs that will contribute to the overall productivity of tropical farming systems.

Goat inhabits a wide range of environments, extending from tropical to cool temperate climates (Zelalem and Fletcher, 1993). 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 (Gurmessa et al., 2011b). Goats are browsers and highly selective feeders and had a strategy that enables them to thrive and produce even when feed resources, except bushes and shrubs, appear to be non-existent. Thus, the presence of goats in mixed species grazing systems can lead to a more efficient use of the natural resource base and add flexibility to the management of livestock. This characteristic is especially desirable in fragile environments (Adane and Girma, 2008).

Despite the large size of the country's goat population, the productivity per unit of animal and the contribution of this sector to the national economy is relatively low. This may be due to different factors such as poor nutrition, prevalence of diseases, lack of appropriate breed and breeding strategies and poor understanding of the production system as a whole. However, the indigenous goat breeds have relative advantage in their natural habitat. According to Kiwuwa (1992), the broad genetic variability of African small ruminant breeds enables them to survive under stressful environmental conditions, including high disease incidence, poor nutrition, and high temperature. Environmental pressure also maintains a wide range of genotypes, each adapted to specific set of circumstances. The overriding constraint of livestock production in the country is believed to be shortage of feed (Seyoum and Zinash, 1995). In low land areas, goats rely on browsing and grazing whereas in the highlands they depend on communal grazing, fallow lands, and crop residues (Aschalew et al., 2000). The available feeds from such sources are insufficient to provide nutrients beyond maintenance requirements (Tsigeyohannes, 2000). Poor grazing and low quality feeds especially in terms of energy or protein leads to under nourishment and low productivity.

Livestock production and productivity and producers' benefits from livestock production are far below expectations. There are also variations in the performance of different breeds of goats in Ethiopia. The lack of up-to-date and location specific information on production performance, challenges and opportunities is often a major limitation to productivity and production improvement endeavors in goats in Ethiopia (Ayele et al., 2003). Understanding the response/performance of goats under farmers' management, production characteristics, identifying constraints and opportunities and designing workable production strategies are required in order to improve livestock productivity success of producers. There are a number of challenges and obstacles (constraints') limiting the success and profitability of goat production system in Ethiopia. Therefore, a comprehensive literature review on the current status of goat production in the country seems to be appealing. There is a need for reviewing the production system, production performance, constraints and opportunities of goat production. Moreover, information's on either weak sides or the success stories of goat production including its socioeconomic contributions could be used by beneficiaries.

1.2 Objective

1.2.1 General objective

- To review on production performance, challenges and opportunities of goat production in Ethiopia.

1.2.2 Specific objectives

- To review on goat production systems in Ethiopia
- To review on production performance of goat production in Ethiopia
- To review on constraints of goat productions in Ethiopia
- To review opportunities of goat production in Ethiopia

2. REVIEW

2.1. Goat production systems in Ethiopia

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. Sheep and

goats are largely produced in mixed crop–livestock, specialized pastoral and agro-pastoral 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. Large flocks are maintained in the extensive lowland (agro) pastoral systems, while small flocks and tethering is practiced in densely populated areas (Solomon G, 2010).

2.1.1. Mixed crop-livestock farming system

In a mixed crop–livestock production system, which is prevalent in humid, sub-humid and highland agro–ecological zones, goats are kept by smallholders and graze together with sheep and/or other livestock such as cattle. In these mixed-species grazing systems, goats complement cattle and sheep rather than compete with them for feed, because of their inherent ability to eat a wider variety of plant species (Lebbie, 2004 cited by Yoseph, 2007). These mixed herds usually freely graze on communal pastures and seasonally on fallow cropland with no extra-supplement and receive minimum health care. However, due to the increasing population pressure in areas with this production system, free grazing is becoming limited and goats are now tethered, reflecting the challenge of procuring sufficient feed in this system (FARM-AFRICA, 1996). Furthermore, in highland agro–ecology, as in central Ethiopia, increased human population has led to decreased farm size and a gradual shift from keeping large to small ruminants, mainly goat and sheep (Peacock, 2005).

2.1.2. Agro pastoral and pastoral system

In pastoral and agro–pastoral production systems, which are found in arid and semi-arid agro–ecological zones, goats are kept by nearly all pastoralists, often in mixed flocks with sheep, freely grazing or browsing in the rangelands (Matawork Milkias, 2016). This production system is associated with the purely livestock based nomadic and transhumance pastoral production systems based largely on range, primarily using natural vegetation. In the lowlands of Ethiopia, livestock is comprised of large flocks and herds of sheep and goats, cattle and camels mainly transhumant, where only surplus are sold at local markets or trekked to major consumption centers. Extensive livestock keeping is the backbone of the economies of the lowlands (EARO, 2000).

2.1.3. Urban and per-urban (landless) goat production system

This system involves the production of goats within and at the periphery of cities. Quantitative data is not available on the importance of urban and per-urban production systems but it is not uncommon to observe goats in urban areas including the capital Addis Ababa. Feed resources are usually household wastes, market area wastes, mill leftovers, by-products and roadside grazing (particularly in the per-urban system) (Niftalem, 2000).

Small-scale goat fattening is emerging as an economic activity in many growing cities. The viability of this activity depends on its acceptance into the formal extension services. It could either be a high input/ high output or low input / low output system. In most cases, the types of goats available from this system are meant for local consumption, being well-finished, fatty animals demanded by the local Ethiopian market (Solomon et al., 2008).

2.2. Production performance of goat production

2.2.1. Age at first service (mating)

According to Tesfaye T (2009) funding puberty in terms of farmers view point in goat production is the age at first service. Acceptance of service for the first time depends upon the sexual maturity and body condition of the goats. According to producers, the overall average (Mean ±SD) age at first service (mating) in months both in male and female goats was 7.4 ± 1.95 and 8.2 ± 1.64, respectively. The average age at first service of Metema goats obtained in the study is within the range of maturity age reported for most of the tropical goat breeds under traditional management systems. However, Metema goats showed delayed age at first service compared to Red sokoto goats (4-5 months) of Nigeria, but younger than Afar (24 months) goats.

2.2.2. Age at first kidding

According to Tesfaye T (2009) funding, age at first kidding is a good indicator of sexual maturity in does. The overall mean age at first kidding of local Metema goats was found to be 13.6 ± 2.44 months. This is in agreement with that reported by Belay (2008) for Abergelle and Central Highland goats that have the mean ages at first kidding of 14.9 and 13.6 months, respectively. Workneh (1992) also reported that 36% of the does had their first kidding at the eruption of their first permanent incisor teeth among the goat types of southern Ethiopia; which is lower age as compared to this result.

2.2.3. Kidding interval

Kidding interval is one of the major components of reproductive performance that has significant influences on production systems. It contributes largely to the productive efficiency and it has been reported to be affected by nutrition, suckling, parity (number of times kidded) and breed (Banerje et al., 2000). Under normal circumstances (no drought), tropical goats should be kidding at least three times in 2 years. For this to be realized, kidding interval should not exceed 8 months (245 days). The kidding interval in most tropical goats varies from 180-300 days (Wilson, 1991). The reported kidding interval for Somali (Boran) does was 14 months (Wilson, 1991). Kidding interval for Arsi-Bale and Central Highland goats was reported to be 242.1 and 247.96 days,

respectively, under traditional management practices (Tesfaye et al., 2006).

According to Tesfaye T (2009) funding, kidding interval is one of the major components of reproductive performance that influences production systems. The overall mean kidding interval of Metema goats were 8.4 ± 1.37 months. These results were lower than reported kidding interval for Abergelle and Central Highland goats which were 11.31 ± 2.21 and 10.3 ±1.42 months, respectively (Belay, 2008). These results were similar with the reported kidding interval for most Small East African goats' that ranged from 236-265 days (Wilson and Durkin, 1988). The overall kidding interval implies the possibility of achieving three kidding over a two-year period. However, there was a wide variation in the kidding interval reported by the farmers despite the fact that the breeding males run continuously with the breeding females within the individual flock or other flock throughout the year. Nonetheless, the kidding interval of 8.4 months indicated the ability of the goats to breed throughout the year.

2.2.4. Milk production

The majorities of the goat breeds found in the tropics are raised primarily for meat production. However, there are few goats breeds like the Nubian goats in North East Africa and the Indian goat breeds (Jamunapari, Barbari and Beetal) that are known to produce, on average, 4.2 kg milk per day (Devendra and Burns, 1983). The lactation length (LL) of most tropical indigenous goats is reported to be short (80-200 days) with lactation milk yield ranging from 24 kg for Afar goats in Ethiopia to 480 kg for Alpine goats in Burundi (Banergee et al, 2000). According to Dereje T et al. (2015) funding the average milk yield estimated for Afar goats are 24 kg per lactation and 0.28 kg per day under station management system. A study conducted to evaluate the milk production potential of Abergelle and Bagait goats showed that Begait goats are capable of producing 0.55 kg of milk daily without supplementation but 0.7 kg with supplementation (Berhane and Eik, 2006). The corresponding figure recorded for Abergelle goats are 0.37 and 0.54 kg, indicating that the milk production of this goat breed is lower than that of Begait breed.

2.2.5. Birth weight and growth rates

According to Dereje T et al. (2015) funding birth weights of kids from indigenous goats of Ethiopia range between 2.2 and 2.9 kg. Birth weight between 3 and 3.5 kg is recorded for Begait and Abergelle goats (Berhane and Eik, 2006) and Somali goats (Zeleke, 2007) under improved management conditions. Average weaning weights (WW) of Abergelle and Begait goats at the age of three months are found to be in the range of 9 and 10 kg. Under traditional management system in Sokota district, lower body weight (2.3 kg) and weaning weight (7.9 kg) have been recorded for Abergelle and Begait goats, respectively with pre-weaning daily growth rate (PWGR) of 62.6 g/day (Muluken, 2006). According to Tesfaye et al (2000), the BW of Borana and Somali kids averaged 2.3 kg. This is similar to BW of kids from central highland goats.

According to Tesfaye et al. (2000) birth weight of male and female kids were 2.28 ±0.54 and 2.36 ±0.51 kg for Borana Somali goats and 2.00 and 1.00 kg for Mid Rift Valley goat types, respectively. In the same study the mean birth weight of single and twin births reported to be 1.69 ± 0.43 and 1.23 ± 0.37 kg for Mid Rift Valley goats, respectively.

2.2.6. Litter size and twining rate

Goat is the most prolific ruminant of all domesticated ruminants in tropical and sub-tropical regions. Litter sizes for most indigenous goats of Ethiopia are reported to be between 1.07 and 1.5. Most indigenous goats have twining rate below 20% varying from less than 5% for pastoral goats in arid areas to 36% for goats in the humid areas of the country. The corresponding figures estimated for Arsi-Bale goat are between 18 and 36% (Tsedeke, 2007). In few cases, twining rates, as high as 41 to 50%, have been reported for local goats in Awassa Zuria (Markos, 2000) and in western lowlands of Ethiopia (FARM-Africa, 1996).

In the central Ethiopian highlands, Litter Size has been recorded to be 1.21, with twin births accounted for about 17% (FARM-Africa 1996). On the other hand, Dadi et al (2008) reported Litter Size of 1.6 for Arsi-Bale goat kept under station condition. The average Litter Size estimated for local goats in Alaba, Southern Ethiopia, is about 1.47 (Deribe, 2009). The reported Litter Size (1.07) and Twining rate (2.5%) of Short-eared Somali and Afar goats kept under on-station management system (FARM-Africa 1996) are relatively small. It is even lower than 1.28 recorded for Tanzanian goats in semi-arid condition (Ahmadu et al 2002).

2.3. Challenges of goat production in Ethiopia

According to Tesfaye T (2009) funding disease, labour, and theft were the most pertinent constraints for goat production in that order of importance in both cotton and sesame based farming systems. Feed shortage problem was ranked low in both production systems. This might be due to the availability of enough feed or good range condition which was more likely good in Metema area. According to the respondents, the most serious problem encountered in goat farming was prevalence of disease in both farming systems in the study area followed by theft. In the same study absence of marketing policies, illegal market and inappropriate extension strategies for goat keeping were also challenges in Metema district.

According to Arse G et al. (2012) funding climate change was the main factor that affects production performance because of production system depends on rain based agriculture. Also according to Solomonet al. (2010) goats and other livestock were largely reared in extensive system and fully dependent on rain-fed pasture. The major challenges for goat production in Adami Tulu, Arsi Negelle and Fantale districts of Oromia region were feed shortage, high disease prevalence, high predatory, poor market, genetically less productive breed, severe water shortage and high shortage of labor (Arse et al., 2012).

According to Belete A et al. (2015) funding the main bottle neck for indigenous goat production in Bale zone of Oromia region were disease, feed shortage and predators were the most pertinent constraint of goat production in order of importance. Disease is the serious problem across the entire studied district with an index of 0.34, 0.27 and 0.30 for Mada Walabu, Sawena and Rayitu districts, respectively, in Mada Walabu and Sawena district, predator ranks 2nd with an index of 0.26 and 0.21, respectively. But, in Rayitu district, feed shortage took the 2nd rank. The report of Arse et al. (2013) also show that severe feed shortage, high disease prevalence and predatory were the main serious problems in ATJK, Arsi Nagelle and Fentale districts. The great production loss caused by disease problems could be due to climatic condition of the study area, which might aggravate the prevalence of disease and poor nutrition for goats. Moreover, inadequate health management by farmers and less efficient veterinary service frequent occurrence of the drought in the study area may aggravate the problem. This is mainly due to geographical location, absence of drugs and absence of services in remote areas (Solomon et al., 2010). Generally, the main challenges that affect the production system and performance of goat include;

2.3.1 Feed shortage

According to Fikru S and Gebeyew K (2015) funding feed shortage were limiting constraint in goat production in the study area. Feed shortage in both seasons (dry and wet) limits productivity of goats and it was further worsened due to the absence of awareness and practice of feed conservation techniques.

According to Girma D et al. (2013) funding shortage of feeds was one of the critical problems for goat production in the study areas. Soon after the entrance of the dry season of the year almost majority of smallholder farmers found in the study are migrate their flock to lake areas where there is ample feeds for goats as a result of the presence of lake.

According to Quinn et al. (2007) funding the quality and supply of feed resources is seasonally variable. Grazing resources in the highlands are diminishing due to increases in cropping land. Bush encroachment and overgrazing have reduced grazing resources in the pastoral areas. Poor management of rangelands and inappropriate grazing management is the main problem which affects feed quality and quantity. In other funding rangeland fires and seasonal droughts limit the availability of fodder (Ben Salem and Smith, 2008) in the communal areas. The quality and availability of natural pastures is highly variable in the tropics with crude protein dropping below 8% in dry mature tropical grasses, especially during the dry season (Ben Salem and Smith, 2008).

2.3.2. Diseases and parasites occurrence

According to Girma D et al. (2013) funding majority of the producers were indicated as disease was the major health problem of small goat production in Adami Tulu Jido kombolcha district of East Shawa Zone. About 88.3% of the interviewed farmers are responded there is high pre weaning mortality of small ruminant in the study areas. About 60% of the respondent farmers are reported as the trend of mortality of kids is increased. But only 21% of the interviewed farmers were responded as the trend of kid mortality is decreased. About 56.7%, 33.3%, 30%, and 10% of the respondents farmers are showed that winter, summer, autumn and spring are the season when most of the kids are frequently died.

According to Fikru S and Gebeyew K (2015) funding farmers rearing goat confess a range of interlinked technical, socioeconomic and institutional bottlenecks. The major constraints in goat production in the study area were disease and parasite. About 33.3% of total flock owners across all the study sites reported that diseases and parasites are overriding problems in goat production.

According to Sissay et al. (2006) funding the impact of diseases and parasites may be through high morbidity, mortalities, abortions and stillbirths or subclinical effects manifested as weight loser reduced gains. The negative impact of diseases and parasites may also be through the financial implications involved in controlling or overcoming the effects of disease and mortality which highly affects production performance of goat production. Diseases and parasites have a heavy impact on kids because of their poor immunity status that means they cannot survive harsh conditions (Sebei et al., 2004). High kid mortality diminishes the benefits of the high reproductive performance of does. Lack of hygiene which allows the build-up of infective agents and use of contaminated water are major contributory factors to high kid disease which causes mortality (Peacock, 2005).

According to Alexandre and Mandonnet (2005) funding Parasites reduce voluntary feed intake, efficiency of feed utilization and increase the endogenous loss of protein in the gastrointestinal tract. Prevalence of goat diseases and parasites in communal areas is largely unknown. It is crucial to investigate the

prevalence and type of different helminthes affecting goats prior to devising control strategies against gastrointestinal parasites in the communal areas. There is little government support for control programs and research on diseases and parasites in goats in many African countries

2.3.3. Marketing problem

According to Moll et al. (2007) funding there are insufficient national investments on marketing inputs and services, research and support on marketing of goats and their products, in most developing countries. Formal goat marketing, in most communal areas, is characterized by absent or ill-functioning markets. Smallholder households are often located in marginal areas with poor infrastructure and poor access to the market; thereby limiting goat farmers' capacity to transport goats to the few available slaughter facilities (Bayer et al., 2001). Communal farmers, therefore, resort to the informal way of marketing their goats where pricing is based on an arbitrary scale, with reference to visual assessment of the animal. Intermediaries in most countries (Simela and Merkel, 2008) purchase live animals from farmers for resale in other areas, such as towns and schools.

According to Fikru S and Gebeyew K (2015) funding an overall of about 2.2% respondents reported lack of improved technologies and inputs for intensive and market-oriented goat production was the main problem due to lack of appropriate formal market for goat and its product marketing. Technological inputs to mitigate the clear and present danger of flock health and nutrition are critical requisite due shortage marketing inputs. Lack of capital to build flock holding and purchase production inputs (largely health and feeding) is among limiting factor for about 2.2% of the total respondents.

2.3.4. Lack of appropriate breeds and breeding technology

According to Bayer et al. (2001) funding report a crucial component of any production system is the utilization of appropriate and adapted goat breeds. Exploitation of suitable, well adapted breeds is important, if feed resources are to be optimally utilized. To fulfill the function of savings, for example, it is important that the type of goats being kept does not require much management input and veterinary care and can be kept at a low cost. Indigenous goat breeds were better to adapt harsh conditions but their production performance lower than exotic breeds. This invites communal goat farmers to consider traits other than fast growth but hardiness. In addition, goats of a particular color may be preferred for cultural or ceremonial purposes. These are rational, non-commercial objectives that are of great importance to the resource-poor farmers where breeds are chosen to suit production objectives. Regardless of the different objectives farmers might rear goats for, in communities of most countries in Southern Africa, there are no structured breeding seasons and, therefore, does and bucks run together all year round (Tefera et al., 2004). Inbreeding is a challenge for many communal goat flocks. It results in poor growth rates (Saico and Abul, 2007) and abortions among other negative effects.

2.4. Opportunities

According to Tesfaye T (2009) funding the opportunities of goat production in the Metema district of Amhara region was enough grazing (communal as well as individual) land that was not utilized for growing food crops. If this grazing land is properly managed, it could be a good source of good quality feed to boost goat production in the area. At the world market, the demand for mutton and goat meat have been increasing due to an increase in income and increased population hence there is a growing demand for goats in both the domestic and export markets. Young male flocks have huge demand by the export abattoirs. With the increased competitiveness in the market, farmers are looking for the alternative ways of breeding and fattening to increase their income.

According to Fikru S and Gebeyew K (2015) funding modest interventions on the existing flock impediments, such as minimizing flock loss through diseases and parasites control and proper feeding during dry seasons could potentially boost the flock performances. The local goat flocks demonstrate remarkable response to the local fattening management practices and possess desirable physical characteristics adding high aesthetic value. The local feeding management system entirely depended on natural pastures of spicy herbs drawn the preference of urban consumers like the present "organic agricultural products". High demand of the small ruminants in the local market as a result of population increase, urbanization, and increase in income (even within a district) can be considered as an opportunity for the small ruminant producers. Nowadays, many abattoirs flourish in the country; so agents and assemblers purchase small ruminant even at farm gate. Several development partners involved in higher learning, research and development are currently committed to sheep and goat development in the zone.

Small holder farmers are aware of the current high market values and demand for goats. Several development partners involved in higher learning, research and development are currently committed to goat development in the Metema district. These could facilitate entry of intervention (inputs, technology and recommendation). The support of IPMS under ILRI is sharing a good experience of community-based goat improvement program with full participation of the beneficiaries (Tesfaye T, 2009).

Improved environment improves the genetic potential with the result of improved productivity. Goat have great role in reducing unnecessary expansion of bushes and shrub by browsing on it and in turn maintaining the equilibrium of the nature in pasture lands. At federal government level, there is pastoral

standing committee which works on improving life pastoral communities. There are also many Non-Governmental Organizations (NGO) that are working on improving living and livelihood through improving the production and productivity of their animals. Government is also working to solve the challenges (Arse G et al., 2012).

3. Conclusion

In developing countries, huge goat resources are present and the demand for meat products is strongly increasing. Ethiopia has one of the largest livestock population in Africa with the estimated domestic animal number of 57.83 million cattle, 28 million sheep, 28.6 million goat, 1.23 million camels, 60.5 million poultry, 2.1 million horses, 0.4 million mules and 7.88 million donkeys. Ethiopian possesses one of the largest goat populations in the continent that serves multiple functions to communities that herd them. In Ethiopia, goat production accounts for 16.8% of total meat supply and 16.7% of milk consumed in the country. The average annual meat consumption per capita is estimated to be 8kg/year which was lower than consumption of meat in the USA (124kg per capita per year) and that of the global average meat consumption (38kg/year).The average carcass weight of Ethiopian goats is 10 kg, which is the second lowest in sub-Saharan Africa. Ethiopian indigenous goats are genetically less productive as compared to temperate breeds. They constitute over 95% of the small ruminant population of Africa and 99.77% of Ethiopia. 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 influenced by feed shortage, disease and parasites, water shortage, market fluctuation, high predatory, genetically less productive breed, severe water shortage and high shortage of labor. There are opportunities to increase goat production like several development partners involved in higher learning; research and development are currently committed to goat development.

4. Recommendation

Depending on the review I recommend the following things to improve goat production performance and to mitigate challenges of goat production.

- It is important to use modern production system with improved technology in urban and per-urban area, and in rural area improve traditional system through feed supplementation and better health care.
- Producer should use feed storage systems for dry seasons and cultivate forages through irrigation.
- It is important to increase and use different opportunities that improve goat production.

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