



Healthy prolific goats at Canelfood's feed lot in Tete

Photo: S Homann-Kee Tui

Sustainability transitions for smallholder farmers

How can government, research and development programs support profitable goat markets in Tete?

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Executive summary

For Mozambique the goat sector provides huge opportunities for reducing rural poverty levels, improving food security and contributing to the national economy. Mozambique has a huge demand for goat meat and products. Large and medium size buyers fail to source enough goats of the right quality and supply consistently to feed the growing demand in urban markets. Despite its potential, the goat sector is not fully developed. Improved goat production can provide an additional annual income of US\$50 million at the national level. In the short term farmers can double their income from goats. Though farmers realize the critical role of goats as source of saving and possible source of investment, they do not invest much in goats and are not able to make an adequate profit from selling their goats. Mortality rates of around 15%, poor quality of goats being sold to markets, and livestock theft are losses to entire rural economies. There are many causes for the low productivity, the primary reasons being: a) Lack of a market structure through which farmers and the private sector can interact; b) Absence of a grading system that rewards

farmers for their investments in quality production; and c) Livestock theft that destroys community trust, and eventually hampers collective action among farmers.

In this brief, we advocate for investments in better market linkages for goats, and new partnerships, which will create the conducive conditions for farmers to begin to invest in goats and improve the production levels. We suggest a series of solutions that will accelerate the transition of smallholder farmers to better livelihoods, and leverage further investments by the private sector. Government, research and development programs that invest in these solutions will directly contribute to welfare creation, food security, education and health in rural communities, particularly in the remote and vulnerable dryland areas.

Introduction

The Government of Mozambique recognizes the livestock sub-sector as key for agricultural and economic growth. Yet, the potential of livestock for improving the livelihoods of smallholder farmers and the national economy is undervalued and not adequately utilized. Mozambique has an unmet and increasing demand for livestock and high quality livestock products. The country currently imports more than 30% of its consumed meat, estimated at more than US\$7 million annually (Rutahizana et al. 2011; FAO stat.com). Tete Province in Central Mozambique has amongst the highest national cattle and goat populations (25% and 15%, respectively) and supplies livestock to almost all other provinces in Mozambique, predominantly to the capital city of Maputo, at a distance of more than 1,600 km. Changara and Marara are districts in Tete which supply the highest numbers of goats to markets. Farmers can sell goats three times a week, Tuesdays, Thursdays, Saturdays at informal markets called *feira*. Despite having access to these markets, farmers do not make adequate profits from their goats.



Photo: S Homann-KeeTui

A young and robust goat flock as important livelihood resource for farmer families in Marara district, Tete.

Private investors have recognized the opportunity to provide a more reliable and fair market for smallholder farmers. Two companies established meat-processing plants and started buying goats on a large scale. They require more than 30,000 goats per year to operate profitably. To improve product quality and sustain the flows they started investing in feeding technologies, herd and health management, and improving the local breeds. Their greatest challenge is to source sufficient numbers and quality of goats from smallholder farmers in a cost effective way. Collecting single goats from scattered farms in remote areas, or buying goats at the *feira*, is not lucrative. It does not pay off the investment in transport and processing the goats. It prevents farmers and buyers from improving market flows at a large scale.

Improving the goat market to support smallholder farming has various advantages:

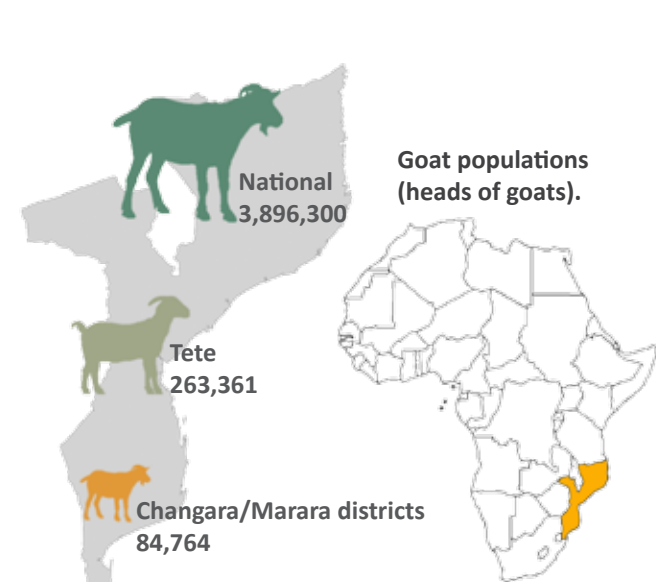
- **Ready source of cash:** For the very poor farmers goats are a readily available source of cash income to cover daily needs and to buffer droughts and other shocks. Cash from goat sales helps them pay for food purchases, medical bills, and reinvestments into farming.
- **Equity:** Goats provide livelihood opportunities for a broad range of farmers, including those with little household assets. In Changara and Marara districts, about one-third of the households keep more than 30 goats each.
- **Household food and nutrition security:** By keeping and selling goats, farmers have cash to buy food when crop harvests fail. Through goats, farmers do not depend on crop production alone, which is not reliable due to poor and erratic rainfall. Goats support vulnerable farmers coping with natural disasters like frequent droughts in Tete.
- **Increasing overall farm productivity:** Using the cash from goat sales for reinvesting in the farming system (seed, fertilizer, solar powered water pumps, fodder, veterinary inputs) farmers can increase overall farm production by their own means.



Photo: A Van Rooyen

Improved goat holding facilities to help successful marketing of goats in areas like Tete.

Box 1. The potential for raising income from goat production in Mozambique.



Goat production in Changara/Marara



Households that own goats: 80% of all households



Ownership of goats: on average 12 goats per household



Goats sold: on average 15% per household's flock size and year, equal to 2 goats per household, resulting in about 12,000 goats to markets



Goats lost: on average 15% per household's flock size and year, reducing mortality rates can double sales

The potential for raising income from goats is high in Mozambique:

- **National level:** Given that Mozambique has 3,896,300 goats, with mortality rates of 15%, 584,445 goats might be lost annually. As a first step, reducing mortality to 5% would make 390,000 goats available for sale, additional value of US\$7,000,000 - 10,000,000. If furthermore attractive markets would stimulate farmers improving quality to fetch 50% higher prices per unit sold, and double the number of goats offered for sale, this would mean an additional value of US\$25,000,000 - 50,000,000.
- **Farm level:** An average farm household, selling 2 goats per year, currently generates a revenue of about US\$50 from goats. In the short term farmers could more than double their revenue from goats: A farmer that reduces mortality rates to 5% and sells younger animals of higher quality can earn US\$65 more. Selling at organized markets the farmer can earn additional US\$20. Within 5 years farmers can multiply their revenue further: Introducing improved breeds would raise revenues by another 50%, increasing offtake to 30% could raise the revenue from goats to more than US\$200 per farm.

source DPASA statistics, 2015

- **Empowerment:** Markets are the key driver for social organization, encouraging communities to cooperate for tangible benefits, and in the process build better relations with external partners.
- **Education and health:** Paying school fees for children or medical bills with the cash from goat sales, farmers invest in the future generation and open new avenues out of farming.
- **Gender:** Women contribute to decisions over producing and selling goats; goats provide income at less labor than other farm enterprises. Women also engage in trading and processing of goats.

The main message of this brief is that more attractive and better organized goat markets can accelerate farmer transition to better livelihoods, higher profits during good years and financial buffer for overcoming droughts, with benefit for both poor and better-off farmers, and leverage further investments by the private sector.

Vision for goat markets in Tete

Creating market linkages is the entry point for large-scale development outcomes falling into place. If all actors in the goat value chain cooperate in supporting goat sales, larger numbers and higher quality of goats will be supplied to markets, and thereby consolidate goats

from Tete in high quality markets in Mozambique and in the region. If farmers can participate in these markets they will start working smarter and take up improved management. Therefore, within the next five years, the goat value chains will have to develop mechanisms that reward higher quality meat products and efficient sales operations. The increasing demand for goat meat will pull in more investments. Already buyers of goat meat report supply shortages; annual increases are projected at 3% at national and regional markets. Low-income consumers will continue to demand for low price cuts. Higher income consumers are willing to pay more for packaged high quality meat. There are also new market opportunities for goat meat to provide dietary requirements, 50-65% lower in fat and cholesterol but similar in protein to other red meats.

How can we achieve the vision?

Government, research, development and private sector must invest into four strategic areas, for smallholder goat farming to become more competitive and generate greater value addition and income from goats in semi-arid areas in Mozambique, like Changara and Marara districts (Figure 1).

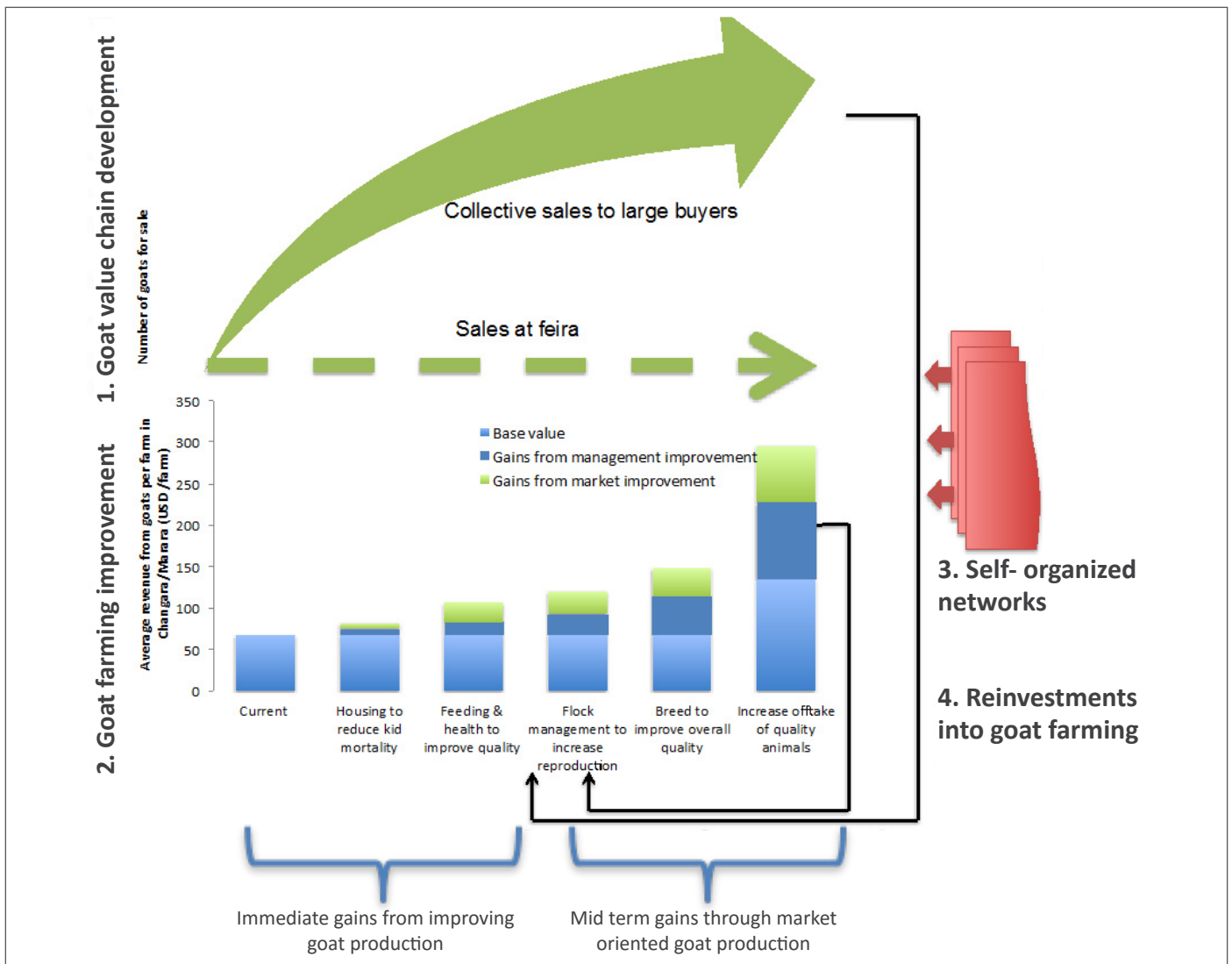


Figure 1. Nested approach to profitable goat markets in Tete (adapted from van Rooyen and Majuru 2012).

1. Goat value chain development: increased market access and profit for farmers and buyers

While currently the *feira* offers farmers regular access to markets, it prevents knowledge exchange with buyers and refinement of market transactions. This is because market intermediaries buy goats from distant farmers and bring the goats to the *feira* at a much higher price, but do not add more value or transfer information to farmers.

Therefore, for farmers to benefit from the enormous market opportunities, farmer-buyer relations must be improved, e.g., through better-organized sales at satellite markets, parallel to the *feira*. Buyers will then be able to collect large numbers of goats directly from farmers and use market events to inform large number of farmers about market requirements. They will make collective sales attractive by paying higher prices for higher numbers of goats available and premium prices for fulfillment of quality and health standards. Buyers will pass on some of the savings from reduced transport costs to farmers. Public actors will control transfer of ownership, health and quality at the sales events.

Farmers will be responsible to communicate number and quality of animals available for sale and ensure that agreements with buyers will be met. Farmers will thereby gain confidence and competence in markets, as they will know the price they can expect. Farmer associations will be able to collect levies from the sales, which can be used for organizing the goat sales, improving and maintaining local market infrastructure.

2. Goat farming improvement: increased productivity and volumes for sale

Unproductive and dead animals are wasted resources and lost income. Technologies to address these losses are already available, improved housing, crop residue and fodder production for feeding, animal health, flock and breed management.

For farmers to comply with the market demand for goat products, they must have access to technology packages that will directly lead to higher returns at markets. Support services must bring the benefits to scale, e.g., illustrate that reducing mortality and increasing reproduction will avail more animals for sale, how selling

at younger age and in good conditions will increase the value per unit sold, how having more cash from goat sales will allow greater re-investment into improving flock performance. It is important that farmers will have access to the relevant inputs and technologies at the time they sell goats. For input suppliers, displaying relevant farm inputs and commodities at goat sales will be a business opportunity and can ease transactions with large number of farmers.

3. Self-organized networks: better connectedness around local markets

To create confidence, initiate agreements, build self-organized networks and scale out market-oriented goat production, Innovation Platforms (IPs) provide a useful mechanism. IPs generate collaborative arrangements and commitments among actors with divergent interests. They work together on a voluntary basis, towards the common vision of goat market improvement, and ensure rewards for everyone. Important preconditions are that smallholder farmers express their interest in selling goats for business, large-scale buyers see opportunities in exploring new ways of marketing goats, input suppliers see reasons to invest in smallholder farming and government agents and extension services follow their purpose in enabling smallholder farmers to participate in markets.

Solutions created by IPs must address critical gaps to make local markets work. For instance, to raise the number of quality goats for sale, IPs must capacitate farmer associations as central actors, responsible for organizing sales that bring goat markets closer to farmers, monitor goat sales and link goat sales to input supply. Starting with few sales points IPs will learn how best to establish and manage local market arrangements. Building local catchment areas and links with other associations will ensure that sufficient number of goats can be sourced and business is attractive enough for other input suppliers to attend the sales. Once such local sales models have been developed, they can be scaled as prototypes for alternative goat market arrangements.

4. Reinvestments into goat farming: goat markets as engine for growth

The primary function of goats is to provide income. Given improved market access, farmers will reinvest more cash from goat sales into goat farming activities and build up the performance of their flocks. This will contribute towards a positive goal in farming, rather than being drive by problems and crisis. Cash from more market oriented goat sales will also support cropping activities and generate more grain and feed that would strengthen overall farm outcomes. Better integrating these farming sub-components will thereby accomplish faster what they would achieve separately.

Under improved marketing conditions farmers and buyers will gain. Already there are buyers who are prepared to re-invest parts of their profits to sustain the goat flows and further increase the sales volumes. These buyers will become important partners for demonstrating market requirements to large groups of farmers and promote technologies such as improved housing, fodder seed, goat health and flock management schemes, improved breeds. Market-oriented goat farming will thereby evolve as the currency for farming systems development and rural welfare creation.

Box 2. The counteract: How barriers will prevent goat markets to evolve?

Despite a massive potential for goat production to markets in Tete, farmers in districts like Changara and Marara are currently not able to make adequate profit. A series of barriers hinders market development to take off and thereby prevents farmers and buyers to gain from goats.

- **Lack of a market structure**, and as a consequence, farmers and buyers fail to communicate and share information on market requirements, and to instill confidence and trust in a functional market system.
- **Absence of a grading system** means farmers do not get the rewards for investing in goat production and improved quality; mechanisms and incentives for encouraging improved goat management are missing.
- **Livestock theft** as an overall threat to the system that destroys any form of development.

Figure 2 illustrates how not addressing these barriers impacts negatively on the entire goat production to market systems. Farmers are not motivated to improve goat management, thus continue to fetch little money at the market. Farmers thereby lose the opportunity to gain more from goats. Goat sales remain stuck at a low level of profit and this prevents other investors from improving the conditions for goat farming. Moreover, the opportunities for building rural economies are being lost.

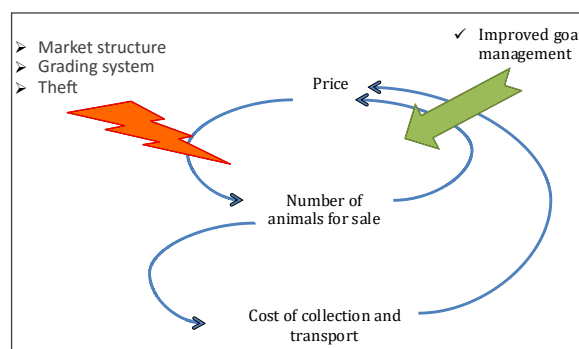


Figure 2. From barriers to benefits in goat marketing.

Table 1 highlights the negative consequences of barriers and suggests solutions that could help overcoming the barriers. Addressing the barriers will support increasing gains for farmers, private sector and welfare creation in rural areas.

Investments required to gain from goat market improvements

For Mozambique to capitalize on its enormous opportunities in goat markets and enable direct benefits for rural economies a series of basic investments and mechanism must be established.

Market channels

To make goat marketing more profitable, farmers must have access to market channels that support direct links between farmers and buyers who would pay for quality products. Satellite sales, parallel to farm gate sales and the traditional *feira*, offer such opportunity. Initially development agents will facilitate the organization of the sales, until farmers and buyers take over and manage the most functional arrangements. The buying arrangements between buyers and farmers will instill efficiency and confidence in these markets. Local farmer associations will manage the sales and ensure smooth transactions of animals in good conditions. A commission, fixed amount per animal or a certain percentage payable to the hosting association will help to organize the sales and maintain

the infrastructure. Buyers will be able to fill their truck in a short time, and have time to buy more animals. Other actors must be invited to the sales, e.g., input suppliers offering their produce, easing farmers' transactions with the cash from goats sold.

Market infrastructure

For efficient sales operations and orderly sales procedures, improved goat market infrastructure is indispensable. The minimum infrastructure requirements are not met at current informal sales.

- **Holding pens** for animals must be established, to allow the sales to be held without injuries, goats to be watered and fed. Goats of the same type and quality can then be displayed and weighed. Farmers will learn about price setting and gain confidence in transparent market procedures. Buyers who bring scales to the sale will be able to determine the weight of individual animals or groups, and quickly load and move the goats after sales.
- **Transport facilities** must maintain animals in healthy conditions during transport to the market. Bad conditions during transport causes stress, losses in body condition and even mortalities, resulting in lower prices for farmers. "We ensure appropriate transport from farm to abattoir, to guarantee goats' healthy conditions before slaughter," says Manuel Nunes, Canel foods.
- **Communication technologies** must be introduced that assist farmers passing on information to buyers

Table 1. Barriers and solutions for goat market development.

Barrier	Negative consequences	Solutions
Lack of market structure	Market intermediaries that do not transfer rewards for quality improvement to farmers prevent the market from evolving. Not only do they continue taking margins from farmers in a non-transparent way, but they also prevent information transfer between farmers and buyers, such that farmers do not understand what the market requires.	Satellite sales: Farmer associations and private sector set up market structure for direct sales with defined quality and animal welfare standards. Farmers organize the sales with buyers, and thereby gain trust in market procedures and knowledge in market processes.
Absence of a grading system	Not having a grading system that pays for quality restricts market development even further. Without rewards farmers will not be motivated to improve the quality of their goats. Farmers lose possible income with each poor quality goat sold, since larger buyers are willing to pay extra for high quality goats.	Prices per quality categories: Private sector introducing a solid grading system with well-defined criteria, a clear signal that every animal has a value and that following defined market criteria farmers can gain more from goat sales.
Livestock theft	Not controlling theft destroys all efforts in building up and improving goat production and marketing, and thereby the evolution of the farming systems. Each year farmers keep losing an immense number of goats from within the communities. Traditional re-stocking mechanisms do not apply anymore, for fear of losing the goats through theft, and making it more difficult for poor farmers to establish their goat business.	Awareness and enforcement: Recognition that solving theft as organized crime is beyond community control. Rigid government programs on theft control are needed, in collaboration with farmers and private sector.

on the number of goats available for sale, prices predetermined for types and weights of goats, on a given date and a given place. Radio or cell phones are means to announce sales days to which all interested farmers can take their animals and what goat prices farmers can expect for the various categories. Buyers, when attending such sales, must be confident about the volumes and products they can expect.

Grading system

For the market system to transfer rewards on quality improvement to farmers, and for farmers to trust in the market system, a transparent and differentiated pricing

structure must be established, with defined grading criteria and prices, offers and discounts, and open access to the price information. Currently, following market liberation in Mozambique, there is no producer pricing structure or grading system. Yet, the demand for higher quality goat meat was estimated at least 40% of the total demand for goat meat. Quality oriented buyers confirmed that they will support farmers, paying higher prices for younger animals of higher quality. Farmers already expressed a willingness to change the type of goat they usually sell towards younger animals of higher quality, given production improvements and higher prices.



Photo: AL Gungulo

The common and unacceptable way of mishandling goats on the way to markets: stress, wounds and death, implying reduced prices and revenues from goat markets.



Photo: M Nunes

The way to go: A modern goat transporter, with humane conditions, especially where goats have to be transported over very long distances to the market.

Box 3. Alternative goat market options in Tete and their different comparative advantages.

Market channels	Advantages	Disadvantages
Directly selling to processors	<ul style="list-style-type: none"> • Always open to receive animals • Direct value addition, payment per quality • Theft control through proof of ownership at sale 	<ul style="list-style-type: none"> • Transport costs and slaughter fee for farmers (offal, skin)
Traders and market intermediaries at feira, without price differentiation.	<ul style="list-style-type: none"> • Regular access • Limited liability • Value added by providing transport 	<ul style="list-style-type: none"> • Inadequate infrastructure for organized and transparent sales • No price information and transparency • No value addition and investment • Low prices for all animals, hence limited return on product improvement • Theft not adequately controlled
Large scale buyers at satellite sales, with price incentives and binding agreements.	<ul style="list-style-type: none"> • Prices and costs are known • Price incentives for large numbers of improved quality sold • Buyers provide scale for controlled price setting • Value added by quality, transport, processing and marketing services, exploring new markets • Buyers take the full risk of condemned animals • Theft control managed through proof of ownership to farmer association 	<ul style="list-style-type: none"> • Backstopping and market information support required • Success depends on farmers and buyers holding agreements • High risk for buyers if farmers do not adhere to agreements and provide product volumes and quality

Farmers must know what type of goat to select for market, in order to be able to fetch a higher price. A grading system must be promoted that clearly defines prices per quality categories. The criteria must be visible and accessible, in order to guide farmers how to tap on the huge market potential for quality goat meat. Box 4 summarizes the most important criteria to ensure the right goats for the market.

Branding goat meat from Tete: Introducing a branding strategy for goat meat would help large number of farmers to enter into a niche market that identifies goat meat from Marara as prime supplier of quality meat in Mozambique. Differentiating quality goat meat through branding will raise returns to all value chain actors, if they manage to change in the way goat meat is being traded. Already consumers have a clear preference for goat meat from Tete, associated with its particular taste. To establish a brand, policies and programs must raise greater awareness of the consumers that they are paying extra for the added value, e.g., health and food safety standards, naturally grown, grass-fed, humanely raised and handled, originating from Mozambique. All value chain actors and government services must ensure consistent supply of quality meat. Farmers

must be aware of the branding laws and benefits, and agree to follow the requirements. Farmer associations must register under the branding mark, coordinate and control goat sales. They must produce and sell animals as stipulated under the brand’s contractual agreement. A traceability system, branding and ear tags, must link each animal to its owner. Abattoirs must only slaughter animals that carry the brand. Beyond market gains, labels with identity of origin ensure ownership of goats, and prohibit illegal movement of livestock, a way to curb livestock theft.

Standards that must be defined in a goat brand:

- Origin of the animal
- Fatness, age, overall condition
- Good health, dosed and vaccinated
- Standards for animal treatment, avoidance of all stresses

To increase goat numbers for sale and quality of animals sold, massive out-scaling of technology packages is required. The technologies are readily available. Interventions that promote these technology packages to large groups of farmers will be more rewarding than single technical components. Box 6 lists immediate and mid term gains from goat management improvements.

Box 4. Most critical criteria for selecting goats for market.

Age	Age influences tenderness of meat. Meat of younger animals is more tender. Younger animals are in higher grades and fetch higher prices. Selling younger age goats also reduces wastage of feed and water, risks of losses. Farmers selling more of younger animals gain from higher turnover of their flock without reducing the reproductive potential.
Weight, confirmation, fatness	Goats of higher carcass weight, good confirmation and medium fatness are best for sale. Fatness is important for the consumer, as it adds taste and juiciness. Very lean animals fetch lowest prices. The available goat carcasses are often too small, causing high processing costs at low consumer price.
Sex	Best goats for slaughter are castrated males, as they grow faster and put on more fat. These goats must be sold at young age.
Health	Buyers offer higher prices for healthy animals, free of internal parasites. Sick goats will be a loss to markets. Buyers take the risk of condemned animals and off-falls.
Animal welfare	The quality of goat meat is higher when animals are treated without stress. Goat meat will be damaged when goats are bruised during handling or transport. Bruised meat must be removed. Bruised animals must be penalized at abattoirs.
Timing of sale	The demand for meat is continuous, with peaks during holidays. Yet, the supply drops between April to October, while prices rise. Continuous supply of goats throughout the year would contribute to stabilizing prices.
Volume of sales	If farmers would organize themselves and offer at least 150 goats per sale, buyers would save transport costs, especially where there are large distances between scattered farms. Farmers could benefit from the reduced costs.

Box 5. Suggested prices for introducing a goat grading system.

Prices per quality (US\$/kg live weight, prices suggested as of June 2016, US\$1 = 60 MTK)	Poor condition, low price	Good condition, high price
Young age (0.5-1 year)	1.0	1.3
Medium age (1- 4 years)	0.7	1.0
Old age (> 4 years)	0.4	0.9

Box 6. Gains from goat management improvements.

Immediate gains from management improvement

Improved housing

- Reduce kid and adult mortalities
- Provide security against thieves and predators

Build goat houses from local material, to prevent disease incidences (foot-rot). Improved houses ideally are warm well ventilated and dry. Raised pens do not accumulate urine and faeces and thereby reduce internal parasites.

Housing animals at night is critical to provide security against theft and predators.



Photo: ILRI

Goat shelter, improved and traditional.

Supplementary feeding

- Reduce mortalities
- Increase reproduction
- Improve quality for sale

Provide supplementary dry season feed from August to December, as well as for pregnant and kidding does and mating bucks. Goats should have 8 hours feeding time per day, and feed daily about 0.75 kg (3% of their body weight), e.g. at 1/3 high protein mucuna or leucaena, and 2/3 crop residues (roughage).

Supplementary licks, homemade, with multiple nutrients, enhance the libido of bucks, and appetite at the same time. Licks must be given along with water, to quench the goats, thirst.



Photos: S Homann-Kee Tui

Forage production and processing.

Health control

- Reduce mortalities
- Increase reproduction
- Improve quality for sale

Dosing against internal parasites at various stages is most critical so that goats can make full use of feed. Dosing must be at the onset and during the rainy season as parasites burden will increase. Dosing must be also at the end of the rainy season, so that the goats can utilize the limited feed available in the dry season. Dosing is indispensable for selling goats, such that off-falls will not be condemned.

Dip or spray weekly in winter and fortnightly in summer against external parasites, especially ticks which transmit various diseases, mange mites and fleas. Tick grease can be used on a small scale.

Trim hooves, dip in copper sulphate solution before onset of rains, to prevent foot rot disease in rainy season.

Mid term gains from management improvements

Flock management

- Increase reproduction
- Improve quality for sale

Control breeding bucks: Good bucks are the gene bank for every farmer. Select a buck from twin births, as heritability is high, with good testicles and hind limbs. Keep bucks at a rate of 1: 25 females (if young buck) or up to 50 females (if a 5-6 years old), and replace or exchange at least every 2 years. Castrate non breeding males before they reach the age of 6 months.

Control mating: It is important to keep females and breeding bucks separately, and have infrastructure for that. Choose the mating during June/July or during December/January, for higher conception rates, and to produce more kids of same age. Large number of goats can then be sold at a time.

Timing of sales: To fetch highest prices for young animals of good quality, fatten goats and sell at the age of 6 months or 1 year, thus peak sale periods in June and December.

Improved breeding

- Increase reproduction
- Improve quality for sale

Landim, local goats: Small, mature weight for females around 22 kg, males 25 kg. High reproduction (1.6 litter per year), well adapted to harsh conditions. Good tasty meat. Selection of high performing females and males increases productivity of available breeds.

Kalahari Red or Boer goats, improved breeds: Very big breed, mature weight of up to 80 kg for females and 120 kg for males. High health and feed maintenance required. Selling offspring at 7 months increases the returns on the higher maintenance requirements.



Photo: S Homann-Kee Tui



Photo: C Grant

Local and Kalahari Red breeds.

Key messages for supporting goat value chains

What is now needed for Mozambique to tap on its enormous potential and maximize benefits from their goat production, up to US\$50 million from goat sales, welfare and other social gains for smallholder farmers, are better market linkages. Only through massive investments in the goat sector and new partnerships, creating an environment for smallholder farmers to begin to invest, will they be able to step up and become proud producers of goats. More inclusive and sustainable partnerships are important so farmers can realize greater benefits from their goats, while increasing the resource base, sustainable transition to higher welfare levels.

- **Government:** If government agencies are serious about developing a competitive and sustainable agricultural sector, they must support improving the conditions for goat marketing through better policies and policy enforcement. First, programs and policies must be in place that ensure farmers' profits when selling goats, not those of scrupulous business agents. Therefore, a functional pricing structure and grading system must be in place, understood and accepted by all farmers. Second, government extension services must be capacitated in facilitating market linkages and delivery systems in more inclusive ways, e.g., open new market channels for market oriented farmers, and to which the poor can also sell when in need; promote technology packages tailored to farmers who aim at building their flocks and others for those who are able to regularly sell higher quality goats. Third, livestock theft must be controlled, for all farmers to benefit from goats. It's the government's mandate to provide safe grounds for business operations of its citizens, including vigilance in communities, animal movement control along roads and penalties. Building slaughter houses in communities is another way to reduce illegal slaughter and contributes to theft reduction. Fourth, improving access to inputs, especially in remote areas like in Tete, less attractive for agro-dealers, e.g., by reducing import tax or offering incentives to engage with smallholder farmers.
- **Research and development:** Research and development organizations need to be cognizant that they can make a more meaningful contribution to the livelihoods of smallholder farmers, especially in high risk environments like Marara and Changara districts. By stepping back, critically evaluating and communicating barriers that lock farming systems at current unproductive and vulnerable states, interventions can be identified that can make more lasting change and impact. Strategies should be explored how farmers, traders, processors, local government, research can transition to more collaborative arrangements, and beyond the farm level improve the conditions for goat farming. Research must thus go deeper than technologies and markets, and analyze what motivates the different actors to change and how lessons from change processes can be fed back to inform actors supporting local development potentials.
- **Farmers:** For farmers to profit from goat sales, they must realize goats as source of investment, rather than savings. Farmers must dedicate investments in goat management and take better care of their goats in an attempt to pursue a sales strategy. Gradually farmers will start re-investing more into goat farming in order to benefit from higher prices paid for high-quality products. They will re-invest the benefits from their goats and increase the wellbeing of their overall farm. Through membership in associations farmers will be able to organize the type of goat sales that will reward such investments, acquisition of inputs and knowledge exchange. Associations are more likely than individual farmers to engage with private sector and development, and claim government support.
- **Private sector:** Private sector making higher profits from the goat business, can be achieved if they invest more in direct relationships with farmer associations. Engaging with smallholder farmers it requires first and foremost practical ways of how all farmers will know about market requirements and price categories, and how they will be paid for their investments. Working with government and development services, private sector must advise on the criteria for a grading system that rewards farmers for producing quality products. In the short term, to sustain goat flows to markets, private sector must advertise the supply of feed and veterinary services to goat producers, e.g. demonstrating and selling inputs during goat market events. In the longer term, to build up higher quality meat supply, private sector must partner with associations that transition to more market oriented production, using improved goat breeds under improved management conditions.

Stakeholders' response

Innovation Platforms bring us knowledge

“Through the innovation platform we have not only learned about technologies, but also made the needed on-farm changes. It is now easier for us to work together and partner with organizations that support and bring knowledge to us.”

Mr Benjamin A Siwalha, Farmer from Marara district

Women decide when to sell the goats

“I inform my husband when we need to sell goats. Selling goats helps me to buy food, items for the household, and medicine if someone is sick. Men now understand the role of women in raising goats for income. We now look at goats as a means to cover most of our day-to-day expenses.”

Mrs Felisberta Salvador, Farmer from Marara district

Buyers and farmers have to work together

“In the goat business buyers and farmers have to work hand in hand; without farmers there is no business for us, without us there is no business for farmers.”

Mr Chris Serfontein, Moz-Agri

Producing high quality goats benefits farmers

“Farmers should stop selling goats for very low prices. We as abattoirs do pay fair prices, the problem is the low goat quality that farmers supply. We have a vested interest in connecting directly with farmers, so that we can interact more with farmers about what quality the market requires and how farmers can benefit from producing higher quality goats.”

Mr Manuel Nunes, Canelfood Tete

Quality criteria and prices are better defined

“Since ‘Cabrito the Tete’ was introduced farmers have a great opportunity to benefit from markets, because quality criteria and prices are better defined. Farmers should use the brand as an opportunity to invest in quality production, knowing the prices they can expect.”

Mr Dom Luis Alfinar, Aceagrarios Tete

Consumers ask for quality products

“Farmers have land. Resources are there to significantly improve the goat business. Consumers are now more



Farmers and extension officers visiting a goat feedlot in Tete, learning about the importance of feeding the goats and selling at young age, to fetch higher prices.

diverse, they have higher purchasing power and request more quality products. Improving markets, price incentives and policy implementation are major drivers that will shape the development in Tete.”

Mr Claudio Gule, Head of Provincial Veterinary Services, Tete DPASA

High demand justifies investment in upgrading markets

“High livestock production in Marara and Changara districts justifies the investment in market infrastructure and processing facilities to meet the high demand for livestock products.”

Mr Carlos J Quembo, Head of the Agricultural Research Institute, Central zone, IIAM.

Supplementary feed of goats needs improvement

“If farmers start improving supplementary feed of goats and invest in health requirements they will be able to compete better in the market and respond to quality demands.”

Dr Filipe Vilela, IIAM, EZA Angonia

Build capacity of extension officers

“Extension services are the most critical link for farmers to understand how the markets work and what technologies would be required. Government must invest in extension officers’ capacities to support goat farming. Investments in adequate working conditions, transport facilities, communication technologies and knowledge support will pay off, as farmers will start rearing goats as a business.”

Mr Carlos Santana, Livestock Services, Tete DPASA

Livestock theft needs to be controlled

“Farmers need extension support beyond markets and technologies. For instance, livestock theft is a huge problem. It can be controlled through effective collaboration between communities and government. Extension servicers must support communities to control theft; they must link to government enforcing theft control where it is beyond communities.”

Mr Bernardino Marizane, SDAE, Marara.

Poor markets are directly interrelated to low goat quality

“Marara is a new district. We should prepare the conditions for Marara to grow to its full potential. Goat markets could be the first entry point. Poorly developed markets are directly interrelated to low goat quality. If market access would be improved and farmers would get the right technical assistance, they would work as a team and improve the quality of their goats. Thereby goat markets would allow farmers to fetch higher prices for their goats.”

Mr Titos Siteo, Administrator of Marara



Photo S Homann-Kee Tui

Mr Manuel Nunes explains goat meat quality to Mr Marizane, and a group of farmers from Marara.

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