

Entry points to stimulation of expansion in hides and skins processing: A case of Maswa District, Tanzania

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SUMMARY

A study was carried out in Maswa, Tanzania to explore potential avenues for stimulating expansion in hides and skins processing. One hundred and eighteen respondents were interviewed and the gathered information analysed using SPSS. It was observed that 89.8% of the respondents' households (HH) keep livestock with the average of 11.85 ± 1.1 , 7.34 ± 0.68 and 5.61 ± 0.88 for cattle/HH, goats/HH and sheep/HH, respectively, but 75.4% of the respondents don't sell hide or skin. Over 65.0% of the respondents use hot iron branding for animal identification. Animal slaughter was reported by 50.8% of the respondents to be done at backyard using normal knives. Sun drying on the ground, which was used by 42.4% of the respondents was found to be the major drying method. Only 3.4% of respondents add value to hides and skins by processing. Low quality of the raw material and inadequate skills were the leading constraints to industrial hides and skins processing, whereas, tick biting was the most important disease affecting hides and skins. For this status of the chain, it was proposed that a workable intervention model has to encompass placement of tanneries and slaughter slabs in the chain as new actors, linking chain actors, improving livestock services especially dipping, and reinforcing for compliance to stringent requirements regarding hides and skins production at all segments.

Keywords: livestock chains, value addition, leather industry, intervention options, Maswa district

INTRODUCTION

In recent years the government of Tanzania has increasingly been emphasizing on revival of hides and skins subsector. Since 2007 under the lead of the Ministry of Livestock Development, it has been implementing a Leather Subsector Development Strategy. The strategy capitalized on taxing raw product exportation with the objective of promoting value addition; to enhance income generation and employment creation (URT, 2008). However, insignificant growth has been realized so far as only around 60% of the produced hides and skins are collected, of which only one quarter is processed, and the processing is by 95% limited to wet blue stage (Dinh and Monga, 2013). Currently there are only two working tanneries and 13 small firms producing finished leather products employing 300 workforce at most the country-over (Dinh and Monga, 2013).

While it accounts for around 50% of the country's raw hides and skins production, the Lake Zone has currently no year-round operating firm that is producing wet blue, crust or finished leather (Dinh and Monga, 2013). Significant actors in the local leather chain include farmers, slaughter slabs, hides and skins collectors, and traders. Operations for

animal husbandry, animal slaughter as well as care and handling of hides and skins are based on basic technologies. Hides and skins tanners and leather goods producers are still very scant and generally operate with low turn-over rate. The government is the key chain supporter offering transport links, market places, electricity, extension and veterinary services. The chain operates in a framework that involves granting of licenses, charging of taxes, and regulation of animal movements with limited reinforcement of grading (Dinh and Monga, 2013).

With the mean annual sales of over 212,000 cattle and sheep and goats (shoats) heads, Maswa is among the leading districts in hides and skins production in Tanzania. In 2009 the District Council in Maswa, after realizing that the local agro-pastoralists were missing out a potentially significant source of income in leather subsector, it ventured jointly with other stakeholders on training in tanning and leather goods manufacture in which big returns to investment were realized (IIRR, 2013).

In view of the livelihood, vulnerability of the local inhabitants of the area and potential of leather value chain to offer new avenues for income generation, the Commission for Science and Technology

(COSTECH) of the United Republic of Tanzania through a project entitled ‘Leveraging Hides and Skins Technologies for Production of High Value Leather Products’ recently embarked on stimulating growth of the existing hides and skins processors to enable them produce high value leather goods. This study was a participatory situation analysis undertaken at the beginning of the implementation of the project to explore potential entry points for catalyzing growth of leather processing industry.

MATERIALS AND METHODS

Study area

This study was carried out in Maswa District, Simiyu region, Tanzania. Maswa lies between latitudes 2°45' and 3°15' South and between longitudes 33°0' and 34°7' East. Its altitude lies between 1,200 m and 1,300 m above sea level. The district has a semi-arid climate with an average annual temperature of 25°C. The rainfall pattern is unimodal with an annual average ranging between 450 mm and 1000 mm. The Maswa district has a total area of 3,398 sq. km and consists of 36 wards, 120 villages and 511 hamlets. The population density is estimated to be 109 people per sq. km. with an average house hold size of six people (MDC, 2015).

Data collection

A total of 118 households from purposively selected villages in Senani and Ipililo wards (Table 1) were selected randomly and the heads of the household interviewed using a questionnaire on hides and skins production, value addition, availability of support services and major constraints to leather industry growth. The wards and villages were selected by virtue of their high potential to produce raw hides

and skins. Senani village harbors one of the biggest livestock auctions in Maswa at which around 35 animals from within and neighbouring villages are slaughtered per week.

Table 1. Distribution of households selected in Senani and Ipililo wards in Maswa district, Simiyu region

Ward	Village	Number of households
Senani	Senani	29
	Zebeya	33
Ipililo	Bushashi	19
	Songambele	37
Total		118

Data analysis

Data were coded, entered and analysed using descriptive statistics modules of the Statistical Package for Social Sciences (SPSS, 2006) to generate frequencies, percentages, means and standard error (SE) for the variables under the study.

RESULTS

Of the 118 respondents interviewed, 99 (83.9%) were males and 19 (16.1%) were females. The majority (85.6%) of the respondents were married, others were either widows (9.3%), separated (3.4%) or single (1.7%). Most of the respondents had formal education up to primary school (78.8%) while 13.6% had no formal education, 5.1% had secondary school education, 1.7% had college education, and 0.8% had other formal education (Figure 1). The mean number of people per household was 9.73 ± 0.40.

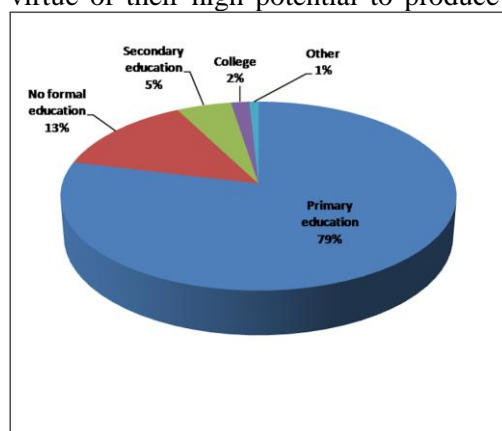


Figure 1. Education status of respondents in Senani and Ipililo wards in Maswa district, Simiyu region.

It was noted that most of the respondents (89.8%)

fall in primary production segment of hides and skins value chain (Table 2). Cropping was the major occupation and source of income, being

reported by 87.3% and 72% of the respondents, respectively (Table 2). Livestock keeping was reported by 69.5% of the respondents as the secondary occupation (Table 2).

Table 2. Major economic activities of respondents in Senani and Ipililo wards in Maswa district, Simiyu region

Variable	n	%
Category in leather chain		
Hides/skins producer	106	89.8
Hides/skins trader	1	0.8
Hides/skins processor	1	0.8
None	10	8.5
Major source of income		
Sale of crops	85	72
Sale of live cattle	11	9.3
Sale of milk	1	0.8
Other	21	17.8
Primary occupation		
Cropping	103	87.3
Livestock keeping	9	7.6
Salaried employment	3	2.5
Other	3	2.5
Secondary occupation		
Livestock keeping	82	69.5
Cropping	10	8.5
Hides/skins marketing	4	3.4
Other	22	18.6

The mean number of cattle, goats and sheep kept per household was 11.85 ± 1.1 , 7.34 ± 0.68 and 5.61 ± 0.88 , respectively. Local breeds were predominantly owned by 78.8%, 70.3% and 56.8% of respondents for cattle, goats and sheep, respectively. The majority of respondents were using their own pasture for grazing cattle (55.9%), goats (71.9%) and sheep (62.7%). However, a significant number of respondents were observed to be renting land for grazing (Table 3).

Hot iron branding (Figure 2) was the major method of livestock identification used in Senani and Ipililo

wards. It was practised by 65.4% of respondents. Very few respondents were either using ear tagging (0.8%) or ear notching (3.4%). The rest 24.6% didn't use any method of livestock identification. A number of parasites and diseases, which affects the quality of hides and skins, were reported to be prevalent in Senani and Ipililo wards (Figure 3). Among the reported parasites and diseases which affect the quality of hides and skins, tick infestation was the most important; it was reported by 67.8% of respondents in Senani and Ipililo wards.

Table 3. Main livestock grazing systems in Senani and Ipililo wards in Maswa district, Simiyu region

Grazing system	n	%
Cattle		
Communal land herders	21	17.8
Own pasture land herders	66	55.9
Rented pasture land herders	7	5.9
Non-cattle herders	24	20.3
Goats		
Goat keepers using communal land	20	22.5
Goat keepers using own pasture	64	71.9
Goat keepers using rented pasture	5	5.6
Non-goat keepers	29	24.6
Sheep		
Sheep keepers using communal land	19	28.4
Sheep keepers using own pasture	42	62.7
Sheep keepers using rented pasture	6	9.0
Non-sheep keepers	51	43.2



Figure 2. A photograph showing adult cattle in Maswa district in which hot iron branding has been used as a method of identification.

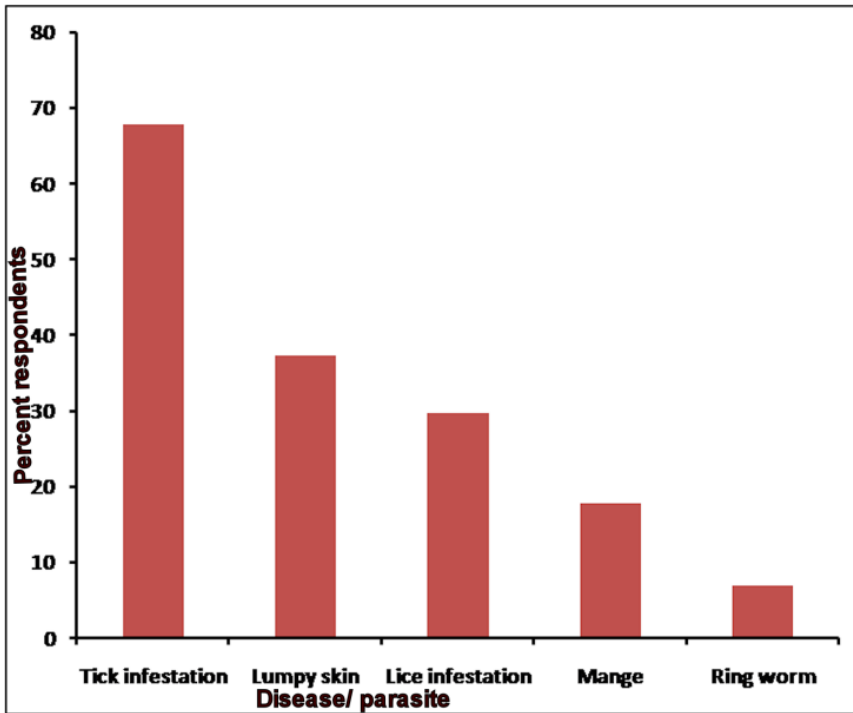


Figure 3. Parasites and diseases of importance to the quality of hides and skins reported to be prevalent in Senani and Ipililo wards in Maswa district, Simiyu region.

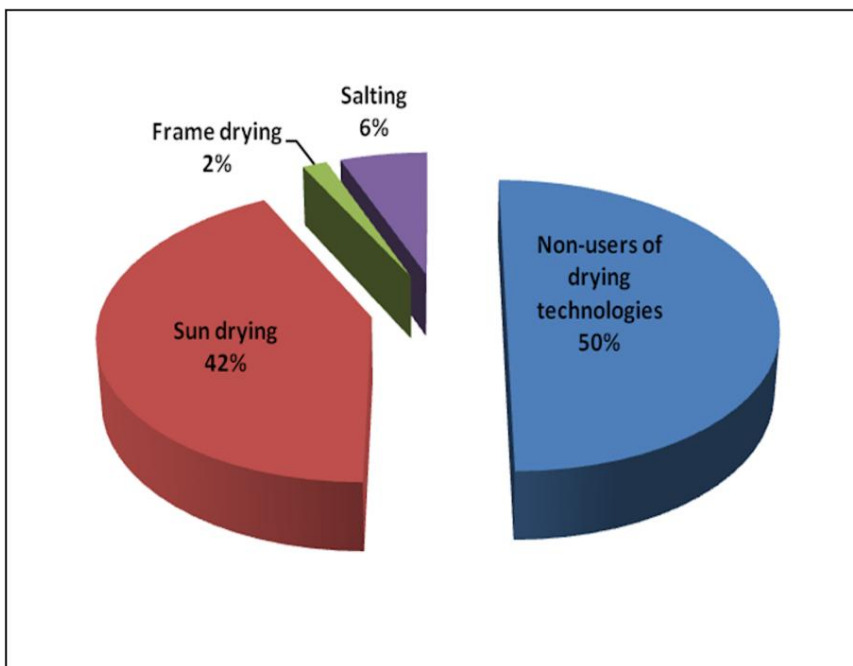


Figure 4. Various methods used for drying hides and skins in Senani and Ipililo wards in Maswa district, Simiyu region.

With regards to slaughtering, the majority (50.8%) of respondents reported slaughtering their animals at the backyard using a normal knife, while 49.2% of respondents didn't slaughter their animals. It was also noted that a greater (50.0%) proportion of respondents were not drying hides and skins, while sun-drying, salting and frame drying were reported by 42.4%, 5.9% and 1.7% of respondents, respectively (Figure 4). Majority of respondents

(75.4%) were not selling hides and skins, the rest

were selling hides and skins either at the local market (13.6%), farm gate (9.3%) or at the processors gate (1.7%) (Figure 5). Additionally, only 3.4% of respondents add value to hides and skins by processing (Table 4).

Table 4. Strategies used for value addition of hides and skins in Senani and Ipililo wards in Maswa district, Simiyu region

Strategy used for value addition	n	%
Storage	2	1.7
Transportation	14	11.8
Processing	4	3.4
Non-value addition strategy users	98	83.1

The mean number of hides and skins sold per household per year and their prices (Tshs) for the year 2015 were 0.36 ± 0.103 and 2173.7 ± 574.7 for

cattle, 0.22 ± 0.064 and 342.3 ± 84.7 for goats and 0.07 ± 0.34 and 280 ± 73.5 for sheep, respectively. Low quality of the raw material (21.2%) and lack of knowledge and skills (17.8%) on hides and skins production and processing and leather goods production were the two most important constraints to hides and skins value chain development (Figure 6). Limited availability of water and low price of the livestock by-products being reported by 14.4% and 11.9% of the respondents, respectively, are other significant constraints to hides and skins value chain development.

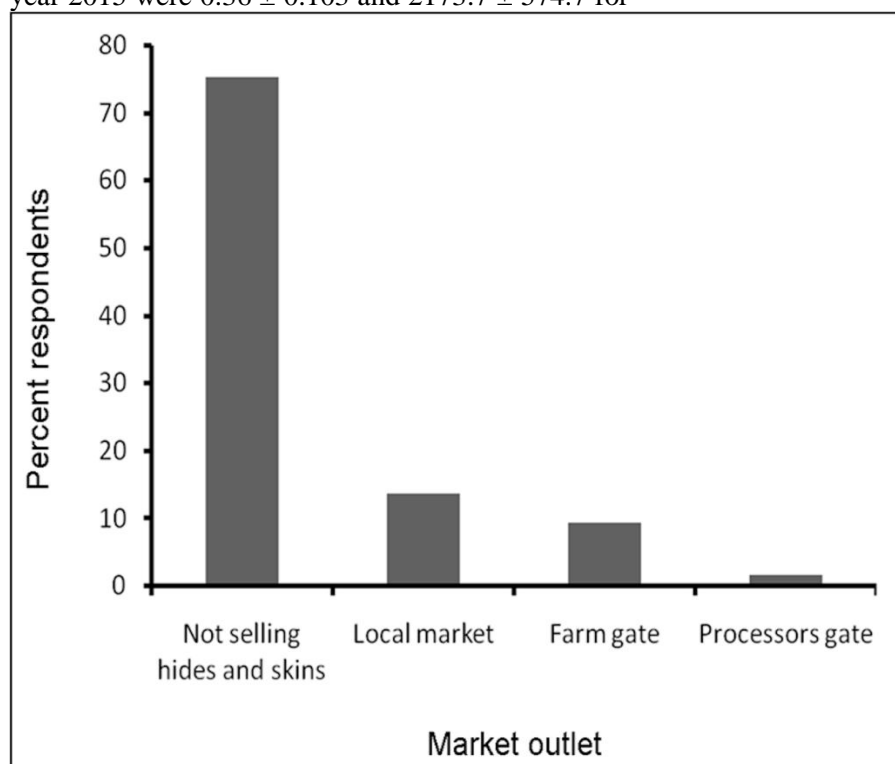


Figure 5. Market outlets used by respondents for selling hides and skins in Senani and Ipililo wards in Maswa district, Simiyu region.

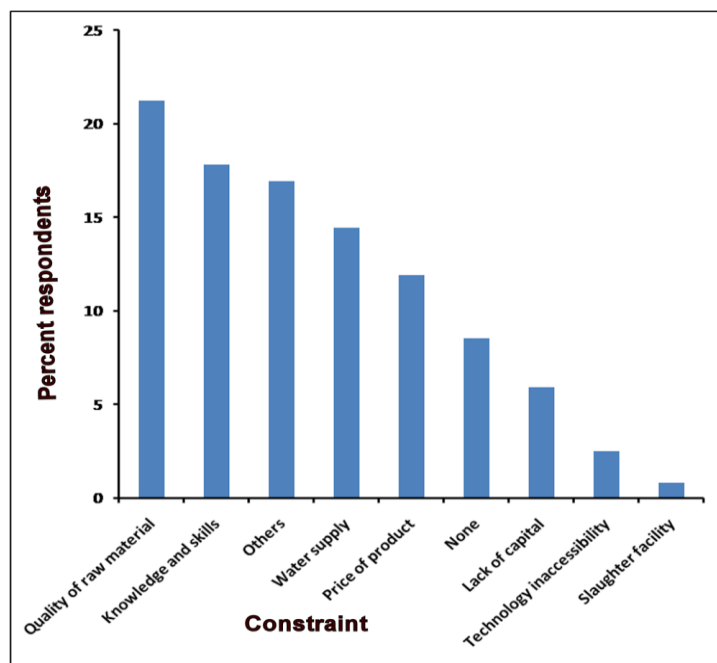


Figure 6. Major constraints to leather sub-sector in Senani and Ipililo wards in Maswa district, Simiyu region.

DISCUSSION

In Maswa district household economy rests on cropping and livestock keeping, which are the main activities formed primary and secondary occupations, respectively. These activities constituted the main source of income for majority of the households, this is consistent with a previous report by Ngowi *et al.* (2008). It was also observed that, a significant number of farmers appeared to rent land for cropping and grazing, indicating severe land scarcity and probably severe poverty. However, hides and skins appear to be a landless economic opportunities that remain untapped by the community in particular the processing segment. Key policy statements on leather subsector advocates for small and medium scale processing with the objective of creating employment opportunities for young people in rural areas (URT, 2008).

A straight way of implementing the policy is establishing rural tanneries. In order for such tanneries to operate optimistically as a segment of the whole hides and skins value chain, there are other issues related to chain actors array, support services provision and chain context to be addressed in order to ensure a viable venture (Leach and Wilson, 2009). Ensuring availability of quality raw material is the principal requirement in enabling functionality of the tanneries. Majority of the households keep livestock but most of them don't sell hides and skins suggesting that major part of the produced hides and skins are either

retained or discarded at homes, or exit the primary production segment through selling of live animals. As such, a strategy targeting improvement of hides and skins collection as input for local tanning needs has to be multi-faceted to capture the product from all these possibilities.

The present study has come up with the proposed model to establish tanneries and modernize slaughter slabs and linking them to farmers. It is postulated that the proposed articulation will increase the animals channelled to slaughter slab for slaughter within the locality. It is further anticipated that, the enhanced articulations will create strong linkage between slaughter slab and the tannery, the products in this linkage can be captured easily as raw material by tanners. As the tannery obtains a regular supply of raw materials, it will be in the position to operate at a reasonable capacity and create a stable demand for high quality raw material. If the tannery is owned by farmers, there will be a great likelihood of the tannery to set good prices for raw hides and skins. Further, it will attract hides and skins even from farmers (KIT and AGRA, 2013).

Quality deterioration of raw hides and skins was observed to be a big problem. This was mostly linked to tick biting, indiscriminate branding, and fault slaughter and drying. This is in agreement with previous report by Dinh and Monga (2013), and calls for deliberate actions targeting improvement in reinforcing compliance to guidelines regarding production and marketing of hide and skins. Further,

the discrepancies have reflection on support services to be strengthened and contextual issues to be addressed in order to create a favourable environment for enhancing compliance to relevant stringent requirements. Being in vicinity to beneficiaries and empowered by current policies as implementers of development initiatives, the local governments need to prioritize modernization of dips and slaughter slabs, persuade fair charging for services and ensuring they are used for the services sustenance. Forming platforms composing local leaders of the intervention area can aid much in increasing policy awareness and safeguarding its implementation (ICRISAT, 2011).

Identification of appropriate tanning technology is another issue of paramount importance. Installation of tanneries has to strike a balance between capacity and availability of raw material. The results of the study have shown that by sourcing raw hides and skins from auctions alone it is possible to collect more than 35 pieces of hides and skins per week. This is a supply rate that justifies opting drums as an appropriate tanning technology because smallest drums available in the market within the country are known to have a capacity of tanning a batch of 50 pieces of cattle hides in two weeks time. Besides all the proposed interventions, knowledge and skills of chain actors need to be improved through training and extension but there should also be a financing strategy and reliable input system, where value chain actors can source various materials, tools and equipment's needed for production and marketing of hides and skins.

In conclusion, this study recommends that, it is necessary to upgrade slaughter points in rural livestock auctions into well-built slaughter slabs and establish farmer-owned tanneries in rural areas as the key interventions for stimulating hides and skins processing in Maswa, and probably elsewhere in Tanzania where agro-pastoral systems is practised. It is also important for the chain actors to be well linked and the local government as the chain regulator and support services provider in vicinity to be encouraged to play its roles adequately in creating a favourable environment for the whole

chain to operate in accordance to favourable conditions that encourage farmers to engage in the business. There is also a need of developing strategies for financing the chain activities and building capacity of actors.

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