

*Full Length Research Paper*

# Assessment on the constraints of cattle supply chain management in Namibia: Case study of Omaheke communal farmers

Hangara G. N.<sup>1</sup>, Teweldemedhin M. Y.<sup>2</sup> and Groenewald I. B.<sup>3</sup>

<sup>1</sup>Student at the University of the Free State, Bloemfontein, P. O. Box 8466, Windhoek 9000 Namibia.

<sup>2</sup>Department of Agriculture, Polytechnic of Namibia, Private Bag 13388, Windhoek, Namibia.

<sup>3</sup>Centre for Sustainable Agriculture, University of the Free State, P. O. Box 339, Bloemfontein, South Africa.

Accepted 22 August, 2012

**This study examined the efficiency and constraints in the management of the cattle supply chain from farmer to processor, as well as access to market information by communal farmers in the Omaheke region of Namibia. Questionnaires were developed and semi-structured interviews were conducted with 100 farmers who were registered as cattle producers with the Meat Board of Namibia, as well as six farmers' associations, an auctioneer and a beef processor using purposive sampling. The research found that the farmers were not aware of the quality criteria used by buyers when determining prices for cattle classes and grades. Accessibility to market information was found not to be a constraint. The constraints facing the communal cattle farmers included low prices offered for cattle, buyers arriving late or not at all, slow payment processes and buyers running out of cash, whereas those found to be facing auctioneers and buyers operating in communal areas included the buying of poor-quality cattle and low numbers of cattle being offered for sale. Lack of essential and safe facilities at market outlets was identified as a constraint by cattle farmers, auctioneers and buyers. The study recommends strengthening the capacity of farmers' associations in terms of human and financial resources, the training of communal cattle farmers in managerial and marketing practices, and the provision of essential facilities at market outlets.**

**Key words:** Communal farmers, cattle, supply chain management, cattle marketing, communal areas.

## INTRODUCTION

In Namibia, cattle farming is the main agricultural production sector with an annual estimated value of US\$128 million, of which about US\$57 million (at an exchange rate of US\$1/NAM\$7.05) is contributed by exports of weaner calves. The most recent national animal census in Namibia was in 2006, and the official population of cattle at the time was estimated at 2.4 million (First Capital, 2010).

The main beef-producing regions are Omaheke, Otjozondjupa and Kunene (Coetzee, 2009; Mushendami

et al., 2008). The Omaheke communal areas are rich in livestock, and accounted for 52% of the 394 475 cattle found in the southern communal area (Directorate of Veterinary Services, 2006). Although the region is rich in cattle resources, cattle marketing in communal areas remain a challenge and is characterised by unorganised and inefficient supply chain management, low off-take, high transportation costs, and constrained market access due to poor infrastructure (Fitter et al., 2001). Lack of skills, information and organisation are also among the challenges being faced (IFAD, 2003; Mendelsohn, 2006; Mushendami et al., 2008).

In this paper, the term "supply chain" is defined as a group of organisations, activities and people who are involved in the product and/or service movement from the

---

\*Corresponding author. E-mail: [hangara76@gmail.com](mailto:hangara76@gmail.com). Tel: +264 61 230 450 or +264 81 255 0448. Fax: +264 61 240 343.

source to the end user (Yuen, 2009). Supply chain can also be described as a system that facilitates inter-enterprise co-operation and collaboration with suppliers, customers and business partners (Awad and Nassar, 2010).

Cattle farmers in the Omaheke region have few marketing channel options, namely direct marketing to abattoirs, sales through auction markets, permit days, and sales through speculators. In the case of direct marketing to abattoirs, the abattoirs slaughter the cattle for export purposes, while auctions are commonly held in communal areas and are usually organised and scheduled by auctioneers who are responsible for bringing sellers and potential buyers together. The farmer pays commission to the auctioneer, which is deducted from the selling price. In communal areas, farmers' organisations usually arrange such auctions and receive a commission from the auctioneers; Permit days only take place in communal areas south of the Veterinary Cordon Fence and involve a single buyer purchasing livestock at predetermined prices on a given day at a given venue. Speculators are middle agents who purchase livestock according to their individual needs and then supply either butcheries or feedlots in South Africa (Kruger and Lammerts-lmbuwa, 2008).

Limited access to information was identified as one of the constraints causing low cattle-market off-take in communal production systems (Coetzee et al., 2004; Makhura, 2001; Mendelsohn, 2006; Musemwa et al., 2010; Stroebel, 2004).

Communal cattle farmers lack understanding of how the market operates and are constantly complaining about low prices and their weak bargaining power. Improved cattle market participation is critical to the effort to enhance the economic growth of Namibia and improve the livelihoods of communal farmers.

In this context, the study examined the efficiency and constraints in the management of the cattle supply chain from farmer to processor, as well as access to market information by communal farmers in order to gather information that will help to improve cattle marketing systems in the four communal areas of the Omaheke region. The study focused specifically on cattle marketing, producers' satisfaction, pricing systems, accessibility of market information, distribution and transportation systems, institutional arrangements, logistical arrangements, and major constraints in the Omaheke region, drawing some policy implications from the results.

## LITERATURE REVIEW

Several determinants or factors influence the supply of cattle to domestic markets. According to Teweldemedhin (2009), the determinant in this category relates to the intervention of structures (both public and private) and their programs. In the context of Namibia, past policies

favoured "white agriculture" leading to increased income disparities, and inequitable access to resources, inputs and markets (Mendelsohn, 2006).

Uncertainty is another determinant and it involves aspects such as price uncertainty; political developments (within the country, within neighbouring countries and globally); availability of export markets; exchange rate; and fluctuations in currencies, environmental and climatic conditions (Mushendami et al., 2008; Kuvare et al., 2008; Mendelsohn, 2006). In Namibia the supply capacity affected namely by production costs, climate conditions, access to market information, number of cattle owned, off-farm income, infrastructure, educational level and producers objective

### Production costs

The most common categories of production costs for beef cattle industry may include purchased feed and supplements, raised feed, grazing, cattle, indirect, and interest costs (Ricketts and Rawlins, 2001). In the beef cattle industry, production costs are constantly fluctuating due to weather conditions, feedstuff and input prices, animal performance, domestic and export markets, technology, and agricultural policies. The Meat Board (2007) reported that Namibia's on-hoof marketing of cattle and export of chilled and frozen de-boned cuts and frozen de-boned cuts to South Africa has been on a declining trend since 2005. This decline can be associated with the high feedlot input costs which lead to low weaner prices (Meat Board, 2007). Both Mushendami et al. (2008) and Mendelsohn (2006) conclude that due to high transaction costs, the total production costs increase and income realised decreases with an increase in distance from service and information centres.

### Climatic conditions

Communal farmers in Namibia are confronted with a harsh uncompromising natural environment, incipient drought, and progressive natural degradation (Mushendami et al., 2008; Kuvare et al., 2008; Carbera et al., 2007; Mendelsohn, 2006).

### Access to market information

A farmer uses market information such as trends, market conditions, type of product in demand, quality, quantity, price and market opportunities to make crucial management decisions and direct the farming operations (Coetzee et al., 2004; Stroebel, 2004). Makhura (2001) identified access to market information as an important determinant of market participation. The proximity to market information centres influence both production costs

and income derived from agricultural produce (Mendelsohn, 2006). Provision of market information thus will make markets more accessible (Montshwe, 2006).

### Number of cattle owned

Participation in the marketing system has more to do with the number of cattle owned (Mendelsohn, 2006). In support of this view, Heierli and Gass (2001) stated that ownership of productive assets such as cattle can pave the way for participation in economic activities.

### Off-farm income

According to Mendelsohn (2006), the majority of farmers in Namibian communal areas depend on off-farm sources for additional income and valuable safety nets. Off-farm remittances greatly influence livestock disposals, and as a typical example, access to other sources of income such as from social grants and employment may lead to the farmers not selling cattle to meet daily needs and production costs (Nthakheni, 2006). Off-farm income is a good injection to livestock farming (Teweldemedhin and Kafidi, 2009)

### Infrastructural obstacles

Remote locations with poor state of roads results in high costs of moving livestock to markets and hinder marketing efficiency (Mendelsohn, 2006). The shortcomings of infrastructure seriously impede the physical flow of livestock to market (Mendelsohn, 2006). The major problems identified by Mendelsohn (2006) hindering market participation in communal areas of Namibia are lack of adequate transport and poor marketing infrastructure.

### Education levels of producers

The levels of producer education and awareness play a great role in market participation. Stroebel (2004) emphasises the importance of strengthening awareness creation of marketing issues in the extension service. Related to education, producers who are literate are able to interpret market information and adopt new technologies to meet the market demands (Nthakheni, 2006).

### Producers' objectives

Communal farmer production objective may be geared towards keeping cattle as sources of milk, blood, dung, meat, security, or status, and therefore cattle depending on the producer's objective are sold at ad hoc when the need for cash arise rather to maximise income

(Mendelsohn, 2006).

## DATA AND METHODOLOGY

### General

This study applied Rapid Rural Appraisal (RRA) techniques, including a questionnaire, which was administered through purposive sampling to 100 communal farmers and eight key informants of farmers' associations and farmers' co-operatives, an auctioneer and a beef processor involved in cattle marketing in the Omaheke Region. RRA in general is more commonly described as a systematic but semi-structured activity out in the field by a multidisciplinary team and is designed to obtain new information. Using records kept by farmers' associations, a sample of 25 farmers who were selling cattle four or more times per year were deliberately selected from each of the four communal areas and then interviewed.

Following Leedy and Armrod (2000), the respondents were chosen for a particular purpose on the basis of their involvement in cattle marketing and the fact that they were "typical" of a group or representative of diverse perspectives on an issue. Since these farmers and key informants were located or operational in the Omaheke region, they were most likely to represent the local population.

### Data collection

The data collection process involved a group of trained enumerators and was conducted over a period of two months, namely October and November, in 2009. The following variables were included: main reason for selling cattle; marketing channel options; pricing of various cattle classes and grades; access to market information; market information channel (medium); distance to markets; cattle transportation modes; logistical arrangements prior to marketing; and institutional arrangements.

### Statistical analysis

Data from the questionnaires was captured on an MS Excel spreadsheet, and descriptive results analysis was done by means of Statistical Package for Social Sciences Version 16 (SPSS, 2010). Data analysis included the description of the characteristics of the respondents using descriptive statistics such as mean, frequency distribution in tables and percentages.

### Study area

The study was carried out in four communal areas of the Omaheke region, namely Epukiro, Otjinene, Otjombinde and Aminius. The Omaheke region is one of Namibia's 13 political regions demarcated by the Second Delimitation Commission of 1988 and is located in the eastern part of the country (National Planning Commission, 2006). Furthermore, Namibia is divided into four foot-and-mouth disease (FMD) control zones: the infected zone, buffer zone, surveillance zone and free zone, with the Omaheke region falling within the free zone (Kruger and Lammerts-Imbuwa, 2008). Namibia has a total land area of 84 612 km<sup>2</sup>, and this region occupies 10.3% of the country's total land surface (National Programme for Food Security, 2007). The Omaheke region occupies the eastern-central part of Namibia bordering on Botswana, and cattle ranching is the dominant economic activity

**Table 1.** Farmers' reasons for selling their cattle.

Characteristic	Aminius	Epukiro	Otjinene	Otjombinde
<b>Main reason for selling cattle (%)</b>				
Cash to buy food and basic necessities	16/25 (64%)	25/25 (100%)	25/25 (100%)	16/25 (64%)
Cash to cover costs of festivals, funerals & rituals	9/25 (36%)	0	0	7/25 (28%)
Cash to buy production inputs	0	0	0	2/25 (8%)

**Table 2.** Marketing channel options and number of cattle sold by individual farmers (n=570).

Characteristic	Aminius	Epukiro	Otjinene	Otjombinde
<b>n</b>	190	120	160	100
<b>Marketing channel option</b>				
Permits organised by farmers' associations	0	69/120 (57.5%)	1/160 (0.6%)	99/100 (99%)
Permits organised by private buyers	0	45/120 (37.5%)	0	1/100 (1%)
Auctions organised by farmers' associations	182/190 (95.8%)	3/120 (2.5%)	149/160 (93.1%)	0
Meatco	4/190 (2.1%)	0	21/160 (1.3%)	0
Other	4/190 (2.1%)	3/120 (2.5%)	8/160 (5%)	0
<b>Number of cattle sold per year</b>				
<10	84/190 (44.2%)	63/120 (52.5%)	107/160 (66.9%)	53/100 (53%)
10 – 19	55/190 (28.9%)	38/120 (31.7%)	30/160 (18.8%)	33/100 (33%)
20 – 30	31/190 (16.3%)	9/120 (7.5%)	10/160 (6.3%)	10/100 (10%)
>30	14/190 (7.4%)	7/120 (5.8%)	0	2/100 (2%)
Don't know	0	2/120 (1.7%)	0	0
Not applicable*	6/190 (3.2%)	1/120 (0.8%)	13/160 (8.1%)	2/100 (2%)

\*Refers to those farmers that do not sell cattle at all.

(Coetzee, 2009).

## RESULTS AND DISCUSSION

### Cattle marketing

Cattle are sold by communal farmers for a variety of reasons. The respondents were asked to name their reasons for selling their cattle, and from the results summarised in Table 1. It can be seen that the majority of respondents are selling their cattle to generate cash for the purchasing of food and basic necessities. Respondents from the Aminius (36%) and Otjombinde (28%) areas were selling their cattle to generate cash to cover the costs of festivals, funerals and rituals. It was only in the Otjombinde area that respondents were selling their cattle to generate cash for the purchasing of production inputs, meaning that in the other three study areas, farmers were using off-farm income to purchase production inputs.

The type of cattle offered for sale seemed to depend on the type of cattle the farmers were prepared to sell. The majority (85%) of respondents stated that they preferred to sell steers (1-3 years), while the other cattle categories jointly comprised 15%. This marketing trend is

in agreement with the findings of Metzger (1994) who reported that farmers in the Omaheke communal areas are weaner producers.

Communal cattle farmers have two options when it comes to marketing channels, namely formal and informal markets. The formal market involves selling at auctions and through permits and to export abattoirs, while the informal route involves selling to fellow farmers, small butcheries and individual speculators. As shown in Table 2, more than 93% of farmers from the Aminius and Otjinene areas were using auctions, whereas only 2.5% of farmers in the Epukiro area and no farmers in the Otjombinde area were making use of this option. The decision to sell through auctions or permits or to export abattoirs is squarely decided by the respective farmers' association in consultation with the farmers in that particular study area. The demand-and-supply mechanisms determine the price offered, and competition between buyers results in better prices (Kruger and Lammerts-lmbuwa, 2008). Permits organised by the farmers' associations were the preferred option in Epukiro and Otjombinde, accounting for 57.5 and 99% respectively, whereas in the other two study areas (Aminius and Otjinene) almost no farmers expressed preference for this option. Permits organised by private

**Table 3.** Farmers' level of satisfaction with existing cattle market (n=570).

Scale	Very satisfied	Fairly satisfied	Not satisfied
Percentage	19/570 (3.3%)	176/570 (30.9%)	375/570 (65.8%)

**Table 4.** Farmers' awareness of buyers' quality criteria (n=100).

Awareness of buyers' quality criteria (%)	Aminius	Epukiro	Otjinene	Otjombinde	Study areas (average %)
n	25	25	25	25	
Yes	13/25 (52%)	5/25 (20%)	6/25 (24%)	13/25 (52%)	37%
No	12/25 (48%)	20/25 (80%)	19/25 (76%)	12/25 (48%)	63%

buyers was the preferred option for 37.5% of farmers in Epukiro but for almost no farmers in the other study areas. Selling to export abattoirs was selected by less than 2.2% of respondents overall, with none of those respondents coming from the Epukiro and Otjombinde areas.

Under the current marketing channel options, the majority of respondents (53.9%) were selling fewer than 10 cattle annually.

The respondents were asked to give an assessment of their satisfaction level relating to the existing cattle market on a three-point scale, varying from one (not satisfied) to three (very satisfied). The survey revealed that the majority of farmers (65.8%), as shown in Table 3, were not satisfied with the existing market, because private buyers (according to 92%) were setting the market prices for their cattle. The farmers had no bargaining power at all, which might be the reason for the low cattle off-take in the study areas. This implies that farmers are hardest hit by inflation, because buyers have ways to adjust prices to cover inflation by offering low purchasing prices to farmers and charging high prices to consumers.

The off-take is bound to be influenced by the price that cattle farmers are offered or expect to receive. The respondents complained about the low market prices being offered for their livestock, further arguing that they themselves were not setting the price for their livestock. The majority (78%) of respondents indicated that the cattle buyers determine the prices for cattle classes and grades. The most important characteristics according to which live cattle and beef carcasses are graded are weight, age of the animal, fatness of the carcass, conformation of carcass and sex (Kruger and Lammerts-Imbuwa, 2008). The classifications A, AB, B and C are indications of age, while grades 0, 1, 2, 3, 4, 5 and 6 indicate the thickness of subcutaneous fat. There are five conformation types that vary from 1 (very flat) to 5 (very round), with the market preferring conformation types 3 (medium), 4 (round) and 5 (very round) respectively.

In support of the views expressed by the cattle farmers, the auctioneer who was interviewed indicated that at auctions, a farmer has the right to accept a price or to withdraw his livestock, depending on his satisfaction with the price offered by the buyer. In terms of selling to export abattoirs, both the auctioneer and the processor who were interviewed confirmed that a farmer does not have the power to change the price offered.

In an attempt to assess the respondents' awareness of the buyers' quality criteria, they were asked to give an indication of whether or not they were aware of the quality criteria. Table 4 shows that the majority (63%) of respondents were not aware of the buyers' quality criteria used when determining prices for cattle classes and grades.

Comparing the four study areas, farmers from Epukiro (80%) and Otjinene (76%) were found to be unaware of the quality criteria. With regard to Aminius and Otjombinde, 52% of respondents were aware of the quality criteria; however, a larger proportion (48%) of respondents were completely unaware of the criteria. On the contrary, regional representatives of Karoo Ochse (an auctioneering company) and Meat Corporation of Namibia (a processing company) indicated in interviews that the communal farmers were fully aware of the buyers' quality criteria.

This clearly shows that there is a communication gap between buyers and sellers, and thus there is need to improve communication between these two groups. Furthermore, the auctioneers and export abattoirs need to do more to increase farmers' awareness of quality criteria and assist farmers to select breeds that will fetch better prices, thus allowing both parties to benefit from this strategy and enabling cattle farming to contribute to the economy. It is also important to invite all stakeholders to play an important role in improving beef production in the country so that Namibia's Vision 2030 can be achieved and so that cattle farming can be transformed into a more commercialised enterprise, thus creating more job opportunities.

**Table 5.** Distance covered to cattle market outlets (n=570).

Scale	<10 km	10-30 km	31-50 km	>50 km	Don't know
Percentage	70/570 (12.3%)	349/570 (61.2%)	110/570 (19.2%)	33/570 (5.8%)	6/570 (1.1%)

**Table 6.** Means of transportation used to access cattle markets (n=100).

Characteristic	Aminius	Epukiro	Otjinene	Otjombinde
n	25	25	25	25
<b>Transport to markets within communal areas (%)</b>				
Driving cattle on foot	0	2/25 (8%)	1/25 (4%)	1/25 (4%)
Driving cattle using horses / donkeys	2/25 (8%)	1/25 (4%)	0	0
Hiring vehicles	0	0	1/25 (4%)	11/25 (44%)
Using own vehicles	2/25 (8%)	0	0	0
Combination of transport modes	21/25 (84%)	22/25 (88%)	23/25 (92%)	13/25 (52%)
<b>Transport to markets outside communal areas (%)</b>				
Hiring vehicles	4/25 (16%)	7/25 (28%)	3/25 (12%)	23/25 (92%)
Not selling	21/25 (84%)	18/25 (72%)	22/25 (88%)	2/25 (8%)

### Access to market information

In response to a question about the source of information on cattle markets, 87% of respondents identified farmers' associations as the main source of cattle market information. The farmers' associations make important announcements of sales event dates, venues and prices for different cattle categories. A compatible information channel enhances communication, reduces risk and supports the efficient transfer of information, and when asked to give an assessment of the most appropriate channel or medium for communicating market information to farmers in the study areas, 93% of respondents rated the radio as the most important medium. Farmers' associations were ranked second, followed by cellular phone services, strategically placed information posters, word of mouth, newspapers, and internet-related services.

### Distribution and transportation system

#### Distance to market

Livestock marketing facilities are located at strategic places in the study areas, and the distance to these outlets vary from one village to the next within each study area. The farmers' responses to the question about distance to the cattle market outlets are shown in Table 5. The majority (61.2%) of respondents indicated that the average distance from their village to the nearest market outlet ranged between 10 and 30 km. As shown in Table

5, most farmers were making use of the market outlets within the 50 km range. The low response rate for distances exceeding 50 km is an indication that only a small fraction of communal farmers were accessing markets outside the communal (study) areas.

#### Transportation to local markets

Table 6 summarises the means of transportation to internal markets in the study areas. The farmers were making use of a combination of transport modes to access internal markets within the study areas, including driving their cattle to the marketplace on foot, or using horses, donkeys and vehicles. Such combinations of transport modes in the study areas were used by more than 84% of respondents (with the exception of farmers in Otjombinde, accounting for 52%). Hired vehicles were used by 44% of Otjombinde farmers, with less than 10% making use of the remaining modes of transport. This implies that transportation could be a major constraint to farmers when it comes to increasing their sales capacity.

In terms of modes of transport to markets outside the communal areas, as shown in Table 6, the bulk of respondents (>70%) in all areas, with the exception of Otjombinde, indicated that they did not sell their cattle to markets outside the study areas (mainly export abattoirs). This could be due to either high transportation costs or limited transport to such outside markets. This shows that improving the transportation system is a critical factor in improving the supply response to market. It is not only the farmers that would benefit from improved

**Table 7.** Marketing planning by farmers (n=100).

Characteristic	Aminius	Epukiro	Otjinene	Otjombinde	Study areas (average %)
n	25	25	25	25	
<b>Do you have a marketing plan in place? (%)</b>					
Yes	13/25 (52%)	14/25 (56%)	8/25 (32%)	10/25 (40%)	11.25/25 (45%)
No	12/25 (48%)	11/25 (44%)	17/25 (68%)	15/25 (60%)	13.75/25 (55%)

transportation, but also consumers in terms of the accessibility, availability and affordability of beef products. This could also improve food security in the country, leading to greater competitiveness in the Namibian beef industry.

When and why an industry is internationally competitive and how sustainable is this position (Teweldemedhin, 2009)? In order to find answers to these questions, a third question as posed by Porter (1990) must first be addressed: Why does an economy achieve international success in a particular firm? According to Porter (1990), the answer lies in six broad criteria or attributes that shape the environment in which firms compete and promote the creation of competitive advantage. These attributes include improved demand conditions, supporting industries, firm strategy, and government policies. Competitiveness is a result of the interaction of a number of factors, which can be grouped into two categories: those that affect the firm's relative cost of production (including infrastructure, information and easy access to the market) and those that affect quality, or perceived quality (Teweldemedhin, 2009). Furthermore, an Industry's or firm's operating practices and strategies, as well as the business inputs, infrastructure, institutions and policies, constitute the business environment. All these factors are interrelated and have a bearing on the improvement of accessibility to market and the ability to move to a more sophisticated way of competing (Teweldemedhin, 2009).

Porter (1990) indicated that competitiveness is affected by four ingredients that lead to a national comparative advantage, namely:

- Availability of resources and skills,
- Information that firms use to decide which opportunities to pursue with those resources and skills,
- The goals of individuals in companies; and
- The pressure on companies to innovate and invest.

### Logistical arrangements prior to marketing

A series of logistical arrangements need to be in place prior the marketing of cattle, including setting a marketing plan, conforming to statutory requirements in terms vaccinations, branding and ear-tagging, acquiring movement permits and arranging transport. In an effort to assess whether the respondents were setting up marketing plans

in advance, they were asked to indicate whether they had a marketing plan in place. Drawing up a marketing plan entails studying the market and enables a farmer to decide on where and how many cattle to sell, as well as when the farmer can expect the highest profit. As shown in Table 7, more than 45% of respondents had no prior marketing plans in place, implying that they were selling their animals as and when the need arose without considering the production or marketing opportunities. Farmers from Aminius (52%) and Epukiro (56%) did claim to do advance marketing planning. This implies that with the support of government and other industry stakeholders, there is room for improvement.

However, as indicated in Tables 6 and 7, means of transportation and marketing plans by farmers are lacking leaving producers neither competitive nor in a sustained position in terms of market supply response.

When further query was made to assess whether the farmers are following the statutory requirements such as vaccinations, branding and ear-tagging, completion of necessary FANMEAT documentation and obtaining movement permits prior to marketing their cattle, 87% of respondents fulfil this requirement.

### Institutional arrangements

Figure 1 shows the strategies indicated by the respondents as means to increase the supply of cattle to the market. The majority (56%) of respondents identified the offering of market-related prices as the most important strategy to increase the supply of cattle to the market (Figure 1). Having a limited number of auctions to create demand for cattle was ranked second with 7%, while farmers' education in managerial practices, farmers' education in marketing practices, erection of marketing facilities and distribution of yearly marketing calendars in villages were ranked third with 5% each. The offering of market-related prices has to do with the capacity of the farmers' associations and co-operatives in the study areas to bargain with cattle buyers. For the cattle farmers to receive market-related prices, the cattle market in the study areas should be determined by supply and demand. This will be achieved through having a limited number of auctions or permits in the study areas so as to create demand for cattle in the market and through offering a large number of cattle for sale so as to attract

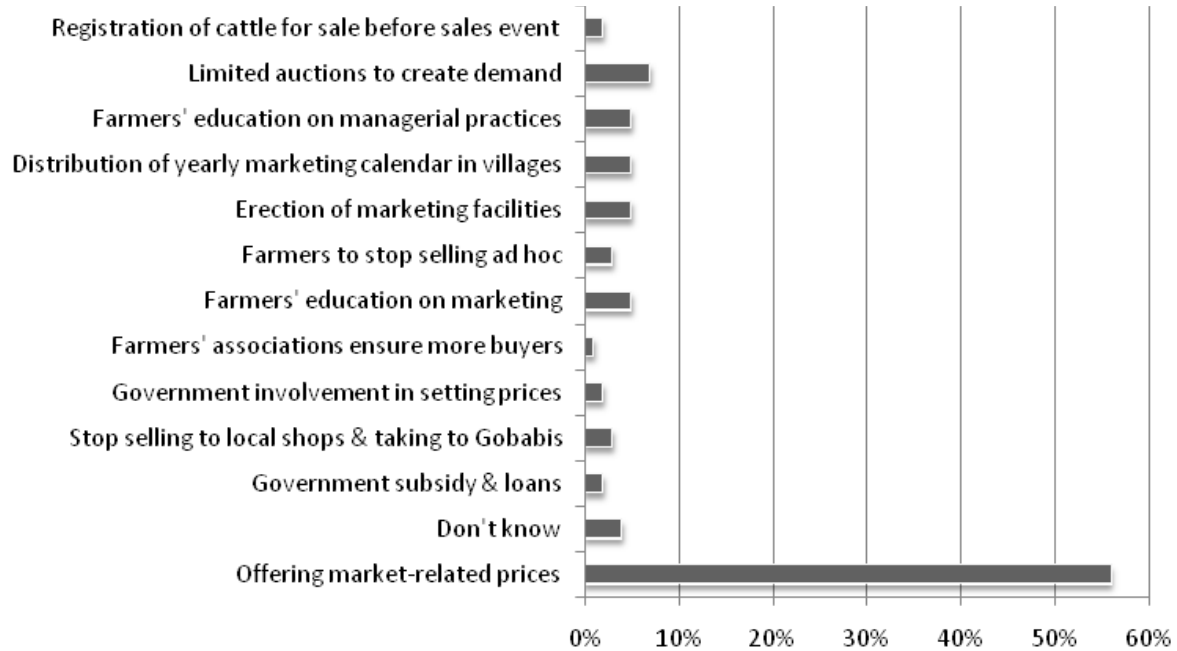


Figure 1. Strategies to increase the supply of cattle from communal areas to the market.

many buyers.

**Major constraints to cattle marketing**

**Constraints faced by farmers when marketing cattle**

The price offered for cattle was identified as the most significant constraint for the majority of cattle farmers in the study areas. A total of 28% of respondents felt that they should be setting their own prices for their cattle, whereas 16% indicated the lack of essential facilities at market outlets as a constraint. Other prominent constraints identified, each of which accounted for 8%, were buyers arriving late or not at all, slow payment processes, and buyers running out of cash. The low prices offered have to do with the bargaining power of the farmers' associations or farmers' co-operatives when negotiating with buyers. The essential facilities lacking at market outlets include toilets and shade. The slow payment process results from the manual verification and payment method employed. There are no banking facilities in the communal areas, with the exception of Aminius, meaning that if a buyer runs out of cash, the only option is to drive to the town of Gobabis, which is approximately 200 km away, and in most cases the farmers collect their money the following day. Through this scenario, farmers incur extra costs in terms of transport and meals.

The respondents were then asked to give their views on how the constraints experienced by communal farmers when marketing their cattle can be addressed. The majority (48%) of farmers indicated that regular meetings

should be held between stakeholders to discuss common problems. The need to improve institutional arrangements was identified by 22% of respondents, followed by 17% of respondents indicating that the market should be determined by supply and demand. The training of farmers in marketing techniques was proposed by 12% of the respondents. The improvement of institutional arrangements should include the construction of essential facilities and services at market outlets, the provision of banking facilities, the establishment of community police to curb stock theft and crime at market outlets, and the timely announcement of sale events and prices on offer per cattle category. To enable the cattle market to be governed by demand and supply, the farmers' associations should strive towards holding limited auctions and having many buyers at each auction.

**Auctioneers and buyers constraints**

The constraints faced by auctioneers and buyers operating in the study areas were identified by the respondents as follows: buying of poor-quality cattle (14%), lack of essential and safe facilities at market outlets (14%), low number of cattle offered for sale (13%), distance to market outlets (6%), late delivery of cattle to market outlets (5%), buying of diseased cattle (5%) and price disputes (5%). Furthermore, 35% of respondents indicated that they had no idea of the constraints faced by auctioneers and buyers.

After listing the constraints, the respondents were asked to indicate how these constraints could be



addressed. In response, 40% of respondents identified the provision of training to farmers as a possible solution. A large proportion of respondents (33%) indicated that they had no idea, while 18% indicated the need to improve institutional arrangements, 5% indicated that regular meetings should be held between stakeholders to address the constraints, and 4% indicated that the market should be determined by supply and demand. Farmers' training should focus on the required quality of cattle and the operations of buyers. The improvement of institutional arrangements should include the construction of essential facilities and services at market outlets, the inspection of cattle prior to marketing, the tarring of roads, and strict regulations on cattle delivery. The timely announcement of market prices by farmers' associations would enable the cattle market to be governed by supply and demand.

### Conclusion

Understanding and knowing what the market wants is important. The study revealed that the majority of farmers were not aware of the quality criteria used by buyers when determining prices for cattle classes and grades. Accessibility to market information was found not to be a constraint. The major constraints facing the communal cattle farmers include low prices offered for cattle, buyers arriving late or not at all, slow payment processes and buyers running out of cash, whereas the constraints found to be facing auctioneers and buyers operating in communal areas include the buying of poor-quality cattle and the low number of cattle offered for sale. Lack of essential and safe facilities at market outlets was identified as a constraint by cattle farmers, auctioneers and buyers in the study areas.

The study recommends the training of communal cattle farmers in managerial and marketing practices so as to enable farmers to produce cattle of the quality required by the market and to allow farmers to understand how the market operates and how prices are determined. The farmers' associations and co-operatives play a crucial role in cattle marketing in communal areas and should be strengthened in terms of human and financial resources. There is a greater need for the improvement of institutional arrangements in order to increase the supply of cattle from the communal areas to the market. The improvement of institutional arrangements should include the provision of essential facilities and services at market outlets, the inspection of cattle prior to marketing, the tarring of roads, and strict regulations on cattle delivery. Finally, market prices for the various cattle categories should be announced in a timely manner by farmers' associations to enable the cattle market to be governed by supply and demand.

### REFERENCES

- Awad HAH, Nassar MO (2010). Supply chain integration: Definition and challenges. *Proc. Int. Multiconf. Eng. Comput. Sci.* 1:17-19. Hong Kong. pp. 405-409.
- Coetzee L, Montshwe BD, Jooste A (2004). The marketing of livestock on communal lands in the Eastern Cape Province: Constraints, challenges and implications for the extension services. *South Afr. J. Agric. Ext.* 34(1):81-103.
- Coetzee ME (2009). Chemical characterization of the soils of east-central Namibia. Unpublished MSc Agriculture Dissertation. Stellenbosch University, Stellenbosch. pp. 1-20.
- Directorate of Veterinary Services (2006). *Livestock census 2006*. Windhoek: Ministry of Agriculture, Water and Forestry.
- First Capital (2010). *Namibia economic outlook report 2010*. Windhoek: First Capital. pp. 20-21.
- Fitter JC, Kressler RF, Kroll T, Kruger T, Neumann NPK, Werner W (2001). Coping in a fragile environment: The SARDEP experience. *Sustainable Animal and Range Development Programme*. Windhoek: Ministry of Agriculture, Water and Rural Development. pp. 98.
- IFAD (International Fund for Agricultural Development) (2003). Promoting market success for the rural poor in order to achieve the Millennium Development Goals. Discussion paper at the IFAD conference. Rome, Italy. Available online at: <http://www.ifad.org/gbdocs/gc/26/e/markets.pdf> (Accessed on 4 March 2010).
- Kruger B, Lammerts-Imbuwa L (2008). Training manual: Livestock marketing in Namibia. Windhoek: NNFU. pp. 6-56.
- Leedy P, Armrod JE (2000). *Research planning and design*. Upper Saddle River, NJ: Prentice Hall. pp. 49-50.
- Makhura M (2001). Overcoming transaction cost barriers to market participation of smallholder farmers in the Northern Province of South Africa. Unpublished PhD Thesis, University of Pretoria, Pretoria. pp. 72-160.
- Mendelsohn J (2006). *Farming systems in Namibia*. Windhoek: NNFU. pp. 7-71.
- Metzger D (1994). *Livestock Sector Study for the Hereroland and Namaland*. Ministry of Agriculture, Water and Rural Development; Deutsche Gesellschaft Fur Technische Zusammenarbeit (GTZ), Windhoek.
- Musemwa L, Mushunje A, Chimonyo M, Mapiye C (2010). Low cattle market off-take rates in communal production systems of South Africa: Causes and mitigation strategies. *J. Sustain Dev. Afr.* 12(5):209-226.
- Mushendami P, Biwa B, Gaomab II M (2008). Unleashing the potential of the agricultural sector in Namibia. *Bank of Namibia Occasional Paper OP 1-2008*. Windhoek: BoN. pp. 22-24.
- National Planning Commission (2006). *Omaheke regional poverty profile: based on village-level participatory poverty assessments*. Windhoek: Government of Namibia. pp. 6-10.
- National Programme for Food Security (2007). *National Programme for Food Security – Draft Report*. Windhoek: MAWF / FAO. p. 2.
- Porter ME (1990). *The competitive advantage of nations*. London: Macmillan. pp. 260-281.
- SPSS (2010). *Introduction to SPSS (Version 16) for Windows (spss16-2): Practical workbook*. Bristol: University of Bristol. pp.151-164.
- Stroebel A (2004). Socio-economic complexities of smallholder resource-poor ruminant livestock production systems in Sub-Saharan Africa. PhD Thesis. Bloemfontein: University of the Free State. pp. 37-159.
- Teweldemedhin MY (2009). Implications of trade liberalisation and economic growth for South African agricultural industries. Ph.D Thesis. Bloemfontein: University of the Free State. pp. 129-134.
- Yuen CL (2009). Critical factors affecting trust and technology diffusion within the Queensland cattle supply chain. Master's Dissertation. Toowoomba: University of Southern Queensland. p. 11