ASSESSMENT OF COST AND RETURNS OF CATTLE MARKETING IN CENTRAL ZONE OF ADAMAWA STATE, NIGERIA.

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ABSTRACT: *The study was to assess the cost and returns in cattle marketing in central Adamawa State, Nigeria. Data for this study were collected from activities of cattle marketer for the year 2012. The data were collected using structured questionnaire. One hundred and twenty (120) Cattle marketers were administered with questionnaires. A total of Ninety questionnaires were used for analyzed. However, both descriptive (frequency, percentage and mean) and inferential statistics was used for analyzing the data generated from the study. Analysis of the structure and performance of cattle marketers was done using Gini coefficient and marketing margin analysis. The results obtained from the study revealed that, performance of cattle marketers which was analyzed using marketing margin techniques was found to be 9.09 percent. This indicates that, marketers obtained 9.09 percent of the final sales which is paid by the consumers. Also, the analysis of seller concentration of cattle marketing shows that, a Gini coefficient of 0.65 was obtained. The relatively high Gini coefficient which by the analysis tends to approach one (1) is a clear indication of inequality in earnings from the sales of the animals and high marketing concentration. The study therefore recommends that, marketers should form / strengthening their associations and cooperatives for extensive information sharing and in-leading between and among members, government at all levels should also be willing to provide information to marketers and researchers so as to help in addressing the problems associated with cattle marketing for necessary support and legislations*

KEY WORDS*: Assessment, Cost, Returns, Cattle, Marketing***.**

INTRODUCTION

Agricultural production is a multidisciplinary system with a complex structure comprising over 10 economy branches *Kolosov, et al, (2013)*. At the same time plant growing and livestock farming (cattle, sheep and goat) are the main structuring industries (Yali, *et al*, 2011; Umeh, *et al*, 2011). However, Livestock breeding and other related activities is one of the most important sectors of agriculture providing the population with food and essential raw materials supplying many branches of the industry including processing, marketing, as well as raw material to the manufacturing industries, Endris, et al, 2011. The sound management and conservation of this resource is one of the priority issues of the global strategy for sustainable development *Kolosov, et al, 2013*.

In Nigeria therefore, cattle is one of the major protein suppliers to its populace and the world as a whole. Nigeria has population of about 34.5million goats, 22.1million sheep and 13.9million cattle   Lawal-Adebowale (2012). The larger proportion of these animals' population are however largely concentrated in the northern region of the country than the southern part. Specifically, about 90 percent of the country's cattle population and 70 percent

of the sheep and goat populations are concentrated in the northern region of the country. Concentration of Nigeria's livestock-based in the northern region is most likely to have been influenced by the ecological condition of the region which is characterized by low rainfall duration, lighter sandy soils and longer dry season Lawal-Adebowale (2012). Hence, markets and marketing activities are very essential for the distribution of the cattle to the final consumers. Cattle are one of the major components of livestock existing in Adamawa State. Aside being multiplied and sold to generate income, it has wider usage thus, help in the production of beef, hide and skin, Agricultural manure as well as source of transport for the movement of agricultural products from one location to the other. Similarly, it helps to provide power for the tilling of soil. Cattle are also fattened and sold, cross-breed to improved carcass weight, produce Agricultural manure. It also, serves as a source of milk and cheese. The bones and blood are also used as part of ingredients needed for the production of chicken feeds among others.

Marketing of cattle just like in any other market in the state is a crucial human invention. It embraces the activities engaged in order to satisfy the economic needs and wants of the people. With these perspectives, cattle marketing can be said to be the performance of all business activities which direct the smooth flow of cattle between breeders, fatteners, sellers and consumers so as to accomplish the producer's objectives. Marketing is a function of so many factors among which include; pricing, transportation, financing and risk bearing. According to Rewoldt (1977), marketing can better be described as those activities involved in getting goods and services from the producers to the consumers. These definitions see marketing as essentially a bridge between two other economic functions. Its purpose is to make it possible for the utilities created by the production process to meet the ultimate economic purpose of serving the consumption process. Kohls and Uhl, (1985), also looked at marketing as the performance of all business involved in the flow of goods and services from the point of initial agricultural production until they are in the hands of the ultimate consumer. The role of marketing in economics development cannot be overemphasized. According to Adrika (1977). Marketing performs so many roles in an economic system which includes the followings: links buyers and sellers, thus makes it possible for exchange relationship as well as increasing the standard of living: aggressive marketing has been largely responsible for the high marital standard of living of most advanced economics. Market performance may be seen as a representative of market structure. The performance characteristics features of a food market rest on market efficiency measure by the following indicators- marketing margin, market competition, consumer prices and availability of physical market facilities (Barau et al, 1993). According to Anuebunwa, (2008), the structural characteristics of the food market are those features of the market which seem to affect the behavior and the performance of the market.

Agricultural marketing in the tropics is one of the most important sectors of the economy in which therefore, cattle marketing have a substantial impact on the economy in which it operates. The importance of agricultural marketing cannot be overestimated since it brings about specialized production for better skill and efficiency thereby providing opportunities for exchange of goods and services (Olukosi and Isitor, 1990). Furthermore, marketing of cattle helps generate revenue for the local government, state, and the nation at large and also, it intends to provide incentives to producers so as to adopt improved technology to bring about increase in production. Furthermore any expansion in the volume of trade occasioned by improved marketing will create for the government further incentive to provide such

infrastructure like roads, water storage facilities etc which will eventually enhance marketing efficiency.

Considering the importance of agricultural marketing, it is our view that this study should be given priority in most developing nations. As the economy grows agricultural marketing will become more and more complex and its efficiency will then depend on the managers of the marketing system who themselves must be well informed about what it takes to have efficient marketing system.

Cattle marketing have played a vital role in Nigeria. The importance includes; economic, social and cultural contributions to the people involved in rearing and marketing of cattle (Mubi, *et al*, 2013). In Adamawa State, it is an important part of agricultural and economic activities. It is a source of income and protein to a cross section of the populace. The goal of any nation is geared towards achieving food sufficiency, improvement in living standard and overall economic growth through increase in the level of agricultural production and marketing. Generally, the rate of development of Nigeria's agricultural marketing has been very low and the marketing of cattle has not performed satisfactorily in the past and particularly in the last decade. Therefore, it is imperative to find out why it is so and possibly suggest ways of improving it.

Since cattle is a preferred source of protein, an assessment of the cost and returns of cattle marketing in the study area is very important as this will lead to the discovery of problem areas that deserves immediate attention and recommend suitable options that will help in reducing or eliminating the bottlenecks associated with it.
This study is aimed at creating enabling opportunities for remodeling and improving existing conditions as well as exposing cattle marketers on how to allocate their resources optimally with a view to increasing agricultural productivity in the study area in particular, state and the country in general.

Consequently, the study is therefore structured to analyze the cost and returns associated with cattle marketing in Adamawa State, Nigeria in terms of their patronage, income generation, access to suitable market and good prices as well as improved well-being and food security, employment generation among others. It has been established that, despite the high demand for cattle and its associated products, the supply is hampered. It is expected that all strategies in the marketing of cattle should increase its efficiency and minimized loses.
In view of this, the research intends to answer the following questions:
i. What were the costs and returns associated with cattle marketing in Adamawa State?
ii. What were the constraints associated with cattle marketing in Adamawa State?

METHODOLOGY

Study Area
Adamawa state covers a land mass of 39,742.12 sq km. This is about 4.4% of the land area of Nigeria. It lies between latitude 8N and 11N, longitude 11.5E and 13.5E. Adamawa state has a population of 3,168,101 based on 2006 census. This consists of 1,606,123 males and 1,561,978 females giving a population density of 80 people per sq km. Majority of the people in the state are farmers. Crops produced include Groundnuts, Cotton, Maize, Yam, and Cassava, Guinea-corn, millet, Beans, Sweet potato and Rice. Cattle rearing and fruit production are the major occupations, while communities along the banks of River Gongola

and Benue rivers engage in fish farming. The state essentially has a picturesque mountainous land traversed by big river valleys of Benue, Gongola and Yadseram. The valleys of Cameroon, Mandara, and Adamawa mountains form part of this undulating landscape. Yola North, which is the state capital, has an area of about 8.068 sq. km with an altitude of about 185.9m, located on latitude 9.14 and longitude 12. 38" east. It has an average rainfall of about 958.99 per annum and a population of 120,555.

As a predominantly Fulani area, Yola is also an important breeding center for cattle and other related livestock such as sheep and goat. Common breeds of cattle found in the study area include; Adamawa gudali, White Fulani and Red Bororo, Uda, imported species of various breeds. This makes beef as the most widely accepted meat in the area. A lot of dry and rainy season vegetable gardening is also being undertaken at Lake Gerio, along the Benue River valley as well as the Njuwa low lands. Similarly, fishing is also being carried-out on lakes Gerio and Njuwa as well as River Benue, small ponds, rivers, valleys ect.

Sources of Data
The data used for the study were mainly primary which were obtained through the use of structured questionnaires.

Method of Data Collection
Data for this study were collected from activities of cattle marketer for the year 2012. The data were collected using structured questionnaire. One hundred and twenty (120) Cattle marketers were administered with questionnaires. A total of Ninety questionnaires were used for analyzed.

Table1: Showing Distribution of Questionnaires According to Market

Markets	Local Government Area	No. of Questionnaires distributed	No. of filled Questionnaires received
Ngurore	Yola South	60	46
Chigari	Fufore	30	22
Song	Song	30	22
Total		**120**	**90**

Method of Data Analysis
Both descriptive (frequency, percentage and mean) and inferential statistics was used for analyzing the data generated from the study.
Descriptive Statistics
For grouped data, the mean;
$X = \sum xi/N$ ……………………………………………. (1)
Where,
N= number of observations
x= mean
$\sum xi$ = Sum of variables (i = 1, 2, 3….n)
For grouped data;
$X = \sum fxi / \sum f$ ………………………………………. (2)
   Where x = mean
   $\sum fxi$ = sum of products of all variables (I = 1, 2, 3 ….n)
   $\sum f$ = um of all frequencies

Percentage

$Xi/\sum xi \ X \ 100$

Where xi = variable to be expressed as percentage

$\sum$xi = sum of all variable (1 = 1, 2, 3 ….n)

Inferential Statistics

Gross margin is defined as the difference between the total variable cost (TVC) from the total revenue (TR).

Total revenue (TR) = Price realized by purchase cost each of the cattle by the marketers while total variable cost (TVC) comprise the purchase cost of cattle, transportation cost, government revenue, union dues, cost of loading/off-loading tax ect.

$$GM = TR - TVC \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots. (3)$$

Where

GM = Gross Margin

TR = Total Revenue

TVC = Total Variable Cost

Analysis of the structure and performance of cattle marketers was done using Gini coefficient and marketing margin analysis. Gini coefficient determines the extent of seller's concentration. Gini coefficient is mathematically expressed as follows:

$GC = 1 - \sum XY$ ………………… (2) (Okereke and Anthonio, 1988; Iheanacho, 2005)

Where

GC = Gini coefficient

X = Proportions of cattle marketers

Y = Cumulative proportion of cattle marketers earnings

$\sum$ = Summation sign

The values of GC range from 0 to 1.The higher the value of the Gini Coefficient, the higher the level of concentration and consequently high inefficiency in the market structure and vice versa.

Marketing margin analysis was used to measure market performance of the cattle marketers. Adekanye (1988) defined marketing margin as the difference between the price consumers pay and the price the producers get. Livestock market margins can be defined as the difference between the sales price of the animal (meat) and the cost incurred by the seller including acquisition price of the animal.

$$MM = CP - MP/CP \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4) \ (Iheanacho, 2005)$$

Where

MM = Market Margin

CP = Consumer Price

MP = Market Price

RESULTS AND DISCUSSION

Structure and performance of cattle marketers

The performance of cattle marketers which was analyzed using marketing margin techniques was found to be 9.09 percent. This indicates that, marketers obtained 9.09 percent of the final sales which is paid by the consumers.

Analysis of seller concentration of cattle marketing also shows that, a Gini coefficient of 0.65 was obtained. The relatively high Gini coefficient which by the analysis tends to approach one (1) is a clear indication of inequality in earnings from the sales of the animals and high

marketing concentration. As state-controlled agricultural marketing boards were abolished or scaled down, it was reported that domestic trade in agricultural products was taken over by a myriad of small operators operating in a rudimentary fashion. Fafchamps, (2003). The high concentration is therefore an indication that may lead to market imperfection and poor marketing performance. Since the number of firms are many and all of them selling homogenous products, it implies that there might not be restrictions of new firms in to and out of the markets thereby resulting in the existence of pure competition and this may have the tendency at bringing about inequality in earnings among the various markets with some few individuals controlling the operations of the markets. There is also more scope for middlemen to exploit either the consumers by charging them higher price or the cattle farmers by paying them low prices for their animals.

Table 2 Cumulative Percentage of No. of Cattle Marketers

Variable	F	% Total (X)	% Total Revenue	Cumulative % of total revenue (y)	X	Y	∑XY
44000	1	1.10	3.41	3.410	0.011	0.0341	0.0003751
49000	2	2.20	3.84	7.250	0.022	0.1135	0.0015950
52800	1	1.10	4.10	11.35	0.011	0.1135	0.0012485
55000	24	26.7	4.27	15.62	0.267	0.1562	0.0417054
57200	2	2.20	4.44	20.06	0.022	0.2006	0.0044132
60500	5	5.60	4.69	24.75	0.056	0.2475	0.0138600
66000	20	22.2	5.12	29.89	0.222	0.2989	0.0663558
71500	2	2.20	5.55	35.42	0.220	0.3542	0.0077924
77000	15	16.7	5.97	41.39	0.167	0.4139	0.0691213
79200	1	1.10	6.14	47.53	0.011	0.4753	0.0052283
82500	2	2.20	6.40	53.93	0.022	0.5393	0.0118646
88000	6	6.70	6.82	60.75	0.067	0.6075	0.0407025
99000	2	2.20	7.68	68.43	0.022	0.6843	0.0150546
110000	4	4.40	8.53	76.96	0.044	0.7696	0.0338624
132000	2	2.20	10.24	87.20	0.022	0.8720	0.0191840
165000	1	1.10	12.80	100	0.011	1.0000	0.0110000
1289200	**90**	**100**					**0.3433631**

Source: Field survey, 2012

Cost and Returns

The cost associated with Cattle marketing includes the following headings.

i.   Cost of buying cattle.
ii. Cost of Transportation.
iii. Government Taxation (commonly known as "Jangali" in the northern state of Nigeria).
iv. Cost of loading/ off-loading of cattle for transportation.
v.   Commissions.

The table 3 below shows the Cost and Returns associated with cattle marketing

Table 3: Total Cost and Returns of Cattle Marketers

Item	Amount (N)	%TVC
Cost buying cattle	5,809,000	96.94
Cost of transportation	71,850	1.19
Government Taxation	17,250	0.28
Cost of loading and off-loading	20,500	0.34
Commission ("la'ada" in local language)	73,300	1.22
Total Variable Cost	5,991,900	100
Total Revenue	6,389,900	
Gross Margin	398,000	
Market Margin	9.09%	

Source: Field Survey, 2012

From the analysis, it was revealed that the total revenue generated during the marketing process was about N6, 389,900 with gross margin of N398, 000 while the total cost of buying the cattle that were marketed amounted to N5, 809,000. This therefore, constituted about 96.94 percent of total cost. Transport cost accounted for 1.19% of the total variable cost. Other cost, such as government taxation, loading and off-loading, commissions (la'ada) incurred by the respondents accounted for 0.28, 0.34 and 1.22 percent respectively.
Similarly table 4 below, captured the cost of marketing per head of cattle.

Table 4: Cost of marketing Per Head

Item	Amount (N)
Cost of buying cattle	36,000
Cost of Transportation	600 – 1000/ 500 (by trek)
Government Tax	250.00
Cost of loading & Offloading	300.00
Commission	200 - 1000

Source: Field Survey, 2012

This table further shows that, the least cost per head of cattle was thirty six thousand Nigerian naira (N36, 000.00). This cost may obviously vary depending on the time of marketing, type (either male or female), breed, location of market, body build-up of the animal, etc. The transportation cost per head also varies depending with the mode of transportation from the source of the suppliers. This could either be by trekking (by local means such as pushing them in group and by foot). According to the study, the cost of this mode of transportation attracted a cost of about N500.00 per head. Similarly, the study also revealed that, same transportation distance attracted between N600.00 to N1, 200.00 per head using conventional means such as the use of vehicles. The study further shows that, for each head of cattle brought to the market, a tax fee of N200.00 is paid to the Local Government Authority for coming in and out of the market. The cost is normally part of the internally generated revenue efforts of the Local Government to complement the receipt from the central government monthly allocation being received. Similarly, these monies are expected to accumulate and

possibly used for providing basic social and infrastructural services in the local government area. In addition, the monies realized are also expected to service and maintain the market, provide security for the marketers and the animals themselves. Furthermore, about N300.00 is paid for loading and off-loading of animal from the point of supply to the point at which the animal are to be sold. Commission on any sale per animal attracts between N200.00 – N1000.00 and this amount is neither fixed nor remittable to the government account, but rather being possibly a settlement between operators to the settle witnesses and bargainers during the marketing process. The payment of the commission may also be based on understanding, relationship between the parties involved.

Constraints associated with Cattle Marketing
Constraints associated with cattle marketing in the study area during the period under review includes; capital, transportation, access road, inadequate information about the market, inadequate infrastructure facilities such as shades for both marketers and the animals, watering points for both human and animal consumption, environmental concerns security etc. Constraints generally refer to the bottlenecks, problems, impediments or eve the to smooth conduct of any given operation or activities. Like any given investment, cattle marketing in the study area experienced a lot of hiccups as simply classified in table 5 below. Table shows the classification of constraint associated to cattle marketers in the study area.

Table 5: Distribution of respondents according to problems of cattle marketing

Problems	Frequency	Percentages
Transportation	14	15.6
Capital	22	24.4
Lack of shade/Inadequate structure	11	12.2
Buying of stolen animals	11	12.2
Fluctuation in demand	10	11.1
Inadequate market information	8	8.9
Security	7	7.9
Total	**90**	**100**

Source: Field Survey, 2012

Analysis of the problems experienced by the marketers in the study area revealed that 24.4 percent of the respondents indicated inadequate capital as their major problem. According to Maianguwan, (2013), insufficient access to capital forces the poor to engage in less productive farm and non-farm enterprises, thus foregoing income. This suggests that, with availability of capital and its accessibility, a good number of people would enter into cattle marketing activities and thus perform effectively being a profitable venture. Similarly, about 15.6 percent of them reported high transportation cost. Similarly, others complained of fluctuations in demand which accounted for 11.1 percent, with inadequate market information constituting 8.9 percent while security constituted 7.9 percent.

High returns as well as high concentration in the market recorded in cattle business was a positive achievement hence, a clear indication of inequality in the marketer's earnings was also discovered. The formation of strong market/trade union to make uniform or standard scale and prices would to a great extent improve the structure and performance in the industry

as well as capacity building to the marketers on the improved marketing techniques and methods increase performance in the industry.

CONCLUSSION

Despite the various constraints experienced in the study area, cattle marketing was identified as a profitable venture, the results revealed a gross margin of N398, 000. Hence, the profit margin can be improved if consideration is geared towards addressing all the identified constraints that tends to increase the marketing cost and thereby causing losses to the industry. The findings further showed a marketing margin of 9.09 percent with a Gini coefficient of 0.65. High transportation cost including, contingency, inadequate capital, inadequate structures, inadequate market information, buying of stolen animals and fluctuations in demand were identified as problems faced by the marketers.

RECOMMENDATIONS

Based on the findings, the study recommends that; Government and other lending agencies should do more and assist the marketers with accessible and affordable soft loan in order to reduce the problem of inadequate capital among the cattle marketers in the state. Marketers should form / strengthening their associations and cooperatives for extensive information sharing and in-leading between and among members. Government at all levels should also be willing to provide information to marketers and researchers so as to help in addressing the problems associated with cattle marketing for necessary support and legislations. This can be achieved through extensive and improved extension service delivery through change agents. Meanwhile, taxations and harassment by government agencies should be eliminated in order to improve and sustain the industry and make it more attractive, surest and suitable means of achieving food security, improving protein intake, generation of employment and eventually wealth creation that will guarantee improved economic and social wellbeing of the citizens.

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