

Market Analysis of Cattle in Southern Kaduna, Kaduna State, Nigeria.

Mukasa. C^{1*}, Ojo. A.O¹, Adepoju S.O², Dabo. A³

Federal College of Forestry, Jos- Plateau State - Nigeria

Accepted 1st April, 2012

Abstract

The study on the market analysis of cattle in Southern Kaduna, Kaduna State was carried out in particular to examine the existing market channels, quantifies market costs and margins, and assesses opportunities for producers to access markets. A cross sectional survey of 79 traders (35 producers, 19 primary traders, 24 secondary traders) involved in the selling and/or buying of cattle was conducted in Kachia, Jaba and Kagarko Local governments' cattle markets. A simple random selection was done in the markets to select traders. The structure, conduct and performance approach was used to analyze the various market channels. The determination of prices by traders was assessed based on the availability of market information. Results reveal two market channels through which cattle flow from the producer to the terminal market. Market information was available, sourced from fellow traders, showing trust among the traders. A Lorenz curve and Gini coefficient (G) results of both primary traders and secondary traders showed highly concentrated markets while primary producers made more profits than the other traders involved in the cattle market.

Keywords: Market analysis, Cattle, Southern Kaduna

Introduction

Livestock production is a source of employment and livelihood to many Nigerians. Cattle are the most predominant and highly valued livestock in Nigeria (Tewe, 1997). They are kept for beef, hide, milk and for traction (Tukur and Maigandi, 1999), and to many as status symbol. The livestock system employed by the farmers is characterized by traditional system of production. Under this system, there is involvement of traditional methods in all aspects of cattle production including health (Abubakar and Garba, 2004). Marketing is an aspect which stimulates further production ceteris-paribus. If the marketing is efficient both the producer and consumer get satisfied in the sense that the former gets a better price for his product while the latter gets it at a cheaper price. However, production without access to market is a problem for many livestock producers in Nigeria (Usman and Nasil, 2005). Delgado et al.'s (1999) "livestock revolution" can be expected to allow the rural poor in developing countries to contribute to this growing market yet pastoral populations in Northern Nigeria lack reliable marketing outlets that could provide the full benefits of indigenous cattle resources, to be captured by both pastoralists and consumers in the region and beyond. To achieve these benefits it is necessary to address the constraints within the

pastoral production system. This study examines the existing market channels for cattle, quantifies market costs and margins, and assesses opportunities for cattle keepers to access markets, with a view to contributing to market information in Southern Kaduna, Kaduna State of Nigeria.

2.0 Materials and Methods

2.1 Study area

Kaduna is one of the old State in Nigeria is located in Northern parts of Nigeria, dominated with both Christians and Moslem, It Compresses of Southern and Northern part , Kaduna has 23 local government areas. Southern Kaduna consist of eight (8) Local government which are Kachia , Jemaia, Jaba, Zongo kataf, Lere kagarko, kaura and Sanga. Kaduna State experiences a tropical continental climate with distinct seasonal regimen oscillating between cool, hot, and humid. These two seasons reflect the influences of tropical continental and equatorial maritime air masses which sweep over the entire country. However, in Kaduna state, the season is pronounced with the cool or hot dry season being longer than the raining season. The distribution of the rain varies, decreasing from an average of about 1530 mm. The vegetation of the area comprises of grassland with scattered trees and woody shrubs. (Fricker, 1993)

2.2 Survey methodology

A cross sectional survey of traders involved in the selling and buying of cattle was conducted. Traders were distinguished within two categories, primary traders (who buy from producer, to local markets within their area) and secondary trader (who buy from producer and primary traders and transporting for sell in urban market, also referred to as terminal markets) within the cattle markets of Kachia, Jaba, and Kagorko. Markets within the study area were selected for the study on the basic of the large population of cattle.

2.3 Method of data collection

Personal interviews were conducted using a pre-tested structured questionnaire. Information from market agents was obtained with regard to period in business, initial capital, number purchased, market prices, mode and cost of transport, opinion with regard to what attracts buyers and what determines prices and problems faced in trade. A total of 79 traders were surveyed.

Corresponding Author: Mukasa. C

Federal College of Forestry, Jos- Plateau State - Nigeria

Email: cmukasauk@yahoo.co.uk

2.4 Statistical analysis

The structure, conduct and performance approach was used to analyze operating market channels. Market structure was analyzed based on market concentration exercised by traders and barriers to market entry for potential traders. To analyze concentration, the market shares of individual traders in terms of volume of trade, were analyzed using a Lorenz curve. A Gini coefficient, according to Brown (1994) was used to measure the level of inequality in market shares among traders. The study assessed market entry, by looking at the capital requirements for potential traders. These capital requirements were considered in the context of operating costs. Market conduct was analyzed based on pricing strategies. Traders were asked if they looked for market information and how they used such information in their trade. Market performance was assessed using market costs and margins. To determine the level of profits, the study used individual traders' stated opportunity cost in terms of average net monthly income. By analyzing the level of market margins, net returns and their cost components, it was possible to evaluate the impact of structure and conduct characteristics on market performance. Marketing costs involved operating costs which were related to the volume and level of business transacted. Costs included; buying costs (purchase price multiplied by number of animals, local government marketing fee, brokers' payment), transportation costs and selling costs. Gross margins were calculated as the difference between buying and selling prices for individual traders. Net margins were calculated by subtracting operating costs from total.

3.0 Results

3.1. Description of marketing channels

The study findings revealed two market channels through which indigenous cattle move from the producer to the terminal markets. These are:

1. First point of sale (producer) → local market(primary - trader) → terminal market (secondary trader)

2. First point of sale (producer) → terminal market (secondary trader)

Marketing channels include primary traders and secondary traders. Both primary and secondary traders deal with the producer to buy animals. Primary traders buy in small numbers daily and sell to secondary traders in the local markets. Secondary traders buy from both producers and primary traders and transport to the terminal market to sell. Secondary traders play an important role in transporting animals from the producer to the consumers.

3.2. Description of market flows

Market flows from the producer gate to the terminal market in figure 1 were analysed in terms of marketed numbers of animals recorded by market agents. The basis for recording market agents stems from the fact that during the survey, primary traders considered trades over a time period of the one month, while secondary traders considered trades over a time period of three months. The difference in considered trades over time periods required the study to harmonize the periods by extrapolating the period for primary traders.

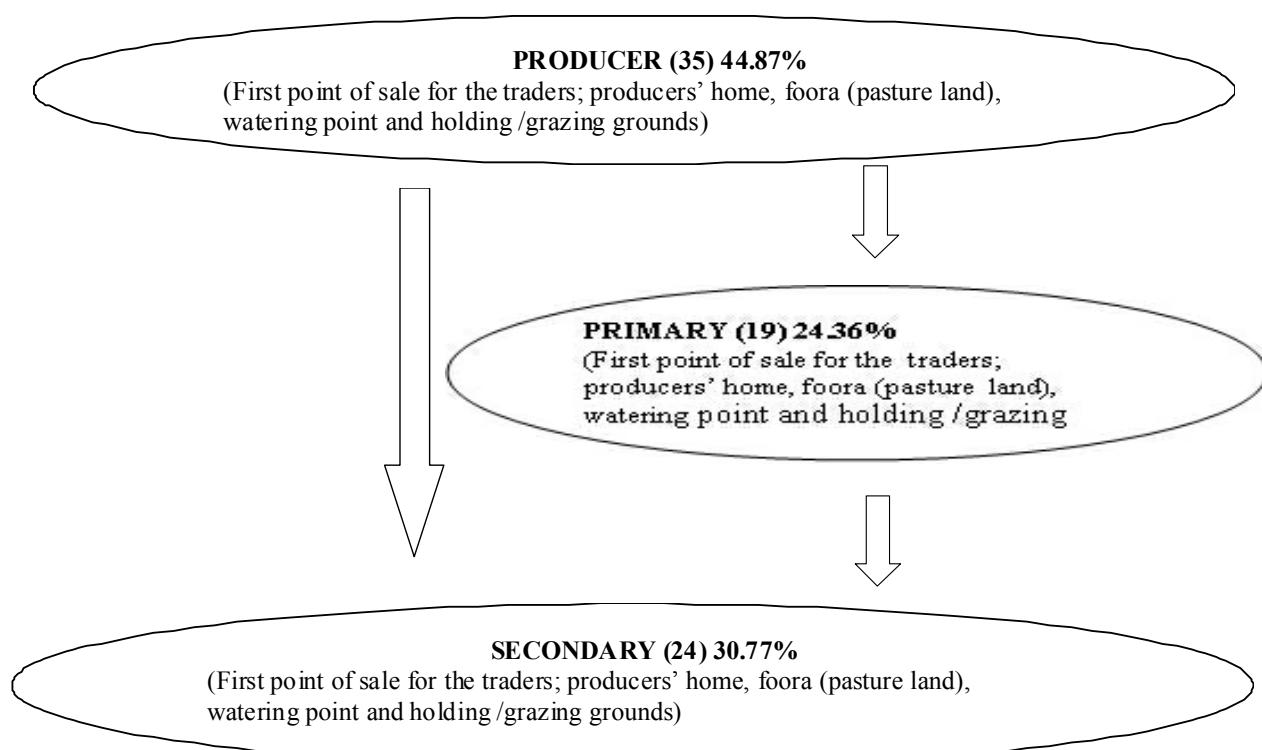


Figure 1: Market flows of cattle from the producer to the terminal market - end of market chain for live animals

From figure 1, a total of 35 (44.8%) cattle were transported to the terminal market for sale by the producers. These animals were included in the numbers transacted by secondary traders, since most primary traders sell to secondary traders. Looking at both primary and secondary channels the difference in the number of traded cattle was small giving a percentage of 6.41%. This means both groups buy almost the same percentage of cattle from producers. Due to the post-drought situation when the survey took place, there was no market per se (i.e. no busy market operation), making physical market structures non-functional as is usually the case under such circumstances. Few animals would be brought for sale by producers, compelling both primary and secondary traders to find producers and their animals at watering points or holding/grazing areas, a situation that showed excess demand for animals. Primary traders would then bring purchased animals to town and sell them to secondary traders. Most of the secondary traders do business in partnership, basically to share market costs, particularly transport cost.

3.3. Market structure

Analysis of market structure was done for primary traders and secondary traders.

3.3.1. Market share distribution by primary traders

The Lorenz curve shows the cumulative percentage of market share (traded animals) versus cumulative percentage of primary traders. The curve shows that the largest 10% of total primary traders controlled about 23% of total market trade and the largest 20% of traders accounted for about 40% of total market trade. Similarly the largest 50% controlled about 75%. This implies that the marketing of cattle is dominated by relatively many primary traders and is relatively equitably shared. Empirical results of the level of inequality in market shares by Gini coefficient (G) is $1 - 0.68 = 0.32$. The study results of coefficient (G) of 0.32 shows a moderately concentrated market of primary traders.

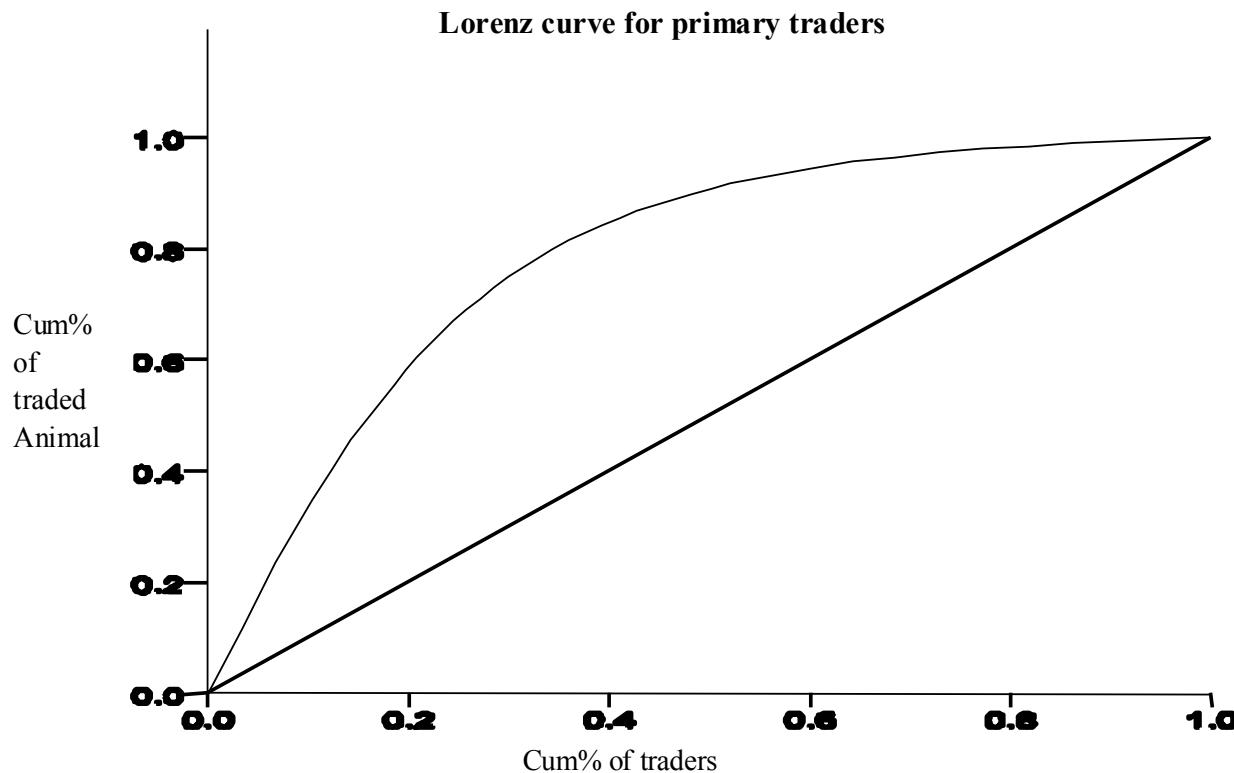


Figure 2: Results of degree of inequality in market shares of primary traders.

3.3.2. Market share distribution by secondary traders

The Lorenz curve shows the cumulative percentage of market shares versus cumulative percentage of secondary traders. The curve shows that the largest 10% of total secondary traders handled about 35% of total market trade and the largest 20% of traders held about 50% of total market transactions. Similarly the largest 50% handled about 80%. This implies that the marketing of cattle is

dominated by moderately few secondary traders and is rather inequitably shared. Empirically, the result of level of inequality in market shares by Gini coefficient (G) is $1 - 0.54 = 0.46$. Comparing to Gini coefficient that ranges between zero and one, the results of coefficient (G) of 0.46 implies that secondary traders operate in a highly concentrated market.

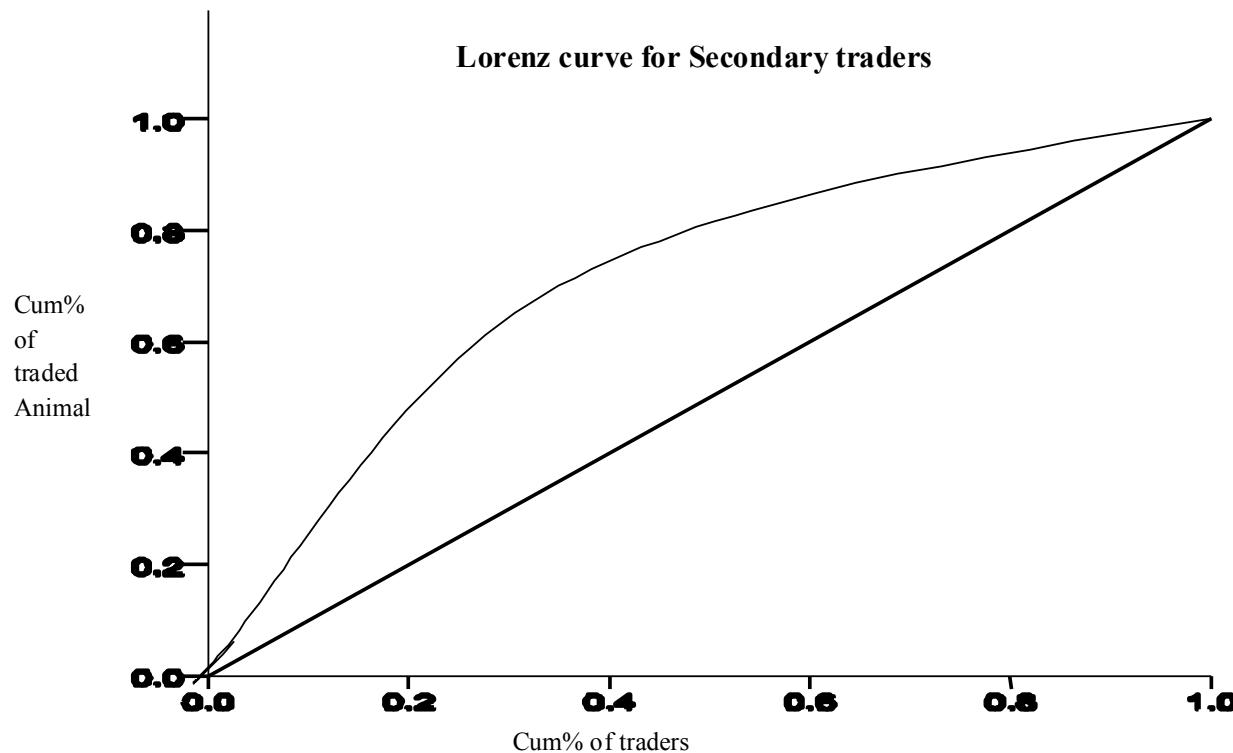


Figure 3: Results of degree of inequality in market shares of secondary traders.

3.4. Conditions to market entry conditions

Capital requirements serve as an entry barrier since only those who have such capital (to cover market costs) can enter the market. The study used the initial capital needed for potential entrants. The study further classified the two market agents by number of animals (herd size) into small scale, medium scale and large scale. This was done by rearranging volumes of traded animals (by market agents) in ascending order, then divided into 3 groups. Considering change in monetary interest rates over time, the study examined initial capital to measure the capital required for potential entrants. Results in table 1 show mean market

initial costs per month for small scale producer traders was N 28.98 medium scale producer traders was N 18.83, and large scale producer traders was N 40.83. Mean marketing costs per month for small scale primary traders was N 34.55, medium scale primary traders were N 30.00, and large scale primary traders were N 25.40. The mean market initial cost per month for small scale secondary traders was N 26.54 and medium scale secondary traders was N 30.00. It was observed in this study that primary traders had higher initial capital, followed by the producers with the secondary producers being the least. The results indicate that the marketing costs for the primary traders and the producers are high.

Table1: Market initial capital (N,000 per month) of market agents classified by herd size

Market channels	N	Means of Initial Capital (N,000)
Producers	22	28.98
Small [1-20],	6	18.83
Medium [20-60]	6	40.83
Large [> 60] ()		
Primary traders		
Small [1-20],	13	34.55
Medium [20-60]	1	30.00
Large [> 60] ()	5	25.40
Secondary traders		
Small [1-20],	13	26.54
Medium [20-60]	4	24.00
Large [> 60] ()	-	-

3.5. Market conduct

Results in table 2 show that the selling price of cattle of producer, primary traders and secondary traders was influenced by the buying price of animals, information

availability and preference of animal type. The determination of prices by traders was assessed based on the availability of market information. Lack of market information was seen as a way by which secondary traders could exploit primary traders in the interior villages. Thus,

market participants were asked if in their opinion, market information on the level of prices and volumes was available, and if they were satisfied with the available information. Results in table 2 show that 11.54% of producers, 6.41% of the primary traders and 11.54% of secondary traders said market information was available, sourced from fellow traders, showing trust among the

traders. Buying price of the animals and preference for animal type also influence the selling price with 28.21% and 5.13% of producers, 3.85% and 12.82% of the primary traders and 2.56% and 16.65% of secondary traders, respectively. Business period influenced selling price in 1.28% of the primary producers.

Table 2: Relative frequencies for factors influencing small ruminant's selling price

Market channels			Overall	
	N	%	N	%
Producers			35	44.87
Buying price of animals	22	28.21		
Information availability	9	11.55		
Market location	-	-		
Preference of animal type	4	5.13		
Business period	0	-		
Primary			19	24.36
Buying price of animals	3	3.85		
Information availability	5	6.41		
Market location	-	-		
Preference of animal type	10	12.82		
Business period	1	1.28		
Secondary			24	30.77
Buying price of animals	2	2.56		
Information availability	9	11.54		
Market location	-	-		
Preference of animal type	13	16.67		
Business period	0	-		
Total			78	100

3.6. Market performance

Results of the analysis on market performance were based on the two market channels. Analysis of gross margins aimed to assess the ability of traders to cover the market costs and analysis of net margins was intended to assess the profitability of marketing trade, and whether net returns constitute economic rent or normal profits. Results in table 3 shows producers have a mean gross margin of N 213.976 per month; primary traders have a mean gross margin of N 150.972 while secondary traders revealed a mean gross margin of N 34.948 per month. The study showed that producers receive the highest mean gross margin followed by the primary traders with secondary traders receiving the least mean gross margin. This could imply that the net

returns received by traders in both primary and secondary channels are normal. On the other hand, higher nominal opportunity cost could mean that the trade returns are below normal. The market situation of high concentration with low profits especially for secondary traders (who constitutes sellers) would indicate that the market is controlled by the buyers at the terminal market. This could explain the relatively small number of traders in the market. High costs involved in the market coupled with traders being price takers leads to less profit. This could indicate a non-attractive market for secondary traders, thereby reducing market entry. Accordingly existing traders could choose to leave the industry, but findings of the survey indicate that traders are limited by the capital requirements to enter into other industries. Traders also claim that they

Table 3: Market costs and margins (N .000) by market channels.

Market agents/ Variables Viewed	Means	Max	Min	Std Err
Producers				
Outputs	267.633	689.000	12.000	40.251
Inputs	53.657	158.000	1.000	5.668
Gross Margin	<u>213.976</u>	<u>531.000</u>	<u>11.000</u>	<u>34.583</u>
Primary				
Outputs	200.556	656.000	44.000	37.985
Inputs	49.584	173.000	2.000	9.678
Gross Margin	<u>150.972</u>	<u>483.000</u>	<u>42.000</u>	<u>28.307</u>
Secondary				
Outputs	85.773	201.000	24.000	8.797
Inputs	50.825	94.000	15.000	3.890
Gross Margin	<u>34.948</u>	<u>107.000</u>	<u>9.000</u>	<u>4.907</u>

4.0 Conclusion

Compared to small ruminants (goats and sheep), the population of large ruminants (cattle) in the study area can be said to be very small. Thus the small ruminants are a major component of the pastoral population's household economy. Results in this study showed that producers, primary and secondary traders operate in an imperfect market, controlled by buyers. Buyers exercise market control influencing pricing decisions, especially at the terminal market, meaning that sellers (traders) are absolute price takers. Yet in an imperfect market situation of sellers, we would expect to find that profits are above normal. The findings of this study suggest that part of community based ruminants improvement should focus on marketing issues and, in particular, improving the market infrastructure from the very interior areas of the local villages to the terminal market in various local government areas is important. One such means of improving market infrastructure would be to elevate the markets at the local government level to secondary markets to serve as a second collection point for livestock. This would call for an enabling environment to increase the market size in terms of both volume transacted and/ or number of traders. Increase in market size can be encouraged through providing facilities such as water, roads, grazing ground around the market. Provision of such facilities could be done by the government which would help support value addition to these animals through change of ownership along the market channel and raise prices for both producers and primary traders who would be walking the animals to this market. In addition improving transport infrastructure, would reduce lorry transport costs (among others), consequently reducing entry barrier. This would encourage entry of potential traders to become more competitive leading to increases in incomes for pastoral communities, since the majority of traders are pastoralists themselves. In order to achieve such transport cost reductions the government needs to invest in better road networks, especially since the district does not have a single tarmac road.

References

1. Abubakar I. A. and Garba, H. S. (2004). A study of Traditional Methods for Control of Ticks in Cattle in Sokoto State, Nigeria. Proceedings of the 29th Annual Conference of the Nigerian Society for Animal Production 29: 87 - 88.
2. Brown, Malcolm (1994). "Using Gini-Style Indices to Evaluate the Spatial Patterns of Health Practitioners: Theoretical Considerations and an Application Based on Alberta Data". Social Science Medicine Vol 38 (9): 1243-1256.
3. Delgado c., Rosegrant M., Steinfeld H., Ehui S. and Courbois C. (1999). Livestock to 2020: The next food revolution 2020. Food, Agriculture, and the Environment Discussion Paper 28. IFPRI/FAO/ILRI
4. Fricker, W. (1993): Cattle Husbandry in Nigeria: A study of its Ecological Conditions and Social-Geographical Differentiation. Reprinted Ebie Akwa Ventures Ltd, Ikot Ekpene, Nigeria.
5. Tewe, O. O. (1997). Sustainability and Development: Paradigms from Nigeria's Livestock Industry. Inaugural lecture series. University of Ibadan Press, Ibadan.
6. Tukur, H. M. and Maigandi, S. A. (1999). Studies on Animal Traction in North-eastern Nigeria. Characterization and management of Animals used for Draught. Trop. J. Anim. Sci. 1(1): 10 - 27.
7. Usman. H and Nasiru. M. (2005). Commodity chain analysis of cattle marketing in Nigeria; a case study of K.R.I.P Area Kano State. A report submitted to ADENI project/NAERLS Zaria. April 2005