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Economic assessment of ruminant off-take by Fulani herdsmen in Yewa division of Ogun state

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***Target Audience:** Government, Farmers, Researchers, N.G.O`s, Corporate bodies*

Abstract

The economic assessment of ruminant off-take by fulani herdsmen in yewa division of O Vgun state study was carried out in Yewa (one of four in Ogun with five local government areas) division of Ogun State which was formally known as Egbado. Primary data (structured questionnaire from Fulani) and Secondary data (articles, journals and record on the research) were used.As to the cost and return structure, The total variables cost per acre was estimated to be ₦217,080.00and accounted for 98.77 percent of total cost. The total fixed cost per acre was estimated at ₦3,000.00 and accounted for 6.62 of total cost. This showed that fixed cost constituted the larger proportion of cost of production of respondents. In addition, total revenue (TR), gross margin (GM) and net farm income (NFI) per acre were estimated at ₦839,739.00, ₦2,400,000.00 and ₦548,415 respectively. The result show that returns on investment (RRI), profitability index (PI), return on variable cost (RRVC) and operation ratio (OR) were 0.45%, 0.92, 13.96% and 0.071% respectively. The implication of this is that herdsmen production in study area is profitable. The study reveals that ruminant off-take by Fulani herdsmen is a lucrative business.

Key words: Cost-Return, Fulani-Herdsmen, Ruminant-off-take, Yewa-Ogun state.

Description of problem

Livestock production is a source of employment and livelihood to many Nigerians. Cattle are the most predominant and highly valued livestock in Nigeria [1] They are kept for beef, hide, milk and for traction [2]. 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 [3]

Especially, about 90 percent of the country's cattle population and 70 percent of the sheep and goat population are concentrated in the northern part of the country [4]. The concentration of Nigerian's livestock-base in the northern region is mostly likely to have been influenced by the ecological condition of the region which is characterized by low rainfall duration, lighter sandy soil and longer dry season [5]. The available breeds of sheep in the country are the udda, yankasa, balami and the West African dwarf (WAD) sheep and the breeds of goats are the West African dwarf (WAD) goats, saheal/desert goats and the sokoto red/maradi. [6] reported that Nigeria has a livestock of about 16.3 million livestock of cattle, 40.8 million goats and 27 million sheep, 151 million poultry, 3.7 million pigs, 900,000 donkeys and 90,000 camels. The Fulani's originated from the Arabian Peninsula [7]. They are found mainly in Central, Western and Northern Africa and hold a large number of livestock populations. Mobile pastoralism is the dominant system practiced by the Fulani

pastoralist [8] .The Fulani pastoralists who were traditionally known for moving from one place to another with their herds of cattle are beginning to settle down permanently, particularly outside their original place of abode in the semi-arid (Northern) part of Nigeria but the settled life style of the Fulani pastoralists down south thus made it possible for them to be involved in other economic activities which they could not have possibly taken up while in migration. Such economic activities as crop and small ruminant livestock production, marketing of farm and livestock products, farm labour work etc serve to improve the economic condition and standard of living of the Fulani households [9]and [10]. There is therefore the to determine the additional income from occasional offtake of animals to meet exigent expenses and to be able to see ways of optimizing their economic livelihood.

Materials and Method

Area of the study:

The study was carried out in Yewa division of Ogun State. Before the year 1985, Yewa was formally known as Egbado. It is located within longitude 2º 45' E and 3º 5'E, latitude 6º 55' N and 7º 15' N at altitude 90-120 meters above sea level. The climate/vegetation is sub-humid forest mosaic savanna type with an annual rainfall of 1,945.3mm.Rainy season is between early April and late October. Rainfall pattern is bimodal with two peaks in June and September. Maximum temperature varies 29^0C during the peak of the wet season and 34^0C at the onset of the wet season and the mean relative humidity is 72.81% while evaporation is 1806.9mm,, soil type:- oxic paleustalf (soil texture: sandy loam);Yewa division is one of the four division that makes up the state, other being Egba, Remo, and Ijebu divisions. There are twenty (20) local Government areas in Ogun state in which five are under Yewa division.Yewa is bounded in the west by Republic of Benin, in the East by Oyo State, Abeokuta North Local Government. The Five local Government in yewa division are Yewa North, Yewa South,Ipokia, Imeko-Afon, Ado-Odo Ota Local Government.The area is richly endowed with fertilized soil suitable for large scale farming and cattle rearing.

Sources and method of data collection: For this study primary and secondary data was used. Primary data was collected through well-structured questioniare and interviews. Specifically the questioniare was administered on Fulani Herdsmen. While secondary data was based on sourcing articles, journals and record on the research.

Sampling techniques:

Multi-stage sampling technique was used to select those Fulani herdsmen from whom relevant information was obtained . The first stage was the random selection of two (2) local government area, (i.e Yewa north local government area and Yewa south local government area) from the study. At the second stage, two (2) cattle markets were selected from each of the two local government area making a total of four(4) market that were selected. At the third stage, twenty (20) herdsmen were selected from each of the selected market making a total of eighty (80) respondents.

Method of Data Analysis

Description analysis was used to profile the socio-economic characteristics of the sampled nomadic Fulani herdsmen, as well as the possible causes of ruminants off-take among them. These involved the use of tools such as mean, frequency table, percentage and charts, [11, 12]. Marketing channels were identified and constructed for each of the common ruminant types, namely cattle, sheep, and goat. This establishes the various dealer

and handlers of the concerned ruminant animals from the herdsmen to the consumers of beef and other by-products. Inter-boundry channels were also established for ruminant animals that crossed into the study area from the neighboring West africa countries. Economic assessment of ruminant marketing involved various measures of market efficiency. These include the marketing cost, marketing marging, profit margin, and marketing efficiceny.

Table 1: Age distribution of the respondents

Age (Years)	No	%	Mean Age
21-30	31	38.8	
31-40	21	26.3	
41-50	13	16.3	57.1
51-60	6	7.5	
Total	80	100	

Source: Field survey, 2016

Table 2: Distribution of sampled farmers by sex

Sex structure	No	%
Male	78	97.5
Female	2	2.5
Total	80	100

Source: field survey, 2016

Table 3: Household size distribution of the respondent

Household size	No	%	Mean
1 - 5	29	36.2	
6 - 10	40	50.2	
11 - 15	11	12.8	7
Total	80	100	

Source: field survey, 2016

Model Specification

The marketing cost, marketing margins and marketing efficiency were analysed using percentage ,ratio and profit margin as presented [12]

Marketing Margin (MM) is the different between purchase price and price of resale. It is usually expressed as a percentage prices: [12]

$$\text{i.e } MM_i = \frac{Sp-Cp}{Sp} \times 100 \quad (1)$$

Where:

MM_i = Marketing Margin

Sp = Selling Price [12]

The efficiency of beef marketing was analysed using the Marketing Efficiency Index (MEI) which measure the amount of profit per naira spent in the marketing of one unit of beef. It is the ratio of the profit margin to whatever cost was incurred in arriving at the margin and is given as:

$$MEI = \frac{VM}{CM} \quad (2)$$

Where:

MEI = Marketing Efficiency Index

VM = Value added by Marketing (₦)

CM = Cost of marketing (₦) [12]

Budgeting technique was used to determine the profit margin of dealers, and herdsmen. Profit is the excess of income over expenditure, it is expressed as:

$= TR - TVC$ (3)

Where:

= Profit

TR = Total Revenue

TVC = Total Variable Cost [12]

The total revenue is the amount of money recieved from the sales of all ruminant animals. The total cost is the cost incurred in purchase and handling of ruminant animals, and it is made up mainly of variable cost (VC). Profitability andefficiency ratio were also computed.

Profitability and efficiency ratios is calculated as follows

Profitability ratio = $\frac{profit}{TVC}$ (4)

Efficiency ratio = $\frac{TR}{TVC}$ (5) [12]

Table 4: Distribution of herdsmen farmers by marital status

Marital status	No	%
Single	5	6.1
Married	72	90.1
Divorced	3	3.8
Total	80	100

Source: field survey, 2016

Table 5: Distribution of farmers based on their level of education

Educational status	No	%
No formal Education	16	20.0
Primary Education	64	80.0
Total	80	100

Source: field survey, 2016

Table 6: Distribution of farmers based on their main occupation

Main occupation of sampled farmers	No	%
Farming	80	100
Total	80	100

Source: field survey, 2016

Result and Discussion

Description of the social economic characteristics of household heads

This section presents the social economic characteristics of the household head. The tabular form of analysis included percentages and frequencies of sex, ages, education, occupation and marital status of respondents [11]

Description of respondent by Age: From Table 1, it was revealed that Age of household heads [11] has a vital effect in engaging in income generating activities and other productive work such as farming. It was observed that 31 or 38.80% of the household heads were between 21 years and 30 years (the modal class). This is because, the household heads between 21 - 30 years has the highest frequency. The mean age of the household heads was found to be about 57.1 years, this is

an indication that household heads are likely to be economically active based on their age.This is in consonance with was observed by [13] which means that by the time they start farming at early tender age which would give them ample chance to acquire on time where withal they need to settle down for marriage such that by age 50 they would have acquired all the necessary and essential materials that will make a comfortable head of the family

Description of respondent by Sex: Sex [11] is the determinant of the ability to perform some physical work. It is a popular notion that men are more efficient in farming system than women. Moreover, they are energetic and can handle more hectic task than their female counterpart. As known by all and sundry that some labour intensive farming production requires strong physique and vigorous work. This trend has been observed by [7],[14]and [6]. This inform the designing the experiment thus and occasion the determination of sex in this survey. From Table 2 below, about 97.5 of the farmers were male while 2.5 of them were female although it is unlike that in some part of Nigeria like the Etsan and the Edos where majority of the farm activities is carried out by females. [6] Therefore this implies that men dominate the production of herdsmen in the study areas.

Description of respondent by Household size: The total household size [11] of the farmers comprises of their wife/wives, children and dependants. Household size is often believed to have negative relationship with profitability of farming business however, it enhances family labour. The Table 3 below shows the household size of the herdsmen farmers that 50.0% of the farmers has the largest household size between 6 - 10 in the study areas. The percentage of farmers who has family member of 1 - 5, 6 - 10, 11 - 15 are 36.2%, 50.0%, and 12.8% and with a mean of 7. This imply that labour will be accessible dependable and cheap but if there has been affordable and adaptable advanced technology more production would have been realized by the family. This is calling for modified farming system that will translate minimum input into optimum output as observed and recommended by **[14]**

Description of Respondent by marital status: This marital status [11] helps to reduce labour cost especially when the farmer are married in which they can supply labour from their household. This in turn increases their income considerably. The distribution of the marital status of the farmer is presented in the Table 4 below shows that majority 72 or 90.1% of the farmers were married and thus implies that most of them earn their living and cater for their families from the business. It also implies that the married respondents will make effective use of their family labour and they would affect the productivity positively but this method will mean that the entire household will take farming as their major occupation. This does not encourage diversification of vocation and could be in the event of any natural catastrophe. This situation can be mitigated by organizing informal workshop or any other capability or empowerments forum.

Description of respondent by educational status: Education ([11] is one of the major socio-economic factors that have great impact on the output and productivity of the farmers. Farmers with formal education are privileged to have early contact with new innovations and improved technologies, which are designed to improve output and productivity. Moreover, such farmers are early adopters and because risk aversion tendency reduces with formal education. In farm industry, formal education affords farmers especially those that have been trained in agriculture on how to compound feeds, which serves as a major input in herdsmen production. The distribution of the farmers by years of educational training is presented below. From the Table 5 it is

noteworthy that over 80.0 percent of the farmers are primary school holders. This level of education is not enough for the desired adoptability and adaptability of technologies that will increase and enhance the productivity of both entrepreneur and other factors of production

Description of respondent by main occupation: This is expected to have direct relationship with productivity because such a man will be an absentee farmer. However, if such farmer is able to employ a competent and sincere manager, then the effect of his major occupation vis-à-vis his absence may not be too apparent. The distribution therefore of the herdsmen farmers according to their main occupation is presented in the Table below. From Table 6, about 100.0% of the herdsmen farmers have their main occupation in farming. It can therefore be deduced that herdsmen production in the study areas is in the hand of men and women whose major occupation is farming and are therefore more skilled with respect to the nitty-gritty of traditional agricultural production methods [6]

Description of respondent by farming experience of herdsmen farmers: The descriptive statistics and frequency distribution of the farmers according to farm experience, is presented in Table 7 Experience in any business is expected to play a prominent role in managing risks associated with the business. The experience gained by farmers as measured by the numbers of years the farmers has been into farming has bearing on their resources used and overall management of their farms. An experienced herdsmen farmer is most likely to identify a source of loss such as disease outbreak, erosion, poor performance of crop at a particular season. Experience is very important because so many farmers often rely on their past experience in drawing up production plans and timing of operation. From the findings, in terms of experience majority 70 or (87.5%) of the herdsmen farmers had ranging from 16 and above, this implies that they will be ready to adopt new innovation.

Description of herdsmen farmers by farm Size: Farm size is an important variable that may compel the farmer to seek for credit. As farm size increases, the magnitude of likely losses and level of risk faced by the farmer increases [15] Table 8 below shows the distribution of the herdsmen farmers by farm size and it revealed that majority 58 or (72.5%) ranging from above 20 herds. This implies that they have enough herds for herdsmen to yield more income.

Description of herdsmen farmers by income: Farm income is an important variable that may compel the farmer to seek for credit. As farm size increases, the magnitude of likely losses and level of risk faced by the farmer increases. Table 9 below shows the distribution of the herdsmen farmers by farm size and it revealed that majority 44 or (55.0%) ranging from ₦100000 monthly income. This implies that they have some income but with prevailing economic uncertainty.

Marketing Margin of Herdsmen: The efficiency of beef marketing was analysed using the Marketing Efficiency Index (MEI) which measure the amount of profit per naira spent in the marketing of one unit of beef. It is the ratio of the profit margin to whatever cost was incurred in arriving at the margin and is calculated here under [12].

From the above table, the marketing margin is calculated to be 33.33 percent which is the ratio of selling price over the cost price multiply by 100. It is therefore from the above assertion that the rearing of ruminant animal is profitable as regard the excess percentage of the margin [12].

Cost Return Structure of Herdsmen: Budgetary result for farming system of herdsmen is presented in Table 11. The total variables cost per acre was estimated at ₦217,000.00 and accounted for 98.77 percent

of total cost. The total fixed cost per acre was estimated at ₦3,000.00 and accounted for 6.62 of total cost. This showed that fixed cost constituted the larger proportion of cost of production of respondents. In addition, total revenue (TR), gross margin (GM) and net farm income (NFI) per acre were estimated at ₦839,739.00, ₦2,400,000.00 and ₦548,415 respectively. The result show that returns on investment (RRI), profitability index (PI), return on variable cost (RRVC) and operation ratio (OR) were 0.45%, 0.92, 13.96% and 0.071% respectively. The implication of this is that herdsmen production in study area is profitable. The result also revealed that in the area of cost, labour cost and tractor cost takes the larger percentage of cost and this implies that the sampled herdsmen farmers in the study area are labour intensive and this correlated with [16] who observed that labour mostly constituted about 57% of the total cost, leaving only about 43% to be shared by other variable inputs and fixed costs. These imply that the farmers are resourcefully efficient. Therefore, farmers should be empowered and enabled to have easy access to sufficient funds in order to increase their farm production.

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Marketing Efficiency Index: This measures the amount of profit per naira spent in the marketing of one unit of beef. It is the ratio of the profit margin to whatever cost was incurred in arriving at the margin.From the table below the Marketing Efficiency Index is calculated to be 2.24 where value added is divided over the cost of marketing

Livestock production is a source of employment and livelihood to many Nigerians. Cattle are the most predominant and highly valued livestock in Nigeria [1]. Ruminants, cattle in specific, are a major protein supplier to Nigerian populace and the world as a whole; hence, markets and marketing activities are very essential for the distribution of the cattle to the final consumer and for the wellbeing of the farmers and the marketers. Primary data was collected through well-structured questioniare and interviews. Specifically the questioniare was administered on Fulani Herdsmen. While secondary data was based on sourcing articles, journals and record on the research. 31 or 38.80% of the household heads were between 21 years and 30 years (the modal class). This is because, the household heads between 21 - 30 years has the highest frequency. The mean age of the household heads was found to be about 57.1 years, this is an indication that the household heads are likely to be economically active based on their age. about 97.5 of the farmers were male while 2.5 of them were female. Therefore this implies that men dominate the production of herdsmen in the study areas. 50.0% of the farmers have the largest household size between 6 - 10 in the study areas. The percentage of farmers who has family member of 1 - 5, 6 - 10, 11 - 15 are 36.2%, 50.0%, and 12.8% and with a mean of 7. Majority 72 or 90.1% of the farmers were married and thus implies that most of them earn their living and cater for their families from the business. It also implies that the married respondents will make effective use of their family labour and they would affect the productivity positively [16]

Table 7: Distribution of farmers by farming experience

Farming experience of sampled farmers	No	%	Mean
≤ 9	2	2.5	
10 – 12	6	7.5	24.0
13 – 15	2	2.5	
16 and above	70	87.5	
Total	80	100	

Source: field survey, 2016

Table 8: Distribution of herdsmen farmer by size

Farm Size	No	%
1 - 10	**6**	7.5
11 – 20	16	20.0
Above 20	58	72.5
80	80	100

Source: field survey, 2016

Table 9: Distribution of herdsmen farmer by income

Farm income	No	%
> 100000	44	55.0
1000001 - 200000	2	2.5
Above 200001	36	42.5
Total	80	100

Source: field survey, 2016

Table 10: Herdsmen Marketing Margin

Herdsmen Marketing Margin	
Selling Price	300,000
Cost Price	200,000
Marketing Margin	33.33%

Source: field survey, 2016

It is noteworthy that over 80.0 percent of the farmers are primary school holders about 100.0% of the herdsmen farmers have their main occupation in farming. and it revealed that majority 44 or (55.0%) ranging from 100000 monthly income. This implies that they have enough income. The total variables cost per acre was estimated at ₦217,000.00 and accounted for 98.77 percent of total cost. The total fixed cost per acre was estimated at ₦3,000.00 and accounted for 6.62 of total cost. This showed that fixed cost constituted the larger proportion of cost of production of respondents. In addition, total revenue (TR), gross margin (GM) and net farm income (NFI) per acre were estimated at ₦839, 739.00, ₦2,400,000.00 and ₦548,415 respectively. The result show that returns on investment (RRI), profitability index (PI), return on variable cost (RRVC) and operation ratio (OR) were 0.45%, 0.92, 13.96% and 0.071% respectively. The sampled herdsmen farmers in the study area are labour intensive and this correlated with [15] who observed that labour

mostly constituted about 57% of the total cost, leaving only about 43% to be shared by other variable inputs and fixed costs. The marketing margin is calculated to be 33.33 percent which is the ratio of selling price over the cost price multiply by 100. Marketing Efficiency Index is calculated to be 2.24 with the aid of the above formula, where value added is divided over the cost of marketing.

Table11 Distribution of cost and return of herdsmen farmers

Description	Minimum	Maximum	Mean	SD	Total Cost %
		Revenue (₦			
Value of Herdsmen (₦)	240,000	3,240,000	593715,3	450,536.9	
Total Revenue (₦)	240,000	3,240,000	593715,3	450,536.9	
		Variable Cost Items:			
Cost of Feeding **(₦)**	72,359.99	100,940.9	12,000	1,804	10.23
Cost of Medication (₦)	54,720.1	108,540.1	6,000	1,123	5.11
Labour Cost **(₦)**	36,180	7,600	24,300	2,300	20.71
Total Variable Cost (₦)	**163,259.99**	**217,080.00**	**42,300**	**5,227**	**98.77**
Gross Margin (₦)	**76,740.01**	**2,400,000.1**	**551,415.3**	**445,**	**309.9**
		Fixed Cost Items:			
Depreciation: land (₦)	1,500	2,700.00	3,000		**6.62**
Total Fixed Cost (₦)	1,500	2,700	3,000		
Total Cost (₦)	**164,759.99**	**219,780.00**	**45,300**		**100**
Net Farm Income (₦)	**75,240.01**	**2,397,300.1**	**548,415.3**		
		Profitability Indices:			
Rate of Returns on Investment(%)	**0.45%**				
Profitability Index or Return on Sale	**0.92**				
Rate of Return on Variable Cost (%)	**13.96%**				
Operating Ratio	**0.071%**				

Source: Field Survey, 2016

Table 12: Herdsmen Marketing Margin

Selling Price	300,000
Cost Price	200,000
Marketing Margin	33.33%

Source: field survey, 2016

Table 13: Herdsmen Marketing Index

Value Added by Marketing	375,000
Cost of Marketing	166,704
Marketing Efficiency Index	2.24

Source: field survey, 2016

Conclusions and Applications

1. The study reveals that ruminant off-take by Fulani herdsmen is a lucrative business. The significant determinants of this business are the land, feeding, paddock and marketing. Mean while the cost of medication serves as the major determinant by the Herdsmen according to the finding.
2. Transportation serves as an unavoidable factor, which reduces the degrees of nomadism. Effort should therefore be made by the government to ensure that proper grazing allowance is given to Fulani herdsmen so as to eliminate the loss of produce by the farmers and put an end to the pastoralists-farmer disagreement.

References

1 Tewe, O.O (1997). Sustainability and Development: Paradigms from Nigeria's Livestock Industry. Inaugural Lecture Series. University of Ibadan Press, Ibadan

2 Tukur, H. M and Maigandi, S.A (1999). Studies on Animal Traction in Northeastern Nigeria: Characterization and Management of Animals used For Draught. *Tropical Journal of Animal Science*, 1(1):10-27.

3 Abubakar I.A and Garba, H.S (2004). A Study of Traditional Methods for Control of Ticks in Sokoto State, Nigeria. Proceedings of the 29th Annual Conference of the Nigerian Society for Animal Production 29:87-88.

4 Fricke W (1979). Cattle Husbandry in Nigeria: A study of its ecological conditions &social geographical differentiations. Heidelderger Geographischen Arbeiten, Hert 52, Geographischen Institute de Universitaet Heidelbes, West Germany.

5 Lawal-Adebowale, O. A (2012). Factors Influencing Small Ruminant Production in Selected Urban Communities of Abeokuta, Ogun State. *Nigerian Journal of Animal Production,* 39(1): 218 – 228.

6 Omotayo A.M (1999). The evolving sedentary lifestyle among nomadic pastoralists in the humid zone of Nigeria: implications for land-use policy. International

7 De St Croix, F. (1945).The Fulani of Northern Nigeria: Some General Notes. Lagos: Government Printer.

8 Adekunle, O. A., Oladele, O. I and Olukaiyega, T. D (2002). Indigenous Control methods for Pests and Diseases of cattle in Northern Nigeria. *Livestock Research for Rural Development,* 14 (2):1 –4.

9 Aboki Y., (2003) Land use policies and legislative development in Nigeria. *In*: Gefu J. O. (ed) Land tenure systems in Nigeria: Evolving effective land use policy for poverty .

10 Nagido T.,(2004).Reforming land rights in Africa. 2020, Africa conference brief 15. International Food Policy Research Institute. 6 pp.

11 Iheanacho A.C and Iheanacho A.A **(**2012).Research Methodology for Social Sciences and Education. Ibadan, Nigeria: Sterling Horden Publishers.

12 Olukosi, J.O., Isitor, S.U and Moses, O.O (2008).Introduction to Agricultural Marketing and Prices, 4th edition: Principle and Application, living book series G.U. Publication, Abuja, Nigeria.

13 Ayoola, G.B., Ayoade, J.A and Akpaeyo, L (1991**).** Small Ruminant in Household Income of Rural Tiv People.Ibadan Socio-economic Group Conference.Olowu, T.O. and Akinwunmi, J.A. (Eds). Pp. 35-40.

14 Blench, R (1998). The expansion and adaptation of Fulbe pastoralism to sub-humid and humid conditions in Nigeria. African studies Centre, Leiden. *Journal of Sustainable Development and World Ecology,* 6, 220-228.

15 Mukasa, C., Ojo A.O., Adepujo S.O and Dabo, A (2012).Market Analysis of Cattle in Southern Kaduna, Kaduna State Science. *Journal of Agricultural Research and Management*,19(6):1-6.

16 Williams, T.O., Spycher, B and Okike, I (2006). *Improving livestock marketing and intraregional trade in West Africa; Determining appropriate Economic Incentive and policy frame work.* International Livestock Research Institute (IlRI), Nariobi, Kenya. 122p