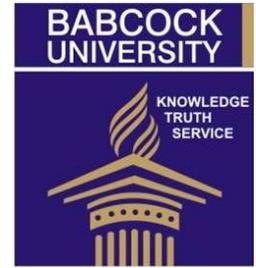




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Human population growth rate and meat supply in Lagos state (1991-2000)

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ABSTRACT

*This study analyzes the human population growth rate and corresponding meat supply trend between 1991 and 2000 in Lagos State. Secondary data covering time and series were obtained from several Public Institutions. Human population data for Lagos State over the period showed an increase of 28.5% giving an average of 6,512,052.1. The livestock figure for cattle transported into Lagos State varied giving a yearly average of 180,273.5 and an increase of 42.68% over the period. Corresponding data for sheep, goat and camels were 75,942.3(218.9%), 70,918.6(343.6%) and 2,224.5(12.6%) respectively. The correlation between human and livestock population were 0.69, 0.42, 0.55 and 0.43 respectively. The corresponding slaughter data shows that of the cattle transported into the state, an average of 145,248.1 heads were slaughtered yearly giving an increase of 80.59% over the period. Corresponding data for sheep, goats and camels were 19,272.2(25.38%), 20,695.5(29.18%) and 1,609.6(73.36%). Correlation between the animals conveyed to Lagos state and those slaughtered were 0.89**, -0.22, 0.30 and 0.62* for cattle, sheep, goats and camels.*

Key words: *Population growth, meat supply, Lagos State, slaughter camels, animal protein.*

INTRODUCTION

Lagos State with an area of only 3,577km² is the smallest state in Nigeria. It is situated on the South Western coast of the country. The strategic location is unique with her natural endowments which have attracted domestic, interstate and international migration of people producing a megacity of immense dynamism, complexity and opportunity. The state is the nation's economic and commercial capital. In 1963, the population was about 1.44million; by 1991when national census was conducted it had grown to 5.7million. LSMEPB (2005-2007) reporting UN-HABITAT studies conservatively estimated the population at over 15million; COS(2006) estimated it at 15.4million and with a density of 4200per km².The population is estimated to be growing at between 6-8% annually, one of the fastest rates in the world possibly reaching a population of 20million by 2010. FMHU (2003) listed the city of Lagos

among the world's six largest cities and projected a population figure of 23 million by the year 2015. This high rate of unrestrained population influx, urbanisation and rural-urban migration to the state metropolitan region placed a high demand on food requirement. Indeed, Lagos is the major recipient of food stuff in Nigeria (Udegbe *et al* 2003). More critical however is the provision of animal protein in the face of inadequate resources to be able to meet the FAO (1992) requirement of 34g per caput for an adult. The movement of live animals into Lagos State especially of the large ruminants, the meat of which is just about half of the weight of the live animals after dressing need to increase in order to meet the ever increasing population. The present study has therefore been designed to evaluate the effect of population growth rate on meat supply in order to plan for food production in Lagos State.

EXPERIMENTAL DESIGN Secondary data covering time series on human population and various species of livestock entering Lagos state and the slaughter data between 1991 and 2000 were collated by month and year. The data were obtained from publication and reports of public institutions including the Central Bank of Nigeria, Lagos State Ministry of Agriculture bulletins, records and reports from the Veterinary Department. The average market weight of livestock were obtained on three randomly selected days each month over a six month period. Measuring belts were used to estimate the individual weights of 3600 cattle, 120 camel, 200 sheep and 200 goats and the per capita animal protein value calculated (Farse,1999).

STATISTICAL ANALYSIS Descriptive statistics such as percentages, means, inferential statistics such as Pearson correlation coefficient were used to test the related hypothesis set up for the study.

RESULT AND DISCUSSION

Table1 shows the estimated human population and livestock species entering lagos state for slaughter between 1991-2000. This showed a population growth from 5,725,116 to 7,369,746 between 1991 and 2000 giving an average of 6,512,052.1 people over the 10 years period. The 2.85% per annum of human population growth in Lagos State is in consonance with the average of 2.83% which was based on the 1991 census figures regarded as the baseline year. However, FMHUD (2003) estimated an annual growth rate faster than 4% in 2003. Lagos, the developing mega-city, has high level of economic activities and high urban drift (Adubi, 1996) resulting in increased demand for foods and a moderate assumption that the animals that entered Lagos State end up on the butchers' tables and ultimately on the dining tables. The corresponding data for livestock species entering Lagos state for slaughter for the same period varied from 120,630 to 340,043 for cattle, with an average of 180,373.5 or an annual increase of 4.27%. For sheep, it varied from 27,867 to 91,513 with an average of 75,942.3 and an annual increase of 21.9%. For goat, it varied from 24,721 to 276,625 with an average of 70,918.6 and an annual increase of 21.9%. The data for camel increased least from 1548 to 1743 at an annual increment of 1.26%. Variation in the livestock population could be observed over the years. Cattle, sheep and goat population showed a decrease as from the baseline year of 1991 as shown table1. The population data

for 1992 showed a decrease in cattle population with the decrease continuing till 1993. The period 1994 to 1995 witnessed an upward curve for all the three species of livestock (fig.1). The period 1997-2000 witnessed an increase in the population of sheep and goat entering Lagos. Also, cattle population witnessed an upward swing between 1996-1997 but in the year 2000, the population of the cattle decreased. Despite these variations it could be observed that the number of livestock of all species brought into the state were relatively low up to 1998 when compared with the base year of 1991. The political crises leading to the 1993 elections and the ensuing frequent fuel crisis contributed in no small measure to the reduction in livestock number transported into the state and which lingered on till 1997. The livestock merchants and transporters who were of Northern extraction and fearful of negative reactions of Southerners to the prevailing political situation greatly reduced their shipment of livestock to the south. Additionally, as reported by Ojiako and Olayode(2008), real livestock production nationwide suffered significant deceleration during the SAP years of 1986 to 1998, the period covering the major time span under review. Another important factor of variation in the livestock population over the years especially for cattle that entered Lagos State may be attributed to the closure of slaughter slabs in the metropolis and the order given to the butchers and cattle dealers to move to the new abattoir and lairage project at Agege, a suburb of Lagos metropolis, in 1993. The order generated some controversies consequence of which was the decision of the refusal of the butchers and cattle dealers to comply with the order of the State Government. Rather, they opted to migrate to the OPIC livestock market in Ogun State just outside the state boundary. Strict supervision at the livestock control post, the blocking of illegal entry routes into the state by cattle transporters and the reopening of the closed slaughter slabs which had earlier led to the migration of the cattle vendors and butchers to the OPIC cattle market in Ogun State reflected in an increase in the population of cattle and small ruminants recorded between 1997 and 2000. Camel population had been comparatively low and stable throughout the period due to the fact that most slaughter camels in Nigeria are not of indigenous sources but are imports from Niger and Chad Republics where the camel populations are also low. Even though camel has superior lean meat qualities (Ghaji and Adegwa, 1986), the preference for camel meat by the populace is very low.

The average weight of animals slaughtered were as follows: Cattle 353kg, Camel 674kg, Sheep 33kg and Goat 23kg. The average weight of cattle slaughtered was higher than 320kg that was recorded for the West Africa sub region (Adebowale *et al*, 1986) but supported the previous report of Arthur.(1969) that weights of cattle brought by cattle dealers to Ibadan were heavier than the national average. Bigger animals do command better prices. Even though bigger and larger numbers of animals were slaughtered, the protein therefrom furnished only 14.2g per caput per day which was insufficient to meet the 34g/caput/day recommended by the FAO (1992) for adult human beings. FMANR (1996) reported on the inability of the production of livestock product in the country to meet the animal protein requirement. It projected a gloomy picture of continuous drop in livestock production and a low value of 5.322g/caput/day of animal protein available for the teeming residents by year, Oyekale (2001) observed that although the production increased in all livestock products between 1991 to 1995 and between 1996 and 1999, the increases were not significant. Indeed, Ojiako and Olayode (2008) confirmed stagnation in the growth of real livestock production between 1999 and 2005. Thus the prospect of meeting the rising demand for animal protein in Lagos State in the near future is ominous.. Of the cattle, sheep, goats and camels transported into Lagos State between 1991-2000, an average of 145,248.1 cattle (80.59%); 19,272.2 sheep (25.38%); 20,695.5 goat (29.18%) and 1,609.6 camel (73.36%) were slaughtered. The trend of number of livestock transported into Lagos State and the number subsequently slaughtered are shown graphically in figure 1 for the four species. Slaughter figures over the years were generally lower than the population figures of livestock entering Lagos State. These trends were observed in all the species of animals except goat in the year 1993, cattle between 1999 and 2000 and camel between 1991 and 1993 and in 1998. The trend observed in table 2 shows that unauthorized slaughtering of animals elsewhere was still being done as earlier observed by Arthur. (1969). Such animals were probably slaughtered privately at home for burials, weddings, chieftaincies and other similar ceremonies for which South Westerners of Nigeria are noted. Camel slaughter data in relation to human population did not show any consistent pattern over the years. Observation on the field showed that camels brought into the state were killed as required and slaughtering was done on specific days of the week especially on Tuesdays, Thursdays

and Saturdays. In those years when the number of animals slaughtered exceeded the number of animals transported into the state, investigation shows that of the animals brought in, some were kept at the slab, fattened and later slaughtered. This could be from animals brought in the previous year. Some animals were reared within the state. With the development of localised ranching animals reared by local farmers some of which were later slaughtered at the slab also accounted for higher slaughter figure for cattle. More importantly however, certain clandestine routes through which vehicles bringing livestock into Lagos State take in order to avoid paying the tax on animals at the control posts were known to exist. Such animals were not recorded as having passed through the control posts, but still ended up at the abattoir slaughter slab. The correlation coefficients between livestock entering Lagos State and the slaughter figures for cattle, sheep, goat and camel are 0.89**, -0.22, -0.30 and 0.62* respectively. There were positively significant relationships between the number of cattle ($P < 0.01$) and camel ($P < 0.050$) that entered Lagos State and the corresponding slaughter data. For sheep and goat on the other hand, there were negative relationships between the animals that entered Lagos and the slaughter figures. This implies that a number of sheep and goats were slaughtered illegally and privately at home so inspection would be avoided and prescribed fees unpaid. The large ruminants which cannot be carried easily around the city without detection have a greater percentage of them slaughtered at the approved abattoirs. On the other hand, sheep and goats are smaller animals, easily carried around to be slaughtered in individual homes for various ceremonies and for which the prescribed fees were not paid or recorded.

CONCLUSION AND RECOMMENDATIONS

The increase in urban population growth rate of Lagos State which was with an average of 2.85% between 1991 and 2000 had grave implications for the per caput animal protein requirements for the people of Lagos State as it was well below the 34g recommended by FAO (1992). Meat from ruminants constituted the major animal protein supplying 14.2g/caput/day of protein leaving a shortfall of 19.8g animal protein required by an adult which was still high. Fish and poultry might not be able to fill this gap. It is thus imperative that there should be further increase in the number of animals available for slaughter in the state in order to meet the animal protein requirements. In this wise, it is recommended

that transit feedlot fattening units be established within the state and in the adjoining Ogun State for improved yield of meat from such animals

Table1: HUMAN POPULATION AND ANIMAL MOVEMENT DATA IN LAGOS STATE (1991 - 2000)

S/N		HUMAN	POPULATION			
			CATTLE	SHEEP	GOAT	CAMEL
1	1991	5,725,116	154,212	91,513	67,043	1,548
2	1992	5,887,137	152,579	69,815	59,250	1,398
3	1993	6,053,743	120,630	34,869	24,721	1,058
4	1994	6,225,064	133,815	48,532	42,692	2,196
5	1995	6,401,233	153,541	56,701	42,692	2,196
6	1996	6,582,388	174,674	27,867	25,191	1,813
7	1997	6,768,669	137,119	44,891	41,656	1,513
8	1998	6,960,228	216,278	37,643	54,451	6,056
9	1999	7,157,197	340,043	55,750	74,865	2,724
10	2000	7,359,746	219,844	291,842	276,625	1,743
	Mean	6,512,052.1	180,273.5	75,942.3	70,918.6	2,224.5

Improved animal welfare during transportation and the decongestion of the Lagos-Ibadan expressway through the construction of alternate truck routes into the state may remove stress related mortalities which has been observed to also reduce the number of

animals finally reaching the abattoir. Additionally, these would eliminate the clandestine routes taken by some of the livestock transporters to escape having to pay the relevant taxes.

TABLE 2 : DATA ON LIVESTOCK SPECIES SLAUGHTERED IN LAGOS STATE BETWEEN 1991 – 2000

YEAR	CATTLE	SHEEP	GOAT	CAMELS
1991	79629	43032	45767	1614
1992	66260	40902	37910	1718
1993	64878	30768	36836	1697
1994	41550	14234	15415	719
1995	80397	18314	17495	1316
1996	74779	16887	18380	1525
1997	122963	12704	14893	2236
1998	147303	10500	10612	3522
1999	421466	927	1057	712
2000	353256	4454	8590	1037
MEAN	145248.1	19272.2	20695.5	1609.6

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