POPULATION DISTRIBUTION OF CATTLE, SHEEP AND GOAT IN NIGERIA

Aminu Nasiru*[1], Muhammad Sabiu Suleiman[2] and Amina Aminu Idris[2]
[1]Department of Animal Science, Faculty of Agriculture, Bayero University Kano
[2]Department of Agricultural Economics and Extension, Faculty of Agriculture, Bayero University Kano
*Corresponding Author: anasiru.asc@buk.edu.ng +234 703 555 0966

ABSTRACT
Nigeria has more than 33% of ruminants' population in West Africa. Non-availability of reliable and accessible information on the distribution, abundance and use of livestock hinders livestock sector planning, policy development and analysis. Nigeria ruminant resource comprised 20,585,000; 47,926,000 and 84,039,000 heads of cattle, sheep and goats respectively. North West has the largest population with 48.21% of the total Tropical Livestock Units (TLUs), followed by 20.82%; 18.88%; 5.63%; 4.11% and 2.35% for North East, North Central, South West, South-South and South East respectively. South West has more ruminant compared with other Southern regions. Agro-Ecological Zones (AEZs) are one of the most important determinants of the characteristics of livestock production systems, in terms of species, breed, stocking capacity, disease pressure and individual productivity. The distribution of ruminants decreases as one move to southern part of the country from the north. In conclusion, North West region has the highest population of ruminants with 52.42; 34.95 and 58.76% of cattle, goats and sheep respectively and South East has the least with 0.08; 6.54 and 1.81% of cattle, goats and sheep respectively. Therefore, it is recommended that ruminants population disaggregation should be based on AEZs than geopolitical regions, livestock census should be conducted to ascertain the actual population as this will aid in future planning.

Keywords: AEZs; Nigeria; Population; Ruminants; TLUs

INTRODUCTION
The importance of livestock to the livelihood of farming communities and agricultural economies of most countries cannot be over emphasized; among others they provide food, income, nutrients to the soil, employment, insurance, traction, clothing, raw materials to the industries etc (Herrero *et al*. 2009). In Nigeria, livestock production contributes up to 6% of Nigeria's Gross Domestic Product (GDP), with approximately 60% of the country's rural population involved in livestock production (NAERLS & FDAE,2014). Otte & Chilonda (2002), reported that Nigeria is within the world region with fastest growing human populations in the world, with growth rates estimated at 2.6 percent per annum. However, this region has the world's lowest per capita consumption levels for livestock products, estimated at 11.0 kg of meat and 27.2 kg of milk in 1999, these are short of 58.33 and 44.03% of developing countries consumption average for meat and milk respectively. These consumption levels are approximately one seventh and one quarter of those in the developed world. The situation can be attributed to low livestock productivity which does not keep pace with human population growth, resulting in declining per capita production of animal products.
To meet up with human population growth, and to avoid declining self-sufficiency ratios, the output of livestock products in the State has to increase by at least 2.6 percent per annum over the next decade. While expansion of the livestock population can contribute to the necessary increase in output, increases in animal productivity are also necessary (Ilu *et al*. 2016). One of the limiting factors in livestock sector planning, policy development and analysis is the non-availability of reliable and accessible information on the distribution, abundance and use of livestock. Considering Nigerian situation of livestock production, it is important to have some means of reviewing the relative abundance, and distribution, of livestock resources for the purposes of quantitative analysis, strategic planning and decision making. Wint & Robinson (2007), itemise significance of understanding regional distribution of livestock which includes: determining overall levels of livestock production, associated feed resource and land requirements; quantification and distribution of environmental impacts of livestock production assessing risk from disease, drought, conflict, etc.; identifying areas of potential conflict between livestock and crop producers; comparing alternative land-use options; assessing the likely impact of technical or policy interventions; improving the targeting of livestock-

related development initiatives for provision of livestock services, development and disbursement of veterinary pharmaceuticals, etc. The objective of the study was to aggregate ruminant population according to geopolitical region of Nigeria in the year 2020.

Ruminant population and distribution in Nigeria

Ruminants are the major livestock reared in Nigeria. In 2020 Nigeria had approximately 20,585,189; 84, 039, 178; and 47,926, 860 heads of cattle, goat and sheep respectively (NAERLS & FMARD, 2020). Cattle are the most important livestock species in terms of outputs and capital value. The larger proportion of livestock population, about 90 % of the country's cattle population and 70% of the sheep and goat population, is concentrated in the northern region of the country. On the other hand, poultry is distributed across Nigeria with greater concentration in the southwest and southeast Nigeria (Anonymous, 2017). Most of the ruminants in northern Nigeria are managed under range-livestock production system and crop-based livestock production system. Seasonal movements of stock are also a characteristic feature of drylands and mountainous areas. Ruminants population increased tremendously in Nigeria from 1996 – 2018. Cattle population increased by 42.30% while that of goat increased by 144% and sheep increased by 153%. Both goats and sheep have an annual population increment of 4%. Livestock population levels vary in both time and space. Population increases with the size of human populations and in concert with cropping levels. However, drought, disease and conflict may severely deplete local livestock populations in the short term (Bourn & Wint, 1994). Conflicts and rural violence occasioned with livestock rustling affected ruminants' population significantly in the last five years. Livestock productivity and levels of production and consumption also vary, and climate change may be already influencing overall patterns of crop and livestock production.

Nigeria is sub-divided into six geopolitical regions and are North Central, North East, North West, South East, South-South and South West. The potential for livestock production is defined in terms of the carrying capacity measured in Tropical Livestock Units (TLUs) per km^2. The TLUs conversion factors used were as follows cattle – 0.70, sheep and goats – 0.10 (Jahnke *et al*. 1988). Ruminants population (TLUs) of Nigeria in 2020 comprised 14,409,500 cattle; 8,403,900 goats and 4,792,600 sheep (NAERLS and FMARD, 2020). North West has the largest population with 48.21% of the total TLUs, followed by 20.82%; 18.88%; 5.63%; 4.11% and 2.35% for North East, North Central, South West, South South and South East respectively (Figure 1). Table 1 shows the distribution of cattle, goats and sheep according to geopolitical regions. Livestock population and density especially ruminants are distributed based on Agro-ecological zones (Jahnke, 1982). AEZs are one of the most important determinants of the characteristics of livestock production systems, in terms of species, breed, stocking capacity, disease pressure, individual productivity, etc (Otte and Chilonda, 2002). Sub-saharan Africa was grouped into five Agro-ecological zones by Winrock (1992), these zones are arid, semi-arid, sub-humid, humid and highlands zones. The basis of the classification is the amount and distribution of rainfall, the altitude (which affects temperature) and the length of growing period. More than half of all ruminant livestock in sub-Saharan Africa are kept in the arid and semi-arid zones. Although the lower rainfall areas of the semi-arid zone (50 to 75 cm rainfall per year) are best suited to grazing, livestock production in this zone is usually a component of mixed smallholder crop-livestock systems. The semi-arid zone has cattle as its lead species followed by goats and sheep. In the subhumid zone, livestock production is undertaken in mixed crop-livestock systems. Cattle are the lead species, followed by goats and sheep.

CONCLUSION

North West region has the highest population of ruminants with 52.42; 34.95 and 58.76% of cattle, goats and sheep respectively and South East has the least with 0.08; 6.54 and 1.81% of cattle, goats and sheep respectively. The population density of ruminants in Nigeria decreases as one move southwards, although recent evidence have shown livestock migration from north to southern parts in search of greener pasture. Therefore, it is recommended to aggregate ruminants according to AEZs than geopolitical zones as some states cut across different zone. There is also need to conduct livestock census in order to ascertain their population, this will enable proper planning that will curtail crisis between farmers and herders as well as improving ruminants productivity with aim of meeting local demands in animal proteins as well as source of foreign income.

Table 1: distribution of ruminants according to geopolitical region in Nigeria, 2020

	Class of ruminants (%)		
Regions	Cattle	Goats	Sheep
North Central	18.54	21.98	14.50
North East	27.43	11.78	16.78
North West	52.42	34.95	58.76
South East	0.08	6.54	1.81
South South	0.8	9.70	4.27
South West	0.72	15.04	3.88

Source: NAERLS and FMARD, 2020

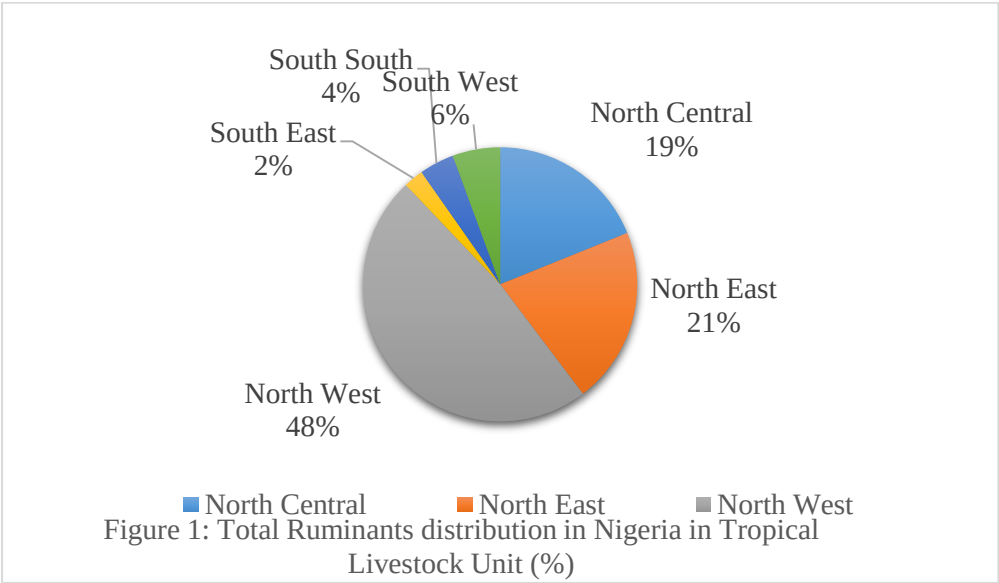

Figure 1: Total Ruminants distribution in Nigeria in Tropical Livestock Unit (%)

REFERENCES

Anonymous (2017). Livestock Productivity and Resilience Support Project. A World Bank

Bourn, D. and Wint, W. (1994). Livestock, land use and agricultural intensification in sub-Saharan Africa. Pastoral Development Network 37(a): 1-22. London: Overseas Development Institute

Herrero M, Thornton PK, Gerber P, Reid RS (2009) Livestock, livelihoods and the environment: understanding the trade-offs. *Current Opinion in Environmental Sustainability 1 (2):111-120.*

Ilu, I. Frank, Y. and Annatte, I. (2016). *Review of the livestock/meat and milk value chains and policy influencing them in Nigeria*. FAO and ECOWAS.

Jahnke, H.E. (1982). Livestock production systems and livestock development in tropical Africa. Kiel, Germany, Wissenschaftsverlag Vauk.

Jahnke, H.E., Tacher, G., Kiel, P. and Rojat, D. (1988). Livestock production in tropical Africa, with special reference to the tsetse-affected zone. *Livestock production in tsetse-affected areas of Africa.* Proceedings of a meeting held in Nairobi, 23-27 November 1987. Nairobi, ILCA/ International Laboratory for Research on Animal Diseases (ILRAD). pp 3-21.

NAERLS and FMARD (2020). Wet season Agricultural performance in Nigeria, NEARLS, Ahmadu Bello University Zaria Press. ISBN: 2408-7459; 291p

NAERLS and FDAE (2014). Agricultural Performance Survey Report of 2014 Wet Season in Nigeria, NAERLS, Ahmadu Bello University Zaria

Otte, M. J. and Chilonda, P. (2002) Cattle and small ruminant production systems in sub-Saharan Africa: A systematic review. A FAO Publication

Winrock International (1992) Assessment of animal agriculture in Sub-saharan Africa. Winrock International Institute for Agricultural Development, Arkansas, USA. A World Bank Publication

Wint, G.R.W. and Robinson, T.P. (2007). Gridded livestock of the world 2007, by. Rome, pp 131. FAO Publication