

Pig population and distribution pattern in Ibadan/Ibarapa area of Oyo state

Sosina, Adedayo Olalekan

Department of Animal Science, University of Ibadan, Ibadan

Corresponding Address: dayososina@gmail.com

Abstract

Pig production in the rural areas has not been linked with the market thus affecting pig business enterprises adversely. Many had opined that the various challenges confronting pig production to inadequate capital, land, etc. However, information on pig population and distribution is scanty, thus the need to investigate pig population and distribution in the Ibadan/Ibarapa area of Oyo state. A three-stage sampling technique was used to purposively select 180 respondents, nine respondents per village, three villages per cell and three cells randomly selected in the study area were evaluated. Parameters measured were average litter size (Tropical Livestock Unit, TLU), the pig distribution pattern of pigs across Oluyole, Ona-ara, Akinyele, Egbeda, Ido and Ibarapa East locations. The ARC-GIS software processed the Global Positioning Systems (GPS) data of the pig population using the ARC-GIS model 10.0. Data analyzed with descriptive statistics. The mapping of the pig farmers' distribution was done using the spatial analytical tool of the GIS. The farmers' average litter size of pigs (TLU) ranged 2 (Ona ara and Akinyele) to 100 (Egbeda). The average litter sizes (TLU) were 5, 20 and 40 in Oluyole, Ibarapa East and Ido, respectively. Only Egbeda had big piggery farms with an average size ranged above 20 piglets. The large pig production in Egbeda was influenced mainly by the abundance of agro-industrial by-products and feed resources. Off-takers of pig production value chain should focus on Egbeda for the supply of pigs with the advantage of resources and other production factors.

Key Words: Bioinformatics, ecological zones, marketing, population, pig distribution

Introduction

Sourcing for pigs is a major challenge to business thus adversely affecting marketing and profitable production, especially in the rural areas. There is a serious disconnect between production and marketing in the pig value chain system. There was no concerted effort towards the linkage of production to market to stimulate production efficiency among pig farmers in the Ibadan/Ibarapa area of Oyo state. The spatial distribution and population of these farmers make access to market a herculean task thus making the study relevant. There is a need to identify the location of the livestock producers for effective agricultural planning and policy implementation. Geographic Information System (GIS) is a computerized database management system for capture, storage retrieval, manipulation, analysis and display of spatial information (Gebber and Adamchuk, 2010). Information on the location and livestock production can be collected using spatial analytical tools of GIS (Sosina, 2017). Also, it forms a reliable data for agricultural planning and policy formulation (Rilwani and Ikhuoria, 2006).

In Nigeria, the relevance of space technologies in technological advancement becomes more pronounced after the launch of Nigeria SAT-1 in March 2003 in Siberia, Russia (Nigeria Sat 1 report, 2003). The high-resolution satellite was only useful in taking landmarks and settling boundary disputes (PrecisionAg.com.Org.2003). However in the launch of the low-resolution satellite of Nigeria, SAT-2 in 2005 in Siberia was more relevant to Agriculture (Oyinloye and Oloukosi, 2013). The spatial analytical tool of GIS was used to map poultry farmers in southwestern, Nigeria (Omodele and Okere, 2014) and its relevance in animal production management in Ibadan/Ibarapa area, Oyo state (Sosina, 2017). Olugaza *et al.* (2014) reported the relevance of bioinformatics in diseases epidemiology study among farmers in a rubber plantation in Liberia, Forest Resources (Olatoye and Odutaru, 2013), Land resources (Rilwani and Ikhuoria 2006), Nutrient evaluation for fertilizer application (PrecisionAg.com.Org.2003), Feed Resource management (Babayemi *et al.*, 2014) and spatial patterns in crop-livestock evolution pathways in West Africa (Rilwani and Gbekeji, 2009).

It is necessary to provide (production) information about pig business enterprises in Nigeria. Such information is needed for proper planning and regulation of the industry in Nigeria (Rilwani and Ikuoria, 2006). Available data on the current entrepreneurial characteristics and constraints to the robust development of pig business enterprises in Southeastern Nigeria are scanty (RIM, 2010). Hence, the study tries to map the pig production business using the spatial analytical tool to identify the location and population of pigs among farmers in the Ibadan/Ibarapa area of Oyo state.

Materials and Methods

The study took place in the Ibadan/ Ibarapa Area of Oyo State of Nigeria, the area is ethnically heterogeneous with a high concentration of smallholder crop and livestock farmers. Oluyole, Ona-ara, Akinyele, Egbeda, Ido and Ibarapa East LGA locations were purposively selected for the study. The Global Positioning Systems (GPS) of the farmers' location, livestock population, and distribution were recorded. The recorded GPS data of pig respondents were transferred into the ARC-GIS. The ARC-GIS software processed the data into location using the ARC-GIS model 10.0 from the GIS unit of the Department of Geography, University of Ibadan. Data analyzed using descriptive statistics.

Results

The pig farmers' locations were mapped using the spatial analytical tool of the GIS (as in Fig.1) and the average litter size of pigs both indigenous and improved strain kept. The average litter size of pigs among respondents ranged from 2 to 100 as shown in Fig.2. Egbeda had the highest average litter size of 100 while the lower values were found among farmers in Ona-ara and Akinyele. Although, the average litter sizes of 5, 20 and 40 were found among farmers in Oluyole, Ibarapa East and Ido, respectively. The large population of pig farmers was attributed to other production factors aside from pig's omnivorous nature. The study showed that piggery business thrived best in Egbeda probably due to the presence of big agro-industrial companies that produce major feed ingredients for pig production. With the little sales from rural markets and patronage from eateries, pig business is on the increase in the urban areas which slightly favored Egbeda.

Discussion

The pig distribution patterns across the study areas result could be due to the management systems adopted by farmers of the semi-intensive and extensive systems of production practice. This agreed with Bolorunduro *et al.* (2004) who supported commercial pig production in the humid tropics. The population, distribution patterns, breeds and classes of the pigs identified could be important for policy framework. This agreed with Gebber and Adamchuk (2010), Oyinloye and Oloukosi (2013) and Olugaza *et al.* (2014) that reported relevance of bioinformatics data in livestock production. Moreover, off-takers of the pig production value chain should look in the direction of Egbeda for the supply with favorable climate and other production factors. The government should plan for policies and programs that could enhance the increase in the production of pigs in the study areas. Also, it will assist with interventions necessary to sustain the pig value chain program through increased funding and livestock extension. This agreed with Babayemi *et al.* (2014) that reported the need for more agricultural interventions.

Conclusion

The use of bioinformatics can link pig farmers to market easily and interventions from the government and policy makers reach farmers efficiently.

References:

Babayemi, O. J., A. Samireddypalle, A.O. Sosina, A. A. Ayantunde, I. Okike, and A. J. Duncan

(2014) Characterization of farming and livestock production systems using the feed assessment tool (FEAST) in selected local government areas of Osun State, Nigeria. Research program on integrated systems for the humid tropics ILRI Technical Report, December 2014

Bolorunduro, P.I, I.E.J. Iwuanyanwu, S.O. Aribido and A.O.K. Adesehinwa (2004) Effectiveness of extension dissemination approaches and adoption levels of livestock and fisheries technologies in Nigeria Food, Agriculture and Environment Vol.2 (1): 298-302.

Gebber, R. and V. I. Adamchuk (2010) Precision Agriculture and Food Security Science: 327-828.

NigeriaSat-1 (2003): Images and Operations of Nigeria earth observations satellite: NigeriaSat 1.

Olatoye, T.A, and G.O.Odularu (2013) Applications of remote sensing and geographic information systems technologies in livestock management. A paper presented at the Conference of the International Livestock Research Institute (ILRI), held at Hotel Africana Conference Centre, Kampala, Uganda on September 9-11, 2013.

Olugasa, B. O., J.B. Dogba, B. Ogunro, E. A. Odigie, J. Nykoi, J. F. Ojo, O. Taiwo, A. Kamara, C. K. Mulbah and A. J. Fasunla (2014) The rubber plantation environment and Lassa fever epidemics in Liberia, 2008–2012: A spatial regression Spatial and Spatio-temporal Epidemiology.11.pp163- 174

Omodele, T. and I. A. Okere (2014) GIS application in poultry production: Identification of layers as the major commercial product of the poultry sector in Nigeria Livestock Research for Rural Development, 26(5) pp.122-124

Oyinloye, R.O, and J. O. Oloukosi, (2013) Spatio-temporal assessment and mapping of the Land use Land cover Dynamics in the Central Forest Belt of Southwestern Nigeria. Res. J. Environmental Earth Sci.4. (7):720-730

PrecisionAg.com.Org (2003).Introduction.fromPrecisonag.com/htm1/introduction.html

Rilwani, M. L. and I. A. Ikhuoria (2006) Precision Farming with Geoinformatics: A New Paradigm for Agricultural Production in a Developing Country. Transactions in GIS, 10 (2): 177 – 197

Rilwani, M. L. and J. O. Gbakeji (2009) Geo-informatics in Agricultural Development: Challenges and Prospects in Nigeria J Soc Sci, 21(1): pp 49-57

RIM (2010) RIM (Resource Inventory and Management), Nigerian National Research Survey (Vol 4). Report by Resource Inventory and Management Limited (RIM) to FLD, Abuja, Nigeria

Sosina, A.O. (2017) Assessment of crop residues as feed resources for crop-livestock production Systems in the Ibadan/Ibarapa area of Oyo State, Nigeria. A Ph.D. thesis submitted to the Department of Animal Science, University of Ibadan, Nigeria.

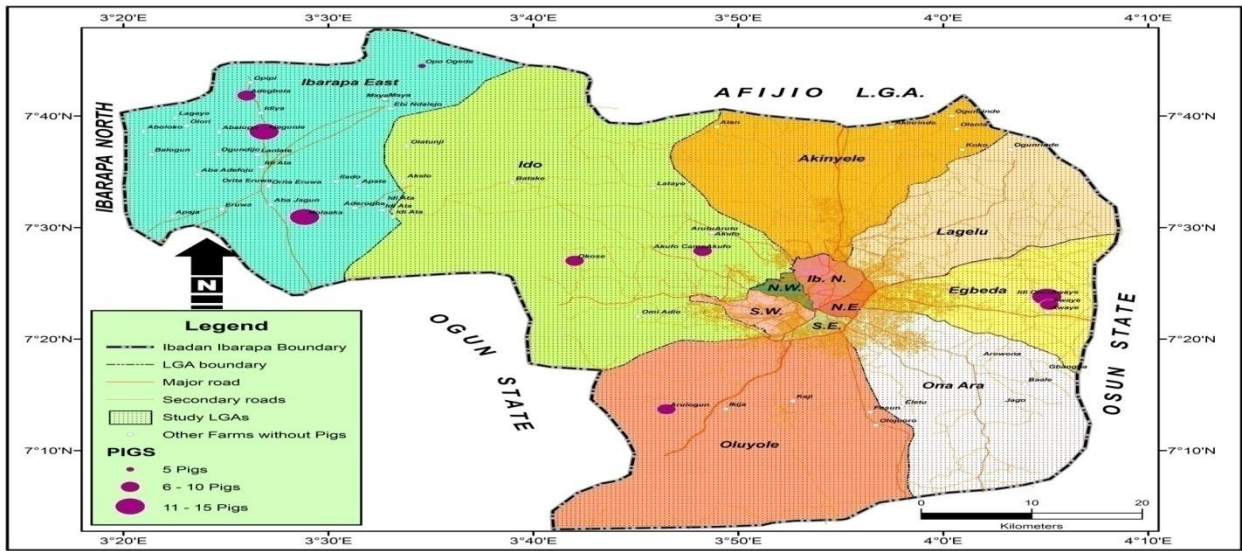


Fig. 1: GIS mapping of pig population and distribution in Ibadan/Ibarapa area

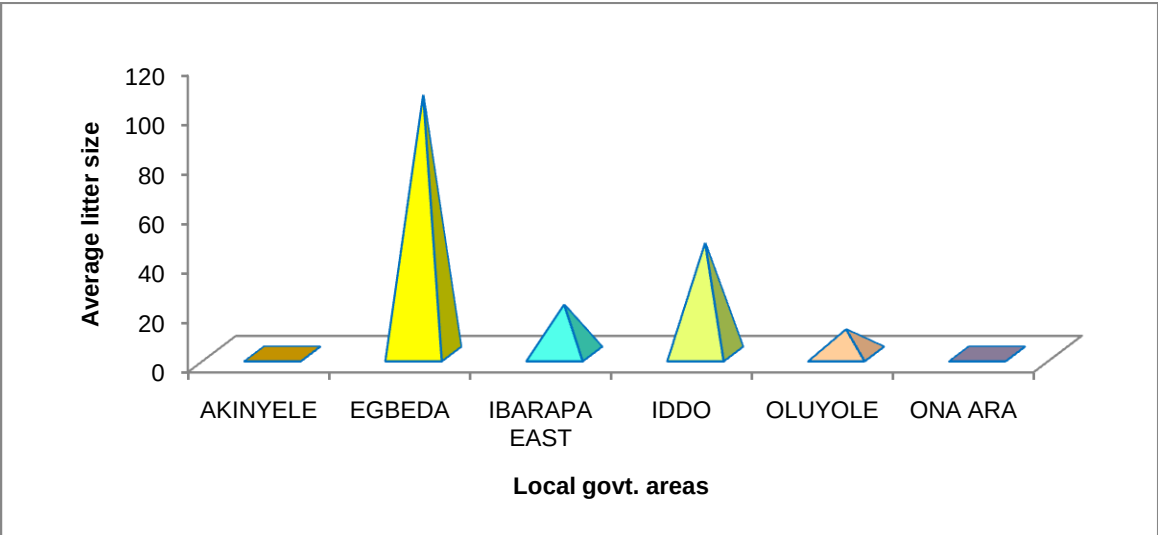


Fig.2: Graphical representation of pig production distribution in Ibadan/Ibarapa area