

CONTRIBUTIONS OF SMALL RUMINANT PRODUCTION TO FARMERS' LIVELIHOOD IN DERIVED SAVANNAH AREA OF OYO STATE

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ABSTRACTS

The impact of small ruminant husbandry to farmers' livelihood is of concern to Government's policy formulation. This study investigated the contribution of small ruminant production to farmers' livelihood in derived savannah area of Oyo State, Nigeria. Small ruminant farmers were purposively selected with the assistance of extension agents using a three tier multi stage sampling technique in which 225 respondents were selected. Parameters measured include livelihood enterprises, % income on household livelihood, record of sales, 5% mortality rate and seasonality. Qualitative and quantitative data collected were transcribed into Microsoft Excel the Feed Assessment Tool (FEAST) Excel macro program. The average household livestock holdings were 20.08±2.16 (sheep), 32.00±3.26 (goats) while average weight of the animals (kg) were 20.00±4.27 (sheep), 15.00±3.89 (Goat). The dominant breed for sheep and goat was West African Dwarf breed. The ranking and % income of the livelihood enterprises were primary (60), secondary (20) and tertiary (10) for Agriculture, Livestock and remittance, respectively. The average household goats sold over the past 3 years were 15.00±1.36 (male) and 10.00 ±1.45 (female) with average weight (Kg) range 15.56±2.78 to 20.67±3.34. The average household sheep sold over the last 3 years were 25.00±3.87 (male) and 30.00±4.28 (female) with average weight (Kg) ranged 25.78±5.27 to 30.89±6.47. The seasonal average sales (₦) ranged 4,000 to 7,000 and 6,000 to 13,000 for goat and sheep, respectively. Agriculture, the main stay of the heterogeneous population in derived savannah area, with small ruminant contribution to the individual household income and livelihood cannot be undermined.

Keywords: Ecological zones, Feed resources, Household income, Livestock enterprises, Policy formulation, Seasonality.

INTRODUCTION

The continuous neglect of small ruminant production had adverse effect on economies of households especially at the system level. If small ruminant production is given the right and needed attention by farmers and policy makers, there will be significant reduction in poverty, improve food security which is in line with the sustainable development goals (SDG's). The impacts on food (animal protein) and nutrition security as well as livelihood on national economy are significant and far-reaching. The sustainable livelihood approach (SLA) provides a better understanding of rural livelihood (Sinkaiye and Ajayi, 2012). While assessing the sustainable livelihood, some donor agencies provide framework to evaluate the means of livelihood in the community (Sinkaiye and Ajayi 2012), which provide information on livelihood vulnerability, resistance, risk attitudes and sources of livelihood (ATA, 2013). Average annual household income of respondents was influenced by the location, gender and livelihood enterprises (Haile et al. 2010). Income was higher from the sales of livestock and livestock products in some locations compared with sales from crop products, which was higher than the non-agricultural activities or enterprises. The purpose of the National Livestock Transformation Plan Strategy (NLTPS) was to provide structure for agricultural subsector development that can become a catalyst for building national prosperity. Strategic interventions are aimed at modernizing livestock production through the establishment of ranches, mitigating the escalating crisis between pastoralists and farmers, and improving the broader supporting architecture around these issues (FMANR report 2017). Small ruminant production adoption substantially reduces household poverty and stunting for children younger than age five thus influencing farmers' household nutrition and livelihood (Sosina et al. 2019). Furthermore, beyond nutrition and income roles, livestock serves as a buffer resource for farmers to use in responding to emergencies, such as crop failure, as well as acts as a live bank, facilitating both income distribution and savings (Kabunga 2014). Farmers' livelihood also depend on sales of matured or weaners at village markets especially among women (Sosina 2017). The significant roles played by small ruminant production in the household and national economies cannot be overemphasized. Thus the study investigated the contribution of small ruminant production to farmers' livelihood in derived savannah area of Oyo state.

MATERIALS AND METHODS

The study was conducted in the derived savannah area of Oyo State, ethnically heterogeneous with a high concentration of smallholder crop and livestock farmers. Small ruminant farmers were purposively selected using a three tier multi stage sampling technique of about 225 respondents. Parameters measured includes livelihood enterprises, % income on household livelihood, record of sales, mortality, seasonality. Qualitative and quantitative data collected through questionnaire were transcribed into Microsoft Excel the FEAST Excel macro program (www.ilri.org/feast) (Duncan 2014).

RESULTS AND DISCUSSIONS

Livestock holding of the farmers: The predominant livestock among farmers in the study area were sheep, goat and poultry with the dominant breed of sheep and goat as the West African Dwarf (WAD), the indigenous type. The average household livestock holding of sheep, goat and poultry were 20.08 ± 2.16 , 32.00 ± 3.26 and 55.00 ± 7.34 , respectively (Table 1). The average live weight per animal (Kg) were 20.00 ± 4.27 (sheep), 15.00 ± 3.89 (Goat) and 2.00 ± 0.78 (poultry).

The average live weight of the dominant livestock agreed with Sosina (2017) who reported similar range of 15-25 Kg for sheep and goat among indigenous WAD breeds. However, this result was in contrast with the report of Amole and Ayantunde (2016) higher weight for other indigenous breeds in the drier and Sahel regions. Sosina (2017) also reported low Tropical Livestock Unit (TLU) for sheep and goat among farmers' in the Ibadan/Ibarapa zone of Oyo state. Chah et al. (2013) reported the high incidence of sheep and goat production in rural areas of Enugu, Nigeria though in contrast with Samireddypalle et al (2014a) reported lower percentage of sheep and goat farmers among peri-urban farmers.

Contributions of the livelihood enterprises: FEAST also provided the opportunity to evaluate the contribution of livelihood activities to household income as in Table 2. FEAST evaluated contributors to the farmer average % of income as agriculture, livestock, business, remittance, labour and others; which agreed with Sosina (2017) who reported similar enterprises contribution to livelihood in Ibadan/Ibarapa area.

The contribution of agriculture to the livelihood activities of household income was 60%. Agriculture form the main stay of the respondents' income which supported FAO (2015) that agriculture remains the highest contributor of the populace especially in the sub-Saharan Africa. However, the result was contrary to that of ATA (2013) reported higher national income accruing from oil than agriculture. The average % contribution of livestock to the farmers' income was 20%, suggested livestock enterprise was ranked next to agriculture among respondents. This was supported by Sosina (2017) that livestock was among the major contributors to farmers' income contrary to Amole and Ayantunde (2016) that ranked livestock ahead of crop agriculture in the contribution of livelihood activities to household income. The contribution of remittance to the average respondents was 10. The remittance was income from wards, relations outside the village or systems level from cities or abroad which are very consistent or monthly (Sosina 2017). Remittance to the livelihood of respondent farmers agreed with the submission of Wassena et al. (2013) that reported high remittance level among farmers in Ethiopia. The % contributions of labour and others to the farmers' income from the study area were 3 and 2 % each. Other contributors to the farmers' income could be inconsistent and unexpected donations and gifts. Haile et al (2010) corroborated the above findings on the contributions of livelihood enterprises to household income with respect to male and female household head (MHHs and FHHs). Basically, the ranking and % income of the livelihood enterprises were primary (60), secondary (20) and tertiary (10) for Agriculture, Livestock and remittance, respectively. The lower ranked contributors to livelihood income were Business, Labour and others were 3%, 5% and 2%, respectively.

Income: The household income and livelihood of farmers' in the study area was dependent on the number of small ruminants put to sale especially female household head (FHHs) (Table 3). The number of male and female animals, sheep and goat put for sales at nearby or village market determines the income and livelihood of the household. Market price of small ruminants is a function of the size and location. The number of male goats and sheep over the past 3 years were (15.34 ± 1.27)

and (25.82 ± 2.38), respectively. The number of female goats and sheep over the past 3 years were (10.27 ± 1.45) and (30.78±3.67), respectively. The approximate weight of male goats and sheep sold over the past 3 years were (15.47± 1.78) and (25.27±2.78), respectively. The approximate weight of female goats and sheep were (20.47±2.67) and (30.72±3.89), respectively. The live weight of male goats and sheep sold were similar to the results of Sosina (2017) of small ruminants sold at village markets and household assets (Babayemi et al. 2014b). However, Duku et al (2010) reported higher live weight and number while examining the dynamics of small ruminant production in the derived savannah.

Average local market price of goat and sheep: The average market prices of sheep and goat largely depends on a number of factors which include the festive periods and market forces of demand and supply (Table 4). Moreover, the average market prices of sheep and goat ranged (6000.02 ± 12.78) to (13000.29 ±13.89) and (4000.13 ± 8.35 to 7000.38 ± 10.89), respectively. The average weight of sheep (male and female) are usually higher than that of goat which also reflect on the market prices as well. The result agreed with the submission of Samireddypalle et al (2014b) and Sosina et al (2019). Furthermore, the breeds and management as well as the physiological state of the small ruminant influences the average market prices. Kabunga (2014) reported higher live weights for sheep and goats in Kenya while lower weights were recorded for indigenous breeds of Ghana (Duku et al 2010).

CONCLUSION

Crop-livestock production system of management is a panacea to crop farmers and pastoralists crises in the tropics. The livelihood of the small holder farmers' is largely influenced by the weight of the animals, number of animals put to sales, prices of the animals and period of sales. Hence, government policies should look for means of increasing livestock production among small holder farmers.

REFERENCES

- Amole T.A. and A.A. Ayantunde (2016). Assessment of Existing and Potential Feed Resources for Improving Livestock Productivity in Niger. *International Journal of Agricultural Research* 11: 40-55.
- ATA.MNAR (2013).FMARD Nigeria .GES live data dashboard. Retrieved on 02/12/2014 from <http://www.fmard.ng/ges-live-data-dashboard> Score card FMA&RD Mid-Term Report January, 2013
- 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
- Duku S., J. Akke., Z.Van der Zijpp., P. Howard (2010). Small ruminant feed systems: Perceptions and practices in the transitional zone of Ghana. *Journal of Ethno-biology and Ethno-medicine*, 6:11 <http://www.ethnobiomed.com/content/6/1/11>
- Duncan A., L. York, B. Lukuyu, A. Samaddar and W. Stur (2012).Feed Assessment Tool (FEAST) : A systematic method for assessing local feed resources availability and use with a view to designing intervention strategies aimed at optimizing feed utilization Questionnaire for Facilitators (Version 5.3) update 15 July 9, 2012 ILRI, Addis Ababa, Ethiopia.
- FAO (2015). The state of food and agriculture: social protection and agriculture: breaking the cycle of rural poverty. FAO publication
- FMANR report (2017). National Livestock Development Programme strategy framework submitted to the Federal Ministry of Agriculture and Natural Resources (FMANR). 2017.
- Haile G, Haile A and G. Asghedom (2010).Baseline Survey emergency response addressing livelihood (food) security of former IDPS/expellees, host communities and drought affected rural populations in Eritrea. A UNDP project report, Asmaria, Eritrea.
- Kabunga N (2014) Adoption and Impact of Improved Cow Breeds on Household Welfare and Child Nutrition Outcomes: Empirical Evidence from Uganda. Contributed Paper prepared for presentation at the 88th Annual Conference of the Agricultural Economics Society, Agro Paris Tech, Paris, France 9 - 11 April 2014.

NLTP, FMANR (2017) National Livestock Transformation Programme report submitted to the Federal Ministry of Agriculture and Natural Resources, (FMANR).

Samireddypalle A., A. Ayantunde, A. Okike, O.J. Babayemi, A.O. Sosina and A. Duncan (2014a) Assessment of livestock feed value chain in Ido and Ogo Oluwa local government areas of Oyo state. CGIAR Research program on Integrated Systems for the Humid Tropics. ILRI Technical Report December 2014 [www cg space.cgiar.org](http://www.cg-space.cgiar.org)

Samireddypalle A., A. Ayantunde, A. Okike, O.J. Babayemi, A.O. Sosina and A. Duncan (2014b) Assessment of Livestock feed value chain in Ayedire and Atakumosa East local government areas of Osun state. CGIAR Research program on Integrated Systems for the Humid Tropics. ILRI Technical Report December 2014 www cg space.cgiar.org

Sinkaiye T. and Ajayi A. O. (2012) Participatory Rural Appraisal and Planning Methodologies for Sustainable Development. ISBN: 978-978-51134-1-9.

Sosina A.O. (2017). Assessment of crop residues as feed resources for crop-livestock production

Systems in Ibadan/Ibarapa area of Oyo State, Nigeria. A Ph.D. thesis submitted to the Department of Animal Science, University of Ibadan, Nigeria.

Sosina A.O., Babayemi O.J. and A.E. Adekoya (2019) Crop-livestock production systems contributions to livestock diet and farmers' livelihood in Ibadan/Ibarapa area, Oyo state, Nigeria. *Wayamba Journal of Animal Science* (WJAS), Vol.11, Pg 1827- 1835.

Wassena F.J., W. Lukuyu, B. Mangesho, W. E. Laswal, G. H. Bwire, J. M. N. Kimambo, A.E and B.L. Maass (2013). Determining Feed Resources and Feeding Circumstances; Usefulness and Lessons learnt by applying FEAST in Tanzania. From [http; //www.tropentag.de/2013/a](http://www.tropentag.de/2013/a).

Table 1: Livestock holding of the farmers.

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Type of Animal	Average Number of animals	Approximate weight per animal (kg)	Dominant Breed
Sheep	20.08±2.16	20.00±4.27	WAD
Goats	32.00±3.26	15.00±3.89	WAD
Poultry - village conditions	55.00±7.34	2.00±0.78	Local birds

Table 2: Contributions of the livelihood enterprises

Name	Rank	%of income
Remittance	Tertiary	10
Livestock	Secondary	20
Agriculture	Primary	60
Labour		3
Business		5
Others		2

Table 3: The household farmers' income from the sale of small ruminants

Type of Animal sold	Number	Approximate weight
Number of male goats sold over the past 3 years	15.34 ± 1.27	15.47 ± 1.78
Number of female goats sold over the past 3 years	10.27 ± 1.45	20.47 ± 2.67
Number of male sheep sold over past 3 years	25.82 ± 2.38	25.27 ± 2.78
Number of female sheep sold over past 3 years	30.78 ± 3.67	30.72 ± 3.89