



Effect of Homestead Animal Farming on Household Food Security and Economic Empowerment

*¹Ademulegun, T.I. & ²Oladunni, M.E.

¹Nutrition And Dietetics Department, Rufus Giwa Polytechnic, Owo, Ondo State, Nigeria.

² Animal Production And Health Department, Rufus Giwa Polytechnic, Owo, Ondo State, Nigeria.

*Corresponding Author

Abstract

This study was carried out to investigate the effect of homestead animal rearing on household food security and economic empowerment. Structured questionnaire was purposely distributed to one hundred and forty nine homestead animal rearers in urban and rural areas of Owo Local Government of Ondo state. Information was obtained on their socio-economic and demographic characteristics, types of animal kept, utilization of the income and economic empowerment. Data collected were analyzed using frequency and percentages. The result shows that the predominant animals were poultry (38.66%) and goat (32.98%) while pig was the least reared (4.12%). The animals were reared mainly on free range (39.47%) and local cage (38.16%). High proportion (62.16%) of the income derived from homestead animal sale was used to augment family feeding. Of the respondents, 8.9% derived their livelihood from homestead animal rearing. Homestead animal keeping impacts positively on household food security, standard of living and economic empowerment.

Keywords: *Homestead, Animal, Household food security, Empowerment.*

Introduction

Given the crucial importance of access to food in a world of plenty where massive hunger persists, the right to adequate food means that every man, woman and child in the community must have physical and economic access at all times to adequate food using a resource base appropriate for its procurement in ways consistent with human dignity. Intake of adequate quantity and quality food is pre-requisite for normal and productive living of human being. Food security exists when all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life one year to the other and within the year (FAO 1996). At household level, food security refers to the ability of the household to secure, either from its own production or through purchases adequate food for meeting the dietary needs of members (Hassan and Sultana, 2011). Food security should be a target that any meaningful person or nation aims at achieving. This is particularly necessary because food security constitutes one of the indices for measuring poverty level (Ndaeyo 2007). Though worldwide natural agriculture had tried to produce enough to meet the energy requirement of each of the nearly seven billion people on earth, almost one in eight people are unable to access enough food to lead a active healthy lives- they are food insecure (Gordon 2003). If the world population is to be fed adequately, the present food production level will have to be doubled and other strategies encouraged. One of such strategies that need some level of assessment is homestead farming (Ndaeyo 2007). Okafor and Fenandes, (1987), Rugalema *et al.*, (1994), described homestead farming as multi-layered stands of annual and perennial plants adjoining residential houses and managed sometimes with livestock by household labour for food, cash income, social and cultural needs of the family.

Homestead food production programme had mitigated the combined adverse consequences of high food prices and economic instability on food security and nutritional status of poor households through improving household production and consumption (HKI 2010). Additionally Homestead food production programme empowered women. Livestock play an important role in supporting the social and economic safety nets of households and communities. They are central to people's livelihoods, food security and nutrition; they act as a "bank" to be called upon in times of stress or need (either sold, traded or slaughtered) (John and Richard 2011). Livestock, especially poultry species, have shown to provide an effective first step in alleviating abject rural poverty (Mack *et al.*, 2004). Homestead animal farming has improved productivity and income for farmers. It has contributed to household financial capital, purchases from livestock income has helped in filling the food deficit gaps and also enhances the food security of vulnerable households (Simainga *et al.*, 2011). Economic empowerment refer to programs aiming directly at raising people's income, as opposed to improving their health or education, such programs include agriculture- focused interventions, microfinance support e.t.c. It focuses on mobilizing the self help efforts of the poor, rather than providing them with social welfare (Deneulen and Lila 2009). Economic empowerment is pre-requisite for household food security.

As food insecurity is persisting, because of low purchasing power most especially in the developing countries where the poverty level is high and regular unemployment rate is on the increase, this study is design to assess the impact of homestead livestock farming on household food security and economic empowerment.

Materials and Methods

Study Area:

The study was carried out in Owo Local Govt. Area of Ondo-state, Nigeria. Owo is 48km East of Akure and 400km North of Lagos located on 7.183°N and 5.583°E of Equator. It has a land area of about 63km². The community is predominantly agrarian producing cocoa, kola nut, orange, yam, cassava, maize among others. Owo had ten wards, with the metropolis having six and four for the suburb. Two suburb communities and Owo metropolis were used for the study.

Methodology: Data were collected from one hundred and forty nine (149) homestead animal keepers in the suburb (50) and the metropolis (99), using structured questionnaire (purposely distributed) designed to elicit information on the respondents' socio economic and demographic characteristics, types of animal kept, management and housing, income derived, utilization of the income, food security and economic empowerment.

Statistical Analysis

Data generated were analyzed using descriptive statistics such as mean, frequency and percentage.

Result and Discussion

Table 1: Socio-economic and Demographic characteristics of respondents.

	Urban		Rural		Total	
Age (year)	(n)	%	(n)	%	(n)	%
18-30	21	21.21	20	40	41	27.52
31-42	31	31.31	8	16	39	26.52
43-54	27	27.27	14	28	41	27.52
>54	20	20.20	8	16	28	18.79
Marital Status						
Single	25	25.3	6	12	31	20.8
Married	28	56.6	31	62	87	58.4
Divorced	15	5.05	4	8	9	6.04
Separated	31	3.03	5	10	8	5.4
Widow	10	10.10	4	8	14	9.4
Education						
No Formal Education	11	11.11	12	24	23	15.4
U.B.E.	8	8.08	10	20	18	12.1
SSCE/TC	30	30.30	11	22	41	27.5
ND/NCE	19	19.20	10	20	29	19.5
HND/BSc	31	31.30	7	14	38	25.5
Occupation						
Unemployed	13	13.1	0	0	13	8.9
Civil servant	10	10.1	4	8	14	9.4
Teaching	18	18.2	9	18	27	18.1
Trading	16	16.2	16	32	32	21.48
Driving	1	1.01	0	0	1	0.67
Farming	8	8.08	10	20	18	12.08
Housewife	1	1.01	1	2	2	1.30
Artisan	20	20.2	9	18	29	19.60
Medical	5	5.05	1	2	6	4.03
Student	7	7.07	0	0	7	4.70
Income						
< ₦5,000	7	7.07	0	0	7	4.70
₦5,000- ₦15,000	18	18.18	1	2	19	12.75
₦15,000- ₦30,000	28	28.28	13	26	41	27.52
₦30,000- ₦50,000	24	24.24	22	44	46	30.87
> ₦50,000	24	22.22	14	28	36	24.16

Table 2: Type of Animal Raised in Homestead

Animal	Urban	Rural	Aggregate Total
	%	%	%
Poultry	47.2	23.94	38.66
Goat	31.7	35.21	32.98
Rabbit	11.4	4.23	8.76
Pig	1.6	8.45	4.12
Fish	4.06	5.63	4.64
Snail	4.06	7.04	4.64
Grass cutter	---	15.49	5.67

Table 2 shows the type of animal(s) raised in the homestead by the respondents. Poultry predominate in the urban area with 47.2% of the respondents rearing it, while this was 23.94% among rural respondents. Goat was raised by 31.7% and 35.21% of respondents in urban and rural areas respectively. On the aggregate poultry was the mostly reared homestead animal (38.66%) closely followed by Goat (32.98%) while pig was the least (4.12%). The aggregate preponderance of poultry which is closely followed by goat is in line with the observation of Ndaeyo(2007) in his study on assessing the contribution of homestead farming to food security in Developing economy where the percentage of household keeping poultry ranged from 94-97 and closely followed by goat with 76-82%. Poultry starting stocks are cheap to obtain and they are easy to manage and require less expensive housing, while goats can be kept on free range in the rural area. Small livestock, especially poultry species have been shown to provide an effective first step in alleviating abject rural poverty (Mack *et al.*, 2004). According to Rural Self- Help Development Association (RSDA 2011),

throughout Africa village poultry are a valuable asset to local populations as they contribute to food security, poverty alleviation and promote gender equality. Poultry can provide the start of the owner climbing the “livestock ladder” leading to other livestock species such as goat and cattle (Dolberg 2003). Poultry and goat are sold on a one-on-one basis which is referred to as direct marketing. Usually they are sold when there is immediate need for cash. Unlike in commercial livestock, no cold chain is required as stock is sold live and products raw.

The lowest production of Pigs cannot be unconnected with religious taboos, cost of housing and feeding.

Type of Housing for Homestead animal rearing

Table 3: Type of Housing used for raising Homestead animals.

Housing type	Urban	Rural	Total
	%	%	%
Local Cage	37.4	40	38.16
Manufactured Cage	19.2	7.55	15.13
Deep Litter	7.07	7.55	7.24
Free Range	36.40	45.28	39.47

Most of the animals were raised under free range system 45.28, 36.40% and 39.47% for the rural, urban and the aggregate respondents while this was closely followed by the use of local cage with corresponding values of 40%, 37.4% and 38.16%. Free ranging management of animals is cheaper to produce than in other systems of rearing, while the local cages can be cheaply constructed from locally available materials. These types of housing cut down the cost of production, though productivity might be compromised a times. The predominant use of free range and local cages correlate with the major types of animal being raised (poultry and goat) which can be raised on either system.

Table 4: Take-off stock of Homestead Animal

	Urban	Rural	Total
	(n)%	(n)%	(n)%
Gift	(27) 27.3	(8) 16	(35) 23.49
₦10,000-₦5,000	(33) 33.3	(12) 24	(45) 30.20
₦6,000-₦10,000	(28) 28.3	(21) 42	49 (98) 32.89
>₦10,000	(11) 11.1	(9) 18	(20) 13.42

Table 4 shows the take-off stock of the respondents i.e. the amount they started with in keeping the animals. One hundred and eighty eight (63.09%) on the aggregate of the respondents started off with between ₦1000 to ₦10,000, while only 13.42% invested above ₦10,000. Seventy (23.49) of the respondents started with gift. The result shows that homestead animal rearing did not require much capital to take off. Animals could be given as gift while some might be keeping animals for someone else in exchange for the offspring or products produce by the animals. The amount required for the take off of homestead animals could be conveniently saved or through loan and gift. (Table 5)

Table 5: Source of initial capital for Homestead Animal Keeping.

	Urban	Rural	Total
	(n)%	(n)%	(n)%
Savings	(79)79.8	(37) 74	(116) 77.85
Loan	(10)10.1	(10) 20	(20) 13.42
Gift	(10)10.1	(3) 6	(13) 8.72

Management of Homestead Animals

Table six shows who takes care of the animal(s) kept by the respondent. More than two-third of the animals (75.17%) kept on the aggregate were being managed by family members while small proportion (11.41%) employed attendants. This shows that homestead livestock farming requires little or no employed attendants. It has been shown that homestead animals are owned and managed by women and children and are often essential elements of female-headed households (Alders *et al.*, 2003. Bagnold 2005). Moreki *et al.*, (2010^b) showed that 83.2% of women owned chickens while 73.5% owned and managed goat

Table 6: Management of Homestead Animals

	Urban (n) %	Rural (n)%	Total (n)%
Family members	(77)77.8	(35)70	(112)75.17
Maids	(10)10.1	(10)20	(20)13.42
Employed attendant	(12)12.1	(5)10	(17)11.41

Proportional utilization of Income from Homestead Animals.

Table seven shows the proportional utilization of the income (profit) from homestead animal kept by the respondents.

Table 7:- Proportional utilization of the income from Homestead Animals

Commodity	%
Family Feeding	62.16
Children Education	10.81
Clothing	8.11
Capital project	10.81
Gift	8.11

The lion share of the income derived from homestead animal's sale (62.16%) was used for family feeding, while children education and capital project took equal proportion (10.81%). This result corroborates past studies' observation that majority of the income earned through

Homestead Food Production Programs (HFPP) is used to purchase additional food. Forty six percent (46%) of households in Bangladesh and Eighty two percent (82%) in Cambodia used the surplus income from sale of poultry product to buy additional foods for their household (HKI 2010). Furthermore, it has been observed that, the sale of chickens contributed to improved habitable shelter. John and Richard (2011) observed that proceeds from the sale of chickens contributed to the purchase of building materials for construction of houses (capital project) in Nata, Botswana. Other important uses of income from sales of homestead animals and products include for clothing and children education (HKL 2008; Simainga *et al.*, 2011). All this point to the important contribution of homestead animal rearing to household food security and improved standard of living.

Another indirect contribution of homestead animal keeping on household food security and improved standard of living is the reduction in the family feeding expenses table (8). Thus providing more disposable income for developmental project.

Table 8:- Family Feeding Expenses of respondents

(a) Before keeping homestead animals.	
Feeding expenses	%
5-10%	14.17
11-20%	25.50
21-25%	42.95
>25%	16.78

(b) When homestead animals rearing was introduced	
Feeding expenses	%
5-10%	27.52
11-20%	38.26
21-25%	25.50
>25%	8.73

There was a sharp decrease in the proportion of the salary or other income being spent on family feeding expenses when homestead animals were kept; this is particularly true where the proportion of salary being spent on family feeding exceed twenty one percent (21%). There was a decrease of 17.45% in the proportion of respondents spending 21-25% of their salary (income) on feeding before homestead animals were kept (42.95%) in comparism to when homestead animals keeping was embarked upon (25.50%). Since the primary purpose of keeping homestead animals was to augment family feeding expenses (Table 7) this will reduce the amount from salary or other income being spent on feeding, hence there will be more disposable income for other developmental/capital projects.

Economic Empowerment of the Respondents

It has been observed that economic empowerment focuses on mobilizing the self-help efforts of the poor rather than providing them with social welfare (Dunellens and Lila 2009). Table 1 show that 13 (8.9%) of the respondent were unemployed in any other secular job. The category of unemployed in this study includes retirees, full house wives and new graduates. Table 9 shows that this set off respondents derived income between one thousand naira (₦1000) to ten thousand naira (₦10,000) from rearing of homestead animals (poultry and goat). Those without derivable income were either keeping the animals for family consumption or the animals are yet to mature for sale.

Table 6:- Unemployed respondent

No of respondent		Type of animal kept	Derived Income ₦
n	%		
2	15.38	Poultry	NIL
4	30.77	Poultry	1,000-5,000
3	23.08	Poultry	6,000-10,000
1	7.70	Goat	NIL
1	7.70	Goat	1,000-5,000
2	15.38	Goat	6,000-10,000

Homestead animal farming had acted as means of employment for this set of people with provision of income or additional income and source of food for the respondent and the household.

Conclusion

Emerging evidence from this study showed that homestead animal keeping contributes positively to household food security, economic empowerment and improved standard of living.

Homestead animal rearing provide economic empowerment directly by providing means of livelihood through employment and indirectly by increasing disposable income through reduction of proportion of salary spent on food. Homestead animal keeping provide funds for purchasing food items hence ensuring household food security.

Recommendation

Considering the positive impact of homestead animal farming on the household food security, economic empowerment and improved standard of living of the respondents, government and non-governmental organizations

should mount up campaign about the positive effects of the practice and empower willing individuals and groups by providing soft loans and take-off stocks.

References

- Alders, R; Cambaza, A.B. and Harum, M.(2003). Village chickens, food security and HIV/AIDS mitigation. Retrieved from www.kyeemafoundation.org/content/.../HIV-AID%20paper%20NOV03.pdf.
- Bagnol, B.(2005). Improving Village chicken production by employing effective gender sensitive methodologies. Retrieved from: <http://aciagov.gov.av/files/node/11133/PR131%20part%201.pdf>.
- Deneulen Severine and Lila, S. (2009). An introduction to the human development and capability approach: freedom and Agency, Sterling VA; Earthscan.
- Dolberg, F. (2003). Review of household poultry production as a tool in poverty reduction with focus on Bangladesh and India. FAO. Pro-poor Livestock Policy Initiative Working Paper No.6. Food and Agriculture Organization of the United Nations. Rome.
- Food and Agriculture Organization. (1996). Declaration on World food security, World food summit. FAO. Rome. 2004/contribution1618.pdf.
- Moreki, J.C; Mokowe, J.; Keboneilwe, D; and Koloka, O.A.(2010b). Evaluation of Livestock Gordon. A.O. (2003). Perspective in Nutrition. 3rd edn. Mc Graw-Hill publishing company New Delhi.
- Helen Keller International.(2008). Household food security working group. 35th SCN Hanoi. March 2-7 2008.
- Helen Keller International.(2010). Homestead Food Production model contributes to Improved Household food security, Nutrition and Female Empowerment.-Experience from scaling-up programs in Asia. Nutrition /vol. 8 Issue 1/ March 2010.
- John Cassius and Richard Dikeme (2011). Small Livestock, Food Security, Nutrition Security and HIV and AIDS- Updates on Biology, Immunology, Epidemiology and treatment Strategies, Dr Nancy Dumais (Ed), ISBN:978-953-307-665-2.
- Mack, S; Hoffmann, D and Otte, J.(2004) The contribution of poultry to rural development, Retrieved from [http://193.43.36.103/AG/AGA_Info/themes/en/infpd/documents/papers/Management and Infrastructure Development Support Scheme in seven districts of Botswana](http://193.43.36.103/AG/AGA_Info/themes/en/infpd/documents/papers/Management%20and%20Infrastructure%20Development%20Support%20Scheme%20in%20seven%20districts%20of%20Botswana.pdf), Retrieved from. <http://www.Irrd.Org/Irrd22/5/more22087.htm>.
- Ndaeyo, N.U.(2007). Assessing the contribution of Homestead Farming to Food Security in of family Poultry in Mongu and Kalabo Districts of Zambia. Livestock Research for Rural Developing Economy: A case study of Southern Nigeria. *Journal of Agriculture and Social sciences*. Vol3, No1.2007.
- Okafor, J.C and Fenandes, E. C.(1987). Compound farms of Southeastern Nigeria: A predominant Agro-forestry home garden system with small livestock. *Agro-forestry System*.5;253-168.
- Rugalema, G.H; A.A. Okting and F.H.J ohnson.(1994). The home garden Agro-Forestry System of Bukoba District. North Western Tanzania Farming Systems, 26; 53-64.
- Rural Self- Help Development Agency.(2011). The study on socio-economic status of village chickens at Ha Molemane(Berea), Phamong(Mohales Hoek), Tebang, Ha Notsi. And Ribaneng(Mafeteng) of Lesotho Maseru, Lesotho-pp111
- Simainga, S.; Moreki, J. C.; Banda, F. and Sakuya, N.(2011). Socio-economic study Development.23 (02), Retrieved from. <http://www.Irrd.org/Irrd23/2/sima23031.htm>