



Poultry Production Business: A Means of Alleviating Poverty among Farmers

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Abstract

The study appraised the potency of poultry production business as a means of livelihood and poverty alleviation among its farmers. Nigeria is a favourable ground for poultry production business as no culture in the country forbids the consumption of poultry and its products but rather use it as food for social gatherings and for business purpose in eateries or restaurants. However, production is low to meet up the demand of poultry and its products. Profitability approaches to be successful in the business were examined. The study deduced that poultry production business in its entire ramification represents one of the viable farming enterprises providing the much needed animal protein sources (table egg and meat) to ameliorate the protein deficiency factor in Nigerian food crisis; means to alleviate poverty or sustain livelihood and generate employment among its farmers. The study recommended that the government should use poultry production business to pursue youth empowerment with extra vigor to drastically reduce level of prevalent unemployment in our society. This approach will enable the Federal and State Government to meet the target of reducing poverty and generate productive employment for a lot of people every year.

Keywords: poultry farmers, poverty alleviation, broiler production

INTRODUCTION

Agriculture employs about two-thirds of Nigeria's total labour force, contributed 42.2% of Gross Domestic Products (GDP) in 2007 and provides 88% of non-oil earnings. The agricultural GDP is contributed by crops (85%), livestock (19%), fisheries (4%) and forestry (1%). for by small-scale farmers with less than two (2) hectares under cropping. It is estimated that about 75% (68 million ha) of the total land area has potential for agricultural activities with about 33 million hectares under cultivation. Similarly, of the estimated 3.14 million hectares irrigable land area, only about 220,000 ha (7%) is utilized (World Bank 2005; Manyong, Ikpi, Olayemi and Yusuf, 2005).

The poultry sub-sector is the most commercialized (capitalized) of all the sub-sectors of the Nigerian agriculture. The types of poultry that are commonly reared in Nigeria are chickens, ducks, guinea fowls, turkeys, pigeons and more recently ostriches. Those that are of commercial or economic importance given the trade in poultry, however, are chicken, guinea fowls and turkeys, amongst which the chickens predominate (Adene and Oguntade, 2006).

Poultry farming has now developed into a commercial enterprise involving thousands of birds. Large poultry units have replaced the backyard poultry units while more efficient strains of meat or egg type birds, balanced feed, intensive housing and better poultry equipment came into use by farmers. The poultry industry occupies a pivotal position because of its enormous potential to bring about rapid economic growth. The importance of the poultry sub-sector is chiefly in the provision of meat and egg as well as the provision of employment either directly or indirectly and the contribution to the revenue (Gross Domestic Product) of the country (Adebayo and Adeola, 2005). Compared to a number of other livestock species like cattle, sheep, goats, pigs and rabbits, the domestic fowl is easier to rear, less-laborious to cater-for and financially less expensive to maintain. The domestic fowl has fast-growth and high financial- returns; with few social, health and religious taboos against its consumption, usage and production than the aforementioned animals (Job, 1992; Bincan, 1992). Kekeocha (1998) reported that domestic fowl production is less-demanding for space as it can be done in relatively small spaces such as

the backyard and wooden-cages (especially in vertical-tiers). Poultry meat and eggs play a very useful role in bridging the protein gap in Nigeria. They are palatable and generally acceptable. This acceptability cuts across nearly all cultural and religious boundaries in the country. The importance of poultry to the national economy cannot be overemphasized, as it has become popular industry for the small holders that have great contribution to the economy of the country. The enterprise has assumed greater importance in improving the employment opportunity and animal protein production in Nigeria (Afolabi, Adegbite, Ashaolu and Akinbode, 2013). With advantages it is clear that poultry production in commercialized form is an indispensable tool for alleviating poverty among farmers.

Poverty is a condition in which one cannot generate sufficient income required to secure minimum standard of living or a sustainable life. It is however generally agreed that poverty is a condition in which one cannot generate sufficient income required to secure a minimum standard of living in a sustainable pattern (Schiller, 2001). In alleviating poverty through poultry production a farmer needs to be equipped in marketing its products.

Ukagha (2003), opined that markets and marketing are a major driving force for the expansion of livestock production. What it does is that whatever is produced must find a market otherwise the level of production cannot be sustained. Many countries use price support and subsidies to stabilize output and prices of meat and milk. In Switzerland for example, the Government pays \$2000 per cow per annum to keep the dairy farmer in production. What is most needed is the development of infrastructure in livestock markets, abattoirs, processing plant and storage facilities together with price incentives. The ultimate objective of this measure is to position the livestock industry in Nigeria to compete effectively with the imported commodities from around the world.

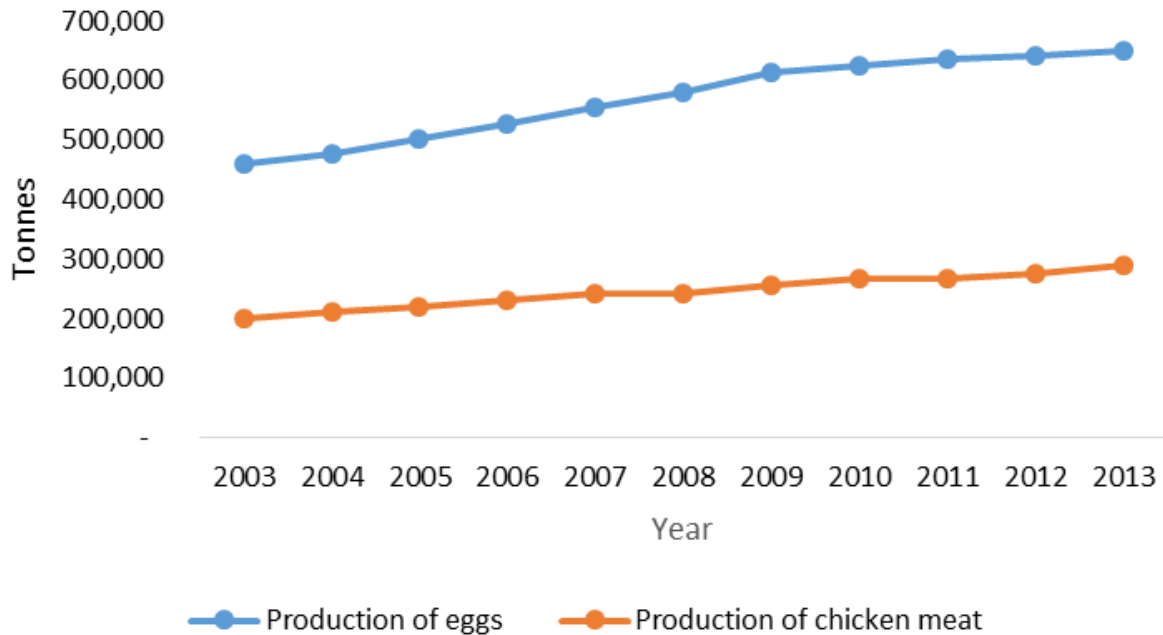
Poultry production in its entire ramification represents one of the viable farming enterprises providing the much needed animal protein sources (table egg and meat) to ameliorate the protein deficiency factor in Nigerian food crisis and means to alleviate poverty or sustain livelihood. However, commercial poultry production is faced with many problems, such as high cost of feeding and veterinary drugs, poor quality of commercial feeds due to formulating abuses of the manufacturers, inadequate capital investment and lack of knowledge of nutrients and energy requirements of the various classes of poultry.

Diseases/parasites, mortality, high cost of fixed inputs as said by Aromolaran (1999), give poultry farmers serious challenges and thus, hinder the poultry business. This culminates to low production and subsequently reduced income which frustrates the business venture and sometimes lead to financial bankruptcy. Also, resource use and utilization can seriously jeopardize production output and can lead to poverty on the part of the farmers. Osho (2006) viewing poverty from productive perspective posited that it (poverty) derives from long and protracted inability to generate productive resources for the purposes of generating a desired level of output in order to enhance the realization of an appreciable income which is the main aim of any farmer in business. The assessed the Nigeria poultry sector; poultry production and the economics; poultry farming as business;

An Assessment of the Nigerian Poultry Sector

The Nigerian poultry industry is estimated at ₦80 billion (\$600 million) and is comprised of approximately 165 million birds, which produced 650,000 MT of eggs and 290,000 MT of poultry meat in 2013. From a market size perspective, Nigeria's egg production is the largest in Africa (South Africa is the next largest at 540,000 MT of eggs) and it has the 2nd largest chicken population after South Africa's 200 million birds (Sahel, 2015). The information is properly described in Figure 1 below:

Historical Growth of the Poultry Industry



Source: USDA, 2013

Chicken importation (with the exception of day-old-chicks) was banned by Nigeria in 2003, which spurred growth in domestic poultry production. Statistics from Eurostat, however, high-light that between 2009 and 2011 over 3 million MT worth of poultry products were imported into the Republic of Benin, with the preponderance of these products ending up in the Nigerian market. If this is reflected in overall assumptions, estimated poultry meat consumption in Nigeria is approximately 1.2 million MT (USDA, 2013).

The smuggled chicken costs about ₦500- ₦700 (\$2.50-\$3.50) per kg while locally produced frozen chicken costs between ₦1,000- ₦1,300 (\$5 - \$6.50) at retail locations, and approximately ₦650 (\$3.25) at the farm gate (Sahel, 2015). The price differential between imported and locally produced poultry is driven primarily by the high cost of maize and soybeans in Nigeria, and wide fluctuations in these commodity prices during the year. In 2013 in particular, high maize prices impacted margins of both poultry and animal feed companies, while the 1st Half 2015 has seen the sector squeezed by a combination of high soybean prices (₦150,000/MT in May versus ₦90,000/MT during the same period in 2014) and incidences of Avian Flu. Even with these challenges, analysts have projected a 20% annual growth in the poultry industry between 2010-2020 driven by Nigeria’s large population and rapidly growing middle class (Sahel, 2015).

The Nigerian poultry sector is extremely fragmented with most of the chicken raised in ‘backyards’ or on poultry farms with less than 1,000 birds. However, there are a number of large commercial players in the sector most of whom are located in south-western Nigeria, in close proximity to Lagos and its large market of 17.5 million people (Sahel, 2015).

According to the Food and Agricultural Organization of the United Nations (FAO, 2015), “growing populations, economies and incomes are fuelling an ongoing trend towards higher consumption of animal protein in developing countries.” FAO forecasts that Nigerians are expected to consume two thirds more animal protein, with meat consumption rising nearly 73%. These growths in protein consumption will

help farmers in the poultry sector take the advantage of the occupation as means of livelihood and alleviate poverty. The State and Federal government can set up programme from this area of agriculture to engage youths and unemployed graduates for worthwhile venture. The Nigeria's poultry sector can become a market leader if properly harnessed by stakeholders.

Poultry production and the economics

Every type of poultry production system has its own purpose, while rearing birds for consumption, social purpose or to generate incomes. Kryger *et al.* (2010) reported that income and consumption have been considered the main rationale for keeping village poultry. Hunduma *et al.* (2010) reported from Nigeria that most of village chicken keepers used chickens and their by products for home expenditure followed by home consumption. Tadelle *et al.* (2003) reported from Ethiopia that maximum amounts of the eggs produced were used for hatching followed by for sale and home consumption, while more birds were used for sale followed by replacement and consumption.

Similarly, Jugessur *et al.* (2004) reported from Mauritius that almost every household keeps of semi-scavenging poultry for food and to generate additional incomes. However, Adebayo and Adeola (2005) reported that finance and input are essential for substantial improvements in the contribution of the poultry enterprise to household food production and economic well being of poor farmers.

According to Jugessur *et al.* (2004) reports, family poultry had a guaranteed market. All the poultry merchants who marketed the family poultry found their business profitable, and wished to expand it (Jugessur *et al.*, 2004). That is why Maqbool and Bukhsh (2007) reported from Kenya that commission agents were earning 47% of the total profit in poultry industry, followed by retailers (28%) and producers (25%). Based on this result, these authors conclude that it would be impossible to improve the contribution of poultry in total nutrients uptake of human beings in the country without reversing the trends in profit share. Thus, Maqbool and Bukhsh (2007) reported that inequitable distribution of profit share was assumed to be one of the major obstacles in the expansion of poultry industry. Mammo *et al.* (2008) in Nigeria reported that fluctuation in the prices of the village chickens and chicken-products were mainly due to purchasing power of the consumers, festive seasons and availability of products. However, Mekonnen (2007) reported that more than half of the respondents did not have any information about the price of the chickens. According to Tadelle *et al.* (2003), the overall gross return as percent of initial values and gross return per breeding female per year were relatively high. However, Solomon (2008) reported that the export market for poultry products in Nigeria is very limited, but it may be worthwhile studying consumer preferences in neighboring countries to determine if niche markets exist for extensively raised indigenous birds and their eggs. The major criteria used to determine the price of poultry were body weight, plumage colour and combtype (Mammo *et al.*, 2008).

According to Ajala and Otchere (2007), incomes from sales of birds and eggs serve as reserve for important household expenditures. In addition, Jugessur *et al.* (2004) reported that the profit obtained from the sale of chickens and eggs, and the monetary value of sale and home consumption of these commodities represented 9 and 18% of the total income of the family, respectively. Olasimbo (2006) observed that the variation in returns from table egg production was comprised from numbers of birds kept and type of production system used. Generally, Adrian and Michael (2009) reported that government policies should focus on absorbing transaction costs of small-scale poultry producers and interventions like provision of mentoring and training services to stakeholders.

Poultry as a business

There are different branches of the poultry industry that can be considered for a take-off. These include broiler production (most prominent in poultry production), point of lay production, egg production, hatchery operation, poultry processing and marketing.

Broiler is a North American term used to describe young male or female chickens less than 12 weeks old based on fast growing breeds, reared and sold specifically for poultry meat. For broiler production, the rapidity of turnover is very high and the current projected profit per broiler is N300 (Abiola, 2007). The costs of day-old chicks, house and equipment are part of the fixed capital in the short run. Although the market prospect may be difficult to predict, the poultry farmer could be assured of ready markets for production. This optimism arises from the ban on the importation of poultry products by the Federal

government and the growing fast food businesses in Nigeria requiring massive production of broilers. Costing and pricing of poultry products are vital factors in the poultry industry. Costing is the process of calculating the various costs that arise in running the business while pricing is the process of establishing a selling price after considering the various costs involved to sell a product. The 3 steps involved in the costing and pricing of dressed broilers are presented in Table 1.

Table 1: Costing and pricing of dressed broiler

Step	Calculation
1	$\text{Dressing \%} = \frac{\text{Carcass Weight (kg)} \times 100}{\text{Liveweight (kg)}}$
2	$\text{Carcass cost price/kg} = \frac{\text{Liveweight price/kg} \times 100}{\text{Dressing \%}}$
3	$\text{Carcass selling price/kg.} = \frac{\text{Carcass cost price/kg.} \times 100}{100 - \text{Gross profit margin reqd.}}$

Source: Abiola, 2007

Point of lay production as a business entails rearing of pullet chicks from 0-18 weeks. Such chicks must be obtained from reputable hatcheries. The products are disposed off and not used in production by the producer. Very few poultry farmers are involved in this type of operation partly because of the problems associated with the brooding of day old chicks and the risk of disappointments by the potential buyers (Abiola, 2007). However, this is a manageable risk by insistence on substantial non-refundable deposits.

The expansion of the business of egg production can partly be attributed to quick turnover. The current estimated gross or net daily profit from the sale of eggs from 2,000 layers is N5 000 depending of course on the use of birds of superior genotype, provision of favorable environment and managerial skill. Moreover, spent fowls which are byproducts of the egg industry ensure greater returns to the egg producers at the end of the laying cycle since the cost of production is largely integrated with that of eggs. Egg production business is probably the quickest way of making your millions in poultry farming. In this operation, do not joke with the welfare of the poultry attendants. Carry them along in decision-making.

Chick production business is a specialized branch of the poultry industry that deals with hatchery operations (Oluyemi and Roberts, 1979). This branch serves as the biggest employer of labor in the poultry industry. The hatchery is a manufacturing unit. Its raw products are fertile hatching eggs, its manufacturing process is the incubation of the eggs and its finished products are the day old chicks. Whether or not the hatchery is successful depends largely on the number of eggs that produce saleable stock. In this operation the market is highly competitive. Items on which running costs are expended will include administration, selling and delivery, maintaining the breeders, etc. There are some critical factors that should be considered or employed to achieve success in poultry productive venture. They include:

Location of the poultry farm: Legal clearance must be obtained from appropriate authority before establishing poultry enterprise to prevent the demolition of structures, culminating in the termination of the enterprise. The enterprise must not be a source of nuisance in the nature of foul odor and noise to neighbors. Ensure access to water, electricity and proper drainage.

Capital outlay: This will depend on the size and type of operation and the management system. For the take off, personal savings up to N250, 000 can be utilized particularly for small-scale broiler production (Alabi and Samuel, 2002). Alternatively agricultural bank loans on liberal terms may be considered.

Agricultural Credit Guarantee Scheme Fund (ACGSF) and the National Directorate of Employment (NDE) Poultry Farming Scheme can provide loans to prospective poultry farmer (FAO, 2011). Decree 20 of 1977 established the ACGSF to induce Deposit Money Banks to lend to agriculture. The lending limit to individual is N20 000 without tangible security or N1 million with tangible security, to Co-operative societies and Limited liability companies is N10 million with collateral (CBN, 2005). Analysis of loans guaranteed for livestock by ACGSF in 2004 and 2005 showed that poultry sector dominated, accounting for 89.44 and 88.09% of total loans guaranteed respectively (Table 2)

Table 2: Loans under the Agricultural Credit Guaranteed Scheme Fund (ACGSF) for livestock (N million).

Purpose	2004	2005
Poultry	170,199.0	220,830.5
Cattle	8,770.0	8,502.3
Sheep & Goats	1,950.0	2,100.0
Others	9,385.0	19,245.0
TOTAL	190,304.0	250,677.8

Source: CBN (2004, 2005).

Manpower required: For a small-scale operation, one poultry attendant should be able to manage a minimum of 2000 birds either on the deep litter or in cages. Occasional operations such as manual removal and vaccination require additional labor which could be provided by members of the family.

Feed supply: In Nigeria, feed cost accounts for about 70% of the cost of poultry production (Adejoro, 2004). This is due to the high cost of some critical feed ingredients (e.g. maize and soybean) which are needed in poultry ration. The need for well-balanced poultry diets and the competition with the human needs particularly for maize and soybean are some of the constraints against poultry production (Afolabi, 2012). The entry of unemployed young graduates into the feed milling business has increased the number of feed mills in Nigeria in recent times. This trend has impacted favorably on the feed supply situation in the country especially in terms of feed quality. However, a small-scale poultry farmer with 1,000 birds should be able to acquire a sizeable feed mill for the production of cheaper and good quality poultry diets. But this is applicable where the facilities can source other users to avoid underutilization.

Poultry products and by-products: The main poultry products are eggs and poultry meat. Eggs from the farm should be collected regularly and stored under low temperature. The period of egg storage should be as short as the exigencies of marketing permit. However, the egg producer must realize the fact that age, health of birds, nutrition and environmental temperature are some of the factors that can affect egg qualities and hence their marketability (Aklilu and Mekinders, 2007). Egg products can be used to enrich some fast food products, exploiting their properties of binding, emulsifying, foaming, thickening and leavening.

The embargo on the importation of poultry products in 2002 by the Federal Government is to protect the infant domestic industry with emphasis on small-scale commercial poultry producers in Nigeria.

However, this expectation is yet to be realized since the output of poultry products (e.g. poultry meat) lags behind other livestock products whereas poultry farmers collected over 80% of loans guaranteed for livestock over the years (**Table 3**). It is time that Nigerian poultry farmers rise to the challenge of filling the gap created by this ban of importation so as to discourage black marketing.

Table 3: Estimated output of livestock products ('000 tonnes)

Item	2001	2002	2003	2004	2005
Poultry meat	81.1	82.3	83.1	91.4	110.9
Goat meat	421.8	442.1	490.6	511.6	524.4
Mutton	400.6	419.9	472.5	486.5	498.1
Beef	177.0	185.6	232.5	239.8	235.1
Pork	53.5	56.1	58.5	62.3	66.5
Milk	1001.5	1049.6	1093.7	1185.9	1245.2
Eggs	466.5	488.9	509.5	525.4	580.0

Source: CBN (2005).

Poultry by-products such as poultry droppings, poultry offal and hatchery wastes can be processed to provide additional source of income to the poultry farmer. Physical, chemical or biological treatment will destroy pathogens, recover nutrient content and improve acceptability, palatability and storage quality. Modern broiler and layer farm production has resulted in the production and accumulation of enormous amounts of poultry manure. Disposal of this manure is of significant environmental concern. However, urban agriculture as a means of solving urban poverty has encouraged the use of poultry droppings as manure for vegetable gardening and feed ingredient in fish farming. This approach is facilitating waste management. The concentrations of nitrogen, calcium and phosphorus in poultry wastes are higher than in the wastes of other species while nutrient content of broiler litter is higher than that of caged layer (Sreeniva, 2005).

The economic benefits of poultry manure use by integrated poultry-maize farmers in Ekiti and Osun states of Nigeria were evaluated by Bamire and Amujoyegbe (2003) who found that the mean net income earned per annum by poultry manure users was 1.40 times higher than that for non-users. Many experiments have produced overwhelming evidence that organic fertilizer offers affordable and readily available solution to many soil fertility problems.

Poultry offal meal and hatchery wastes have also been used as dietary protein supplements for poultry and pigs. With the emergence of large- scale poultry farming in Nigeria and the declining availability of protein concentrates; the re-cycling of such wastes would reduce feed cost in poultry business and also provide employment opportunities and inturn reduce poverty among the farmers (Ambar and Rahman, 2000). The nutritional value of hatchery wastes will be addressed in more details later on.

Target Market: It is important to emphasize that there are few if any social or religious stigmas attached to the use of poultry meat in human diet. Hence the demand is high for live birds from local markets either for home consumption or as gifts at the time of festivities such as Christmas, New Year, Easter, Id El- Fitri, etc. Restaurants, hotels and supermarkets in Nigeria are noted for fast food business that involves the sale of products like chicken burger, egg bonze among others. Besides, fowl meat has good potential export driven nature worldwide while exportation of eggs into some West African countries is a

lucrative business. Apart from the use of eggs in human diet, other uses of eggs provide employment opportunities in different industries. Eggs are used in the manufacture of vaccines, emulsion paint, in the leather tanning, production of shampoo for beauty saloons, photo-engraving, production of glue and some pharmaceuticals. Eggs can also be used as leavening agent in baked foods and for the production of egg powder that can later be incorporated into baby foods.

Record Keeping: At any level of production, either backyard or commercial, efficiency of performance is demanded and to this end, record keeping is an indispensable tool. Any one aspiring to become an entrepreneur in poultry farming must learn how to keep daily, weekly, monthly and yearly records for all classes of poultry. Records provide information that can be used to detect and correct management errors and to prevent the spread of diseases. Flock, egg production and veterinary records are useful for efficient poultry management.

Profitability of poultry business: Results of several studies in Nigeria have confirmed the profitability of poultry business. The return to management has been found to be higher than the income earned by peers in the civil service job. Abiola (2007) identified following as some of the advantages of poultry farming:

- (a). Poultry farming can provide wider employment opportunities than any other livestock business because there are many branches in the poultry industry.
- (b). Poultry farming is characterized by quick financial returns on investment as a result of short generation interval.
- (c). Spent hens (i.e. culled layers) can provide greater returns to the egg producer.
- (d). Poultry is suitable for research in breeding, genetics and nutritional studies
- (e). Poultry can re-produce their kinds faster than other livestock.
- (f). Poultry keepers particularly at the village level earn more income, spend less on food, have better food security, more assets and a lower school drop-out rate than rural dwellers who do not keep poultry. Women and children are particularly involved in small-scale poultry production for paying school fees from their backyard poultry microenterprises.
- (g). Poultry farming provides several tonnes of poultry manure for organic farming than manure from other livestock.

From the standpoint of a profitable poultry enterprise, the genetic potential of the birds is the beginning of wisdom. The commercial stocks, particularly the domestic fowl, are products of genetic engineering. If the genotype of the bird is deficient, all other efforts including good nutrition and health management will amount to an exercise in futility. From grandparents to commercial stock involves strain development by selection and it also involves complete reciprocal mating to identify strains that have special combining ability. Nigeria is still dependent on other nations in the basic area of quality of birds despite the fact that genetic, economic and nationalistic reasons have been advanced for Nigeria to be a supplier of poultry stock in the tropics. The leadership role of Nigeria as a source of high quality commercial stock in Africa would be of great benefit in job opportunities which in turn alleviate poverty.

CONCLUSION

Poultry production business is very important source of livelihood for most livestock farmers. Poultry production business has developed and occupies a place of pride among the livestock enterprise. The study identified various employment opportunities in poultry farming that can alleviate poverty in our society. Poultry production contributes to sustainable food security in many developing countries by providing income particularly to poor farmers. It makes good use of local resources and provides economic, social and cultural contributions to household livelihood. Poultry farming is a worthy and economically viable occupation which can be used as a tool to fight poverty.

RECOMMENDATIONS

1. Poultry farmers should endeavour to attend seminars and workshops in order to update their knowledge of poultry farming. This will ensure that poultry and poultry products continue to occupy their traditional place in feeding and providing social enjoyment for people.

2. Fast-food restaurants should popularize the use of chicken meat from different poultry species (e.g. duck, guinea fowl, turkey etc) in the manufacture of meat products. This approach will provide variety of taste and create employment opportunities in the fast-food chain for the youths
3. The government should continue to prevent the importation of the frozen poultry products in order to encourage local production and conserve country's foreign exchange.
4. The government should use poultry production business to pursue youth empowerment with extra vigor to drastically reduce level of prevalent unemployment in our society. This approach will enable the Federal Government to meet the target of reducing poverty and generate productive employment for a lot of people every year.

REFERENCES

- Abiola, S.S. (2007). *Poultry farming: A veritable tool for employment generation and poverty alleviation*. An Inaugural Lecture delivered at the University of Agriculture, Abeokuta. On Wednesday, 3rd October 2007
- Adebayo, O.O, Adeola, R.G. (2005). Socio-Economic Factors Affecting Poultry Farmers in Ejiabo Local Government Area of Osun State. *J. Hum. Ecol.* 18(1):39-41.
- Adejoro, S.O. (2004). *Poultry Feed Formulation in the Tropics*. Ibadan: Soavet Nigeria Ltd. P3.
- Adene, D.F. and Oguntade, A.E. (2006). *The structure and importance of the commercial and village-based poultry industry in Nigeria*. FAO (Rome) Study, October 2006.
- Adrian, W.T, Michael, L.C. (2009). Rural Economic Growth Linkages and Small Scale Poultry Production: A Survey of Poultry Producers in Kwazulu Natal. Contributed Paper Presented at the 41st Ann. Conf. Agri. Ec. Asso. S. Afr. P. 16.
- Afolabi, O. I., Adegbite, D. A., Ashaolu, O. F. and Akinbode, S. O. (2013). Profitability and resource-use efficiency in poultry egg farming in Ogun State, Nigeria. *African Journal of Business Management*, 7(16), 1536-1540
- Afolabi, O.I. (2012). *Credit Constraints and Production Efficiency in Poultry (Egg) Farming in Ogun State, Nigeria*. An Unpublished M. Agric. Dissertation Work Submitted to the Department of Agricultural Economics and Farm Management. College of Agricultural Management and Rural Development. Federal University of Agriculture Abeokuta, Ogun State. Nigeria pp.34-35
- Ajala-Nwag, M.K.B.I, Otchere, E.O. (2007). Socio-Economics of Free-Range Poultry Production among Agro-pastoral Women in Giwa Local Government Area of Kaduna State, Nigeria. *Niger. V. J.* 28(3):11-18.
- Aklilu, H.C and Mekinders, M.A (2007). Poultry management, consumption and marketing in relation to gender, religion festivals and market access. *Tropical Animal Health and Production* **39**; 165-177.
- Alabi, R.A., Samuel, K.D. (2002). An Economic Analysis of Poultry Production System in Ondo State. *Proceedings of 7th Annual Conference of Animal Science Association (ASAN), Abeokuta*, pp 316 – 318
- Ambar, A.J and Rahman, A. (2000). Country status paper for the workshop on the experience of Smallholder Poultry Development Model in Bangladesh. *Draft presentation paper, PLDP and DLS, Dhaka*, 22 February 2000.
- Aromolaran AB (1999). Economics of Size in Poultry Egg Production in Abeokuta. *Tropical J. Animal Sci.* 2(2): 177 – 185.
- Bincan, J.N. (1992). *The Nigerian Livestock Industry: Problems and prospects*. A keynote address presented at a workshop on the Nigerian livestock industry held in April 1992 in Jos, Plateau state Nigeria.
- CBN (2005). Central Bank of Nigeria. Annual Report and Statement of Accounts.
- FAO (2011). *Food and Agriculture Organization of the United Nation (FAO)*. Importance of small scale and semi-commercial poultry production in developing countries

- Hunduma, D., Regassa, C.h., Fufa, D., Samson, L., Endale, B. (2010). Socioeconomic importance and management of village chicken production in rift valley of Oromia, Ethiopia. *Liv. Res. Ru, Dev.* 22(11).
- Job, T. A. (1992). Prospects of Poultry Production in Nigeria: Past2 present and future. A paper presented at a workshop on the Nigerian Livestock Industry, held in April 1992, in Jos, Plateau State, Nigeria, organized by Livestock Planning, Monitoring Evaluating and co-ordinating Unit (Limecu), Federal Ministry of Agriculture and National resources, Abuja, Nigeria.
- Jugessur, V.S., Pillay, M.M., Ramnauth, R., Allas, M.J. (2004). *The Socio-Economic Importance of Family Poultry Production in the Republic of Mauritius: Improving Farmacyard Poultry Production in Africa.* Pages 164-178 in Proc. of a Final Res. Coo. Meeting Organized by Joint FAO/IAEA Held in Vienna, 24-28 May, 2004.
- Kekeocha, C. C. (1998). *Poultry Production in the Topics.* Ibadan: Sihon books Limited. p 34- 39.
- Kryger, K.N, Thomsen, K.A., Whyte, M.A, Dissing, M. (2010). *Smallholder Poultry Production – Livelihoods, Food Security and Socio-cultural Significance, Smallholder Poultry Production.*FAO. Rome Italy. P. 76.
- Mammo, M., Berhan, T., Tadelle, D. (2008). *Socio-economical contribution and labor allocation of village chicken production in Jamma district, Kaduna, Nigeria.* 20:60.
- Manyong, V.M., Ikpi, A., Olayemi, J.K., Yusuf, S.A. Omonona, B.T., Okoruwa, V., and Idachaba, F.S. (2005). *Agriculture in Nigeria: Identifying opportunities for increased commercialization and investments.* IITa, Ibadan, Nigeria. pp: 159.
- Maqbool, A.A., Bukhsh, K. (2007). Issues and Economics of Poultry: A Case Study of Faisalabad, Pakistan. *Pak. Vet. J.* 27(1):25-28.
- Mekonnen, G.M. (2007). *Characterization of Smallholder Poultry Production and Marketing System of Dale, Wonsho and Loka Abaya Weredas of S. Ethiopia.* Msc Thesis, Hawassa University, Ethiopia. P. 111.
- Olasimbo, M.A, (2006). Analysis of Table Egg Production as a Livelihood Activity in Ekiti State. *J. Agri. Soc. Res.* 6:2.
- Oluyemi, J.A. and Roberts, R.A. (1979). *Poultry production in warm wet climates.* London: Macmillan Press, 2nd Ed. 692pp.
- Sahel, C. (2015). *An Assessment of the Nigerian Poultry Sector.* Sahel Capital Partners & Advisory Limited
- Schiller, H. R. (2001). *Poverty in Irrigated Settlements. Should it deserve emphatic attention in future?* Irrigation Development London. 98-101.
- Solomon, D. (2008). An analysis of the poultry sector in Nigeria. *A review Report on HPAI prevention and control strategies in Eastern Africa.* FAO. Italy. P. 48.
- Tadelle, D., Million, T., Alemu, Y., Peters, K.J. (2003). Village chicken Production systems in Ethiopia: Use patterns and performance valuation and chicken products and socio- economic functions of chicken, Ethiopia. *Liv. Res. Rur. Dev.* 15(1).
- Ukagha, E. (2003). Socio – economic Constraints Pages x – vix in Sustainable Livestock Productivity and National Development. The Holistic Approach. *Proceeding of 8th Annual Conference of Animal Science Association of Nigeria Held at Federal University of Technology, Minna, Nigeria.*
- World Bank (2005). *Getting Agriculture Going in Nigeria: Framework for a National Strategy.* Report No 34618-NG.
- Yusuf, S.A, Malomo, O. (2007). Technical Efficiency of Poultry Egg Production in Ogun State. A Data Envelopment Analysis (DEA) Approach. *Int. J. Poult. Sci.* 6(9):622-629.