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## Avian Influenza Scare and Poultry Egg Production in Uyo Urban, Nigeria

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**Abstract:** The study attempted to analyze in comparative terms, the poultry egg production enterprise in Uyo urban of Akwa Ibom State, Nigeria. Focus was on the socio-economic characteristics of poultry producers and constraint affecting the enterprise. The study reference was to the pre and post avian flu scare period in the country. Findings revealed functional changes in the socio-economic characteristics of poultry egg producers, while the constraint factors are more intense in the post-avian flu period. Recommendations are proffered to ameliorate the situation.

**Key words:** Avian influenza, poultry, egg production, Uyo urban, livestock

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### Introduction

Urban agriculture is practiced in almost all metropolitan areas in both developing and developed countries. It takes place on smaller tracts of land and open spaces that are idle or unsuited for urban development and it contributes significantly to the socio-economic development of cities throughout the world. The United Nations Development Programme, defines urban agriculture as an industry that utilizes intensive production methods to produce, process and market food and fuel largely in response to the daily demands of customers within towns and peri-urban areas (UNDP, 1996). Livestock and poultry production, including milk and eggs, are an integral part of urban agriculture and have been acknowledged by the Food and Agricultural Organization, as the second most important sub-sector, after grain production, in the agricultural sector of most developing countries. Its importance also derives from the fact that it partially or fully sustains the livelihood of about 675 million of the rural and urban poor (Livestock in Development, 1999). The poultry industry specifically, has been described (Apantaku *et al.*, 1998) as the fastest means of bridging the protein deficiency gap prevailing in Nigeria. The rationale for the promotion of poultry production is predicated on the fact that it can be rapidly expanded to replace red meat in countries like Nigeria, with high growth rates, it improves human nutrition, generates regular income for women and other disadvantaged groups, supplies input (e.g. manure) for crop production and is generally accepted by a majority of the population (Steinfeld, 2003).

Poultry egg is one of the most important products derived from poultry. No other single food of animal origin is eaten and relished by so many people all over the world and none is served in such a variety of ways. Romanoff and Romanoff (1949) justifies the popularity

of the egg by its unsurpassed nutritive excellence. Muller (1988) describes the raw egg as a very valuable source of nutrients and which contains about 78% water, 13-14% protein, 10-15% fat, 1-2% total carbohydrate and 1 percent ash. The egg is said to be excellent for body maintenance and promotion of body growth, lactation and reproduction. The egg is also useful as a basic ingredient of manufactured goods in the bakery industry, and in medical research- for artificial insemination and in the treatment of many dietary deficient diseases (Ralph, 1988).

Nigeria has a comparatively well developed poultry industry for West African nations. According to the Food and Agricultural Organization, Nigeria's poultry stock of 140 million chicks constituted about 0.8% world stock and its 476,000 metric tones of eggs constituted 0.8% world stock in 2004. Ekunwa *et al.* (2006) reveal that the 0.3% growth rate in 2003, rose to 10.3% in 2004, mainly due to increased local demand, arising from the national government's ban on imported poultry products. Notwithstanding the seemingly impressive statistical data above, Adebayo and Adeola (2005) assert that the poultry sub-sector has fallen short of its aim of self-sufficiency in animal protein production.

Apantaku (2006) ascribes this trend to the low level of poultry production in comparison to the level of poultry technologies being generated by Nigerian poultry production researchers. The prevailing situation was worsened in 2006 by the reported outbreak of the Highly Pathogenic Avian Influenza (HPAI) sub type H5N1, in some states of the federation. Obayelu (2007) reports that the avian-flu outbreak led many poultry farmers into psychological breakdown due to losses incurred and also affected animal protein intake of a large sector of Nigerian population. In some areas of the country like Akwa Ibom State where the viral outbreak was not

## I.A. Akpabio: Avian Influenza Scare and Poultry Egg Production in Uyo Urban, Nigeria

Table 1: Socio- economic characteristics of poultry egg producers

Sr. No.	Characteristic	2004 (n = 47)	2006 (n = 39)
1.	Sex		
	Male	39 (83.0)*	26 (66.7)
	Female	8 (17.0)	13 (33.3)
		47 (100.0)	39 (100.0)
2.	Age (yrs)		
	21-40	31 (66.0)	20 (51.3)
	41-60	14 (29.7)	19 (48.7)
	>60	2 (4.3)	-
3.	Marital Status		
	Married	18 (38.3)	25 (64.1)
	Single	29 (61.7)	14 (35.9)
4.	Level of Education		
	Primary	2 (4.3)	12 (30.8)
	Secondary	8 (17.0)	14 (35.9)
	Tertiary	37 (78.7)	13 (33.3)
5.	Household Size		
	None	22 (46.8.)	11 (28.2)
	<5	9 (19.1)	19 (48.7)
	5-10	14 (29.8)	9 (23.1)
	>10	2 (4.3)	-
6.	Level of Operation		
	Full time	17 (36.2)	17 (43.6)
	Part time	30 (63.8)	25 (56.4)
7.	Experience		
	< 1 year	3 (6.4)	-
	1-5 years	22 (46.8)	8(20.5)
	6-10 years	12 (25.5)	19 (48.7)
	> 10 years	10(21.3)	12 (36.8)
8.	Management System		
	Deep Litter	39 (83.0)	31 (79.5)
	Battery	8 (17.0)	8 (20.5)
9.	Capacity		
	Less than 500**	4 (8.5)	-
	501 - 1000	18 (38.3)	12 (30.8)
	> 1000	25 (53.2)	27 (69.2)
10.	Special Training		
	Yes	15 (13.9)	15 (38.5)
	No	32 (68.1)	24 (61.5)

\*Percentages in parentheses . \*\*Small Scale

observed a similar morbid scare of poultry products occurred and this caused a lull in the production and marketing of poultry products (especially egg and broiler meat). By October 2006, the Avian-flu scare had since abated and presently the economic environment is gradually regaining stability. Part of a 2004 study on poultry egg Production in Uyo metropolis of Akwa Ibom State, Nigeria (Akpabio and Chukukere, 2004) had focused on constraints affecting egg production. Against the background, this study was conceived to comparatively analyze the socio-economic and constraint factors affecting poultry egg production in Uyo urban, the capital city of Akwa-Ibom state of Nigeria. In specific terms the study attempted to analyze in comparative terms, poultry egg production enterprise in the study area in terms of socio-economic characteristics of its operators and constraint factors affecting the enterprise. This is with specific reference to the pre (2004) and post (2006) avian influenza incident scare.

## Materials and Methods

**Study area:** Uyo urban is the capital city of Akwa Ibom State. It extends from latitude 4°58' to 5°05'N and longitude 7°54' to 8°00'E of the equator. It covers an area of 10 kilometers radius and comprises 21 villages and a total land area of 15,750 hectares. Uyo assumes prominence as an administrative and commercial nerve centre and an important road junction. The relief of Uyo urban is that of relatively gentle to monotonously plain land higher than 61 meters and the town falls within the sub-equatorial climate with a mean rainfall of 2,500 mm and a yearly relative humidity range of 70-80%.

The population of the study comprised all the 54 poultry farmers domiciled in the study area and registered with the Uyo office of the Akwa Ibom Agricultural Development Programme (AKADEP) in 2004 and 2006 November, after the bird flu scare. A pre-tested and validated structured questionnaire was utilized, with the aid of trained enumerators to elicit responses from the purposefully selected 47 and 39 operators of functional poultry farms, in 2004 and 2006 respectively. These were subsequently utilized for the study and their responses were analyzed with the aid of mainly descriptive statistics.

Major constraints affecting poultry egg production was determined by drawing up a list of possible constraints with the aid of interviews and literature search. Respondents were thereafter requested to respond to their perception, on the level of severity of each constraint factor, with the aid of a five point Likert continuum of strongly disagreed (1) disagreed (2) No opinion (3) Agreed (4) and strongly agreed (5). Attitude scores were thereafter computed and a mean score of 3.5 (1+2+3+4+5/5+0.5) was utilized to differentiate between a major constraint (x=3.5) and minor constraints (x<3.5).

## Results and Discussion

**Socio-economic structure of poultry egg entrepreneurs:** Poultry egg production and marketing is a thriving enterprise in Uyo. It however has some salient characteristics. For instance, local supply (combined with supplies from outlying communities) far exceeds demand, hence large-scale producers depend for sustenance on an equally thriving export market, to outlying towns (Aba, Eket, Calabar and Port Harcourt etc). The export market is controlled by middlemen who also fix prevailing prices and hence make more profit than the large-scale poultry egg producers. Small egg producers barely manage to survive. This was the scenario in 2004, when the first part of this study was conducted, up till early 2006, when the avian influenza scare became manifest. Table 1 (item 1) shows that the number of functional poultry enterprises dropped from 47 (in 2004) to 39 (in November, 2006) after the avian-flu scare abated. In the process, the sex ratio of

## I.A. Akpabio: Avian Influenza Scare and Poultry Egg Production in Uyo Urban, Nigeria

Table 2: Constraints affecting poultry egg production

Sr. No.	Items	2004	Remarks	2006	Remarks
1	High mortality of day old chicks	2.85	NC	2.84	NC
2.	Egg eating by layers	3.30	NC	3.24	NC
3.	Cannibalism and Pecking	3.26	NC	3.28	NC
4.	Disease outbreak	3.66	C	3.66	C
5.	Fluctuation in egg production	4.12	C	4.24	C
6.	High cost of feed	4.36	C	4.38	C
7.	High cost of vaccine	3.60	C	3.51	C
8.	Low market demand	2.53	NC	1.45	NC
9.	Lack of capital for expansion	3.87	C	3.97	C
10.	High labour cost	2.24	NC	2.28	NC

C = Constraint.

NC = Non Constraint

entrepreneurs changed from the 5:1male, female ratio in 2004, to a respective 2:1 ratio in 2006. In essence, more females assumed managerial positions in poultry enterprises. Obvious reasons exist for this event. The emergence of the avian-flu scare reduced local sale figures as consumers became wary of eating poultry products. The hitherto thriving export market also became non-existent as the government imposed a ban on inter state/LGA movement of poultry products in order to prevent viral spread. These events led to increased production costs and only large scale entrepreneurs, many of whom are also involved in poultry feed distribution, managed to survive. This is because they did not have to purchase poultry food, which is the most costly item in poultry egg production. Arising from the above scenario, many small-scale producers were forced to sell off their stock at ridiculously low prices. This is in consonance with FAO (2006) and Obayelu's (2007) reports to the effect that the impact of the avian-flu scare was more serious on the smaller family operated commercial producers. Some left the enterprise entirely, while others handed over their enterprises to their wives, in order to concentrate on perceived less stressful and more lucrative business ventures. This trend was quite noticeable among part-time and small-scale operators, who utilized deep litter system in their operations (items 6,8,9). In the process, some entrepreneurs with less length of experience in poultry egg production and with higher educational attainment (items 7and 4) dropped out of the enterprise, leaving less educated but relatively better-experienced operators in the enterprise. In essence, it may be asserted that the avian-flu scare brought functional changes in the socio-economic structure of poultry egg entrepreneurs who now comprise large scale (more than 500 birds capacity) full-time, but less literate and more female participants.

**Constraints affecting poultry egg production:** A comparative analysis of constraint items on Table 2 shows a similarity in respondents responses on the three major constraints affecting poultry egg production, viz; high cost of feed (item 6), fluctuation in egg production (item 5) and lack of capital for expansion (item 9). A closer scrutiny however reveals slightly higher

mean scores recorded for the 2006 survey period. For instance mean scores of 4.36, 4.12 and 3.87 were recorded for the respective major constraints in 2004, while 4.38, 4.24 and 3.97 were recorded for 2006. Table 2 also shows that although "low market demand" ( $x = 2.53$ ) was the second least perceived constraint in 2004, it became the least perceived constraint ( $x = 1.45$ ) in 2006. Reasons for this trend are obvious. The post avian-flu scare period has led to a resuscitation of the hitherto comatose egg marketing enterprise. Some entrepreneurs had however dropped out of the business during the scare period, hence there is a gap in supply, which cannot be easily bridged in the short term because of increasing daily demand for eggs. In essence, demand for eggs is high, (hence the low score for low market demand). Egg prices have therefore skyrocketed. Investors are reaping massively and have an overwhelming desire to expand poultry stocks. They are however constrained by fluctuating egg production, lack of funds and high cost of feed. These results are a disconcerting confirmation of reported results (Apantaku, 2006; Adebayo and Adeola, 2006; Isiaka, 1998) to the effect that low egg production remains a bane to the poultry egg production enterprise and that the level of productivity in the industry is not yet commensurate with available level of poultry technologies.

**Conclusion and recommendations:** The study has revealed that the avian-flu scare of 2006 has brought functional changes in the socio-economic structure of the enterprise in Akwa Ibom State. It was also revealed that the poultry industry still falls short of its aim of ensuring self-sufficiency in animal protein production in the country.

Against the background of Delgado *et al.* (1999), prediction to the effect that human population growth, increasing urbanization and rising incomes would double the demand for and production of livestock produce in developing countries in the next 20 years, it becomes imperative to institute far reaching measures to revamp the poultry enterprise industry in Akwa Ibom State and Nigeria. The following recommendations seem pertinent:

### I.A. Akpabio: Avian Influenza Scare and Poultry Egg Production in Uyo Urban, Nigeria

- 1 Banks and micro-finance institutions should be encouraged to release loanable funds to poultry producers in order to enable them accommodate and overshoot local demand and aim for the export market. Government guarantee on loanable funds will make the process easier.
- 2 Extension agents should intensify the introduction of improved technologies to poultry producers and also ease the adoption process by making available information on procurement sources.
- 3 Research institutes should collaborate with companies that produce day-old chicks and poultry feed in order to produce higher quality inputs for the poultry.

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