

ASSESSMENT OF THE ECONOMIC AND SOCIAL IMPLICATIONS OF THE AVIAN FLU OUTBREAK ON THE NIGERIAN POULTRY INDUSTRY

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ABSTRACT

As a result of the debut incursion of the avian influenza virus into Nigeria in January 2006, severe outbreaks occurred in a number of poultry farms leading to widespread fears and a lot of apprehension. The objectives of the study were to assess, document and highlight the economic and social implications of the disease outbreaks on the Nigerian poultry industry as well as recommend measures for its effective control. The review covered ten (10) states of the country as well as the Federal Capital Territory (FCT) Abuja, Nigeria. The results revealed that the avian influenza virus affected a total of 158 poultry farms located in 10 of the 36 states including the FCT Abuja. An estimated total of Seven hundred and three thousand, four hundred and thirty (703,430) poultry were lost, out of which 288,662 (41.06%) died, while 414,403 (58.94%) poultry were slaughtered. Estimated revenue loss in naira (the official Nigerian currency) amounted to Seven hundred and three million, sixty-five thousand naira (N703,065,000). Globally, between 1983-2004, a total of Sixty million, six thousand and one (61,006,001) birds were lost. Estimated revenue loss globally within the period also amounted to One billion, one hundred million Euros (E1.100,000,000) in addition to Three hundred and fifty million dollars (\$350,000,000). Increased surveillance, close monitoring, improved sanitation, quarantine of poultry farms as currently being carried out will reduce the scourge of the disease infection in Nigeria.

KEYWORDS: Assessment, Economic, Social Implications, Avian Flu, Nigerian Poultry.

INTRODUCTION

Avian flu is a highly infectious, contagious and zoonotic disease of man, poultry and other birds caused by the avian influenza type A virus, Emmanuel et.al. (2006). The avian influenza virus belongs to the family Orthomyxoviridae and all influenza viruses have in common internal type A antigens, Alexander et.al. (1993), Alexander (1995), Jordan (1996). The disease outbreak involving avian influenza virus was first reported in Nigeria on the 22nd January, 2006 at Sambawa farms, Jaji, Kaduna, Kaduna State, Charles and Anthony (2006), Olukayode et.al. (2006), Molly (2006), Barnabas (2006). Thereafter the disease spread like wildfire, ravaging poultry in its path to the Federal Capital Territory (FCT) Abuja, Nassarawa, Katsina, Yobe, Jigawa and most of the other states of the Federation, Molly (2006), Uweru (2006). In most farms affected, disease appeared insidiously, affecting the respiratory tracts causing a drop in egg production and invading multiple organs and tissues with morbidity and mortality rates, approaching 100% within 48hrs. The infection in birds can however give rise to a wide variety of clinical signs that may vary according to the host, strain of virus, host immune status, presence of any secondary exacerbating organisms and environmental conditions, OIE (2004). One major characteristics of the avian influenza virus is its ability to undergo copious mutations to a form

populations, Jordan and Pattison (1996), Kutz et.al. (2004), USG (2005). The influenza outbreak in Nigeria was indeed a humbling episode and a rude awakening for a slumbering nation as bird flu has come to roost in Nigeria, Bakojie et.al. (2006). This singular event went down in history as the first confirmed outbreak of the dreaded pathogenic avian influenza virus (H5N1) in sub-Saharan Africa and has since become a reference point, Uweru (2006). The objectives of the study were to create awareness and highlight its potential dangers as well as assess the socio-economic implications of the disease outbreaks on the Nigerian Poultry Industry and recommend appropriate control measures.

MATERIALS AND METHODS

The Federal Livestock Department (FLD) Abuja, an arm of the Federal Ministry of Agriculture and Natural Resources, charged with the statutory responsibilities for the treatment and control of livestock and poultry disease in the country provided the primary data for this review. The data generated from the FLD therefore need no further authentication before publishing. The avian influenza outbreak affected a total of fifty-four (54) poultry farms located in the Federal Capital Territory (FCT) Abuja and 10 states nationwide including Zambrabara, Bauchi, Kano, Kaduna, Katsina, Lagos,

Nassarawa, Niger, Ogun and Plateau States. Data from the affected farms included dead and slaughtered birds reported to the Federal Livestock Department (FLD) in the states where they occurred and collated finally by the Federal Livestock Department, Abuja. The

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H5N1 strain which is transmissible to man and it is often highly contagious among member of both

population for the study consisted mostly of exotic poultry managed intensively within the study areas of the affected states. The data were generated from the spontaneous outbreaks in the farms in the various states and the FCT Abuja at the time, not from a randomized sampling of the population and amply represented a sizeable population for the study. Specimens of dead and slaughtered birds frozen and in formalin were sent to the laboratory for the identification and confirmation. Initial samples collected were sent to the diagnostic centre of the Food and Agriculture Organization (FAO) Rome, Italy while subsequent samples were sent to the rehabilitated laboratory of the Nigeria Veterinary Research Institute (NVRI) Vom, Plateau state for confirmation. Some data were also obtained from the Internet. Data generated was presented using Descriptive Statistics such as Tables, Means and Percentages.

As a result of the dramatic insurgence of the disease, the Federal Government of Nigeria immediately set up the Avian influenza control project with the headquarters at FCT-Abuja and branch offices in most states of the Federation. The committee was charged with the responsibilities of carrying out mass public enlightenment of the populace, quarantine affected farms, report all new cases of the disease and submit samples for confirmation, cull, burn, bury affected poultry, step up monitoring and surveillance activities of all poultry farms within the country.

RESULTS

A total of 154 poultry farms located in the FCT-Abuja and the 10 states of the Federation were affected (Tables 1 & 2). Anambra State (Table 1) had dead birds only while Katsina state (Table 2) had slaughtered birds only, while all other states had both dead and slaughtered birds all totaling 703,065 birds. A total of 288,662 (41.06%) poultry birds died in all the farms (Table 1). The highest mortality rate was recorded by farms in Kano state which lost 77,465 (26.84%) birds followed by Kaduna state which lost 76,149 (26.38%) birds, Bauchi state 65,085 (22.55%) birds, Ogun 39,793 (13.79%) birds; Lagos 14,353 (4.9%), Niger state 1.484

(0.51%) birds, Anambra 500 (0.17%) birds, FCT-Abuja 20 (0.01%) birds. A total of 414,403 birds (58.94%) were slaughtered (Table 2). The highest number came from farms in Kano state where 143,375 (34.60%) birds were slaughtered, followed by Bauchi state 85,804 (20.71%) birds, Ogun 85,207 (20.56%) birds, Plateau 42,305 (10.21%) birds, Kaduna 37,303 (9.0%) birds, Nassarawa 12,254 (12.96%) birds, Katsina, 4,071 (0.98%) birds; Lagos, 3,697 (0.89%) birds; Niger, 181 (0.104%) birds; FCT-Abuja, 206 (0.04%) birds.

Estimated revenue loss from dead and slaughtered birds (Table 3) amounted to Seven hundred and three million, sixty five thousand naira (N703,065,000) only. Farmers in Kano state lost the highest revenue totaling Two hundred and twenty million, eight hundred and forty thousand naira (N220,840,000), followed by Bauchi state, One hundred and fifty thousand, eight hundred and eighty-one thousand naira (N150,881,000); Ogun state, One hundred and twenty-five million naira (N125,000,000); Kaduna state, One hundred and thirteen million, four hundred and fifty two thousand naira (N113,452,000); Plateau state, Fifty-four million, three hundred and fifty-eight thousand naira (N54,358,000); Lagos state, Eighteen million and fifty thousand naira (N18,050,000); Nassarawa state, Fourteen million, fourteen thousand naira (N14,014,000); Katsina State, Four million, seventy-one thousand naira (N4,071,000); Niger state, One million, six hundred and sixty-five thousand naira (N1,665,000) and Anambra state, Five hundred thousand naira (N500,000) including Abuja FCT Two hundred and twenty-six thousand naira (N226,000). The Prevalence of avian flu globally showed that between 1983-2004, a total of Sixty-one million, six thousand and one (61,006,001) birds were lost due to several outbreaks of the infection (Table 4) Who website (2001:2006). Of the total number China alone lost 6,000 migratory birds; Netherlands, 30 million; Italy, 14 million; USA, 17 million, while estimated revenue loss in Euros and Dollars amounted to One billion, one hundred million Euros (E1.100,000,000) plus Three hundred and fifty million Dollars (\$350,000,000).

Table 1: Farms affected with Avian Influenza Outbreak in Nigeria (2006)

S/N	State	No. of Farms	%	No. of Dead Birds	Mortality
1.	Anambra	1	0.67	500	0.17
2.	Bauchi	7	4.67	6586	22.55
3.	FCT-Abuja	3	2.00	20	0.01
4.	Kano	58	38.67	77,465	26.84
5.	Kaduna	59	39.33	76,149	26.38
6.	Lagos	1	0.67	14,353	4.97
7.	Nassarawa	5	3.33	1,760	0.61
8.	Niger	2	1.33	1,484	0.61
9.	Ogun	1	0.67	39,783	13.79
10.	Plateau	13	8.67	12,053	4.18
	Total	150	100.01	288,662	100.1
				(41.06%)	
	Mean (X)	15	10.00	28,860	10.00

Source: FLD Abuja, Nigeria.

Table 2: Spread of Avian Influenza Diseases in farms and states involved (2006)

S/N	State	Total No. of Birds Lost (Dead and slaughtered)	% of Farms	No. of Depop. Birds	As % of total birds depop
1.	Bauchi	7	4.58	85,804	20.71
2.	FCT-Abuja	3	1.96	206	0.04
3.	Kano	58	37.91	143,375	34.60
4.	Kaduna	59	38.56	37,303	9.00
5.	Katsina	4	2.61	4,071	0.98
6.	Lagos	1	0.65	3,697	0.89
7.	Nassarawa	5	3.27	12,254	2.96
8.	Niger	2	1.31	181	0.04
9.	Ogun	1	0.65	85,207	20.56
10.	Plateau	13	8.50	42,305	10.21
	Total	153	100.00	414,403 (58.94%)	99.99
	Mean (X)	15	10.00	28,860	9.99

Source: FLD Abuja, Nigeria.

Table 3: Estimated Revenue Loss due to Avian Infuenza Outbreaks in Nigeria 2006

S/N	State	No. of Farms	No. of Dead Birds	Mortality
1.	Anambra	500	500,000	3,846.20
2.	Bauchi	150,889	150,889,000	1,160,684.64
3.	FCT-Abuja	226	226,000	1,738.46
4.	Kano	220,840	220,840,000	1,698,769.23
5.	Kaduna	113,452,000	113,452,000	872,707.69
6.	Lagos	18,050	18,050,000	138,846.15
7.	Katsina	4,071	4,071,000	31,315.39
8.	Nassarawa	14,014	14,014,000	107,800.00
9.	Niger	1,665	1,665,000	12,807.00
10.	Ogun	125,000	125,000,000	961,538.46
11.	Plateau	54,358	54,358,000	418,138.46
	Total	703,065	703,065,000	\$5,408,192.37
	Mean (X)	7,030.5	7,030.5	540,819.24

Source: FLD Abuja, Nigeria.

Table 4: Prevalence of bird flu globally (1983-2009)

S/N	Country	Period	Estimated Birds (Wild & Domestic Poultry) Population Lost	Estimated Financial Losses
1.	China	Late June, 2004	6,000 (Migratory birds)	
2.	Hong-Kong	-	1 will bird	
3.	Netherlands	2003	30 million	€750
4.	Italy	1999 – 2000	14 million	€350
5.	U.S.A.	1983	17 million	€350
	Total		61,006,001	€1,100,000,000+\$350 million Dollars
	Mean (X)		12,501,200	

Source: W.H.O. website (2001:2006).

DISCUSSIONS

It has been estimated that Nigeria has a chicken population of 140 million out of which 100 million are

extensively managed, Oluyemi and Roberts (2000). During this Nigerian outbreak of avian influenza, a total of 703,065 birds (dead and slaughtered) were lost, resulting in an estimated revenue loss of Seven hundred

and three million, sixty-five thousand naira (N703,065,000) only (Table 2). Between 1983-2004, it was observed that losses due to dead and slaughtered poultry globally arising from avian influenza infection reached Sixty-one million, six thousand and one (61,006,001) birds leading to an estimated loss of One billion, one hundred million Euros (E1.100,000,000) in addition to Three hundred and fifty million dollars (\$350,000,000). When these global outbreaks are compared with the recent Nigerian outbreaks, it becomes obvious that the influenza virus causes both high morbidity and mortality rates in poultry and collaborate the observations of Beered and Easterday (1992), Alexander (1995), Fouchier et.al. (2004) who in their various findings elaborated on the pathogenicity of the Avian influenza virus. The economic loss to farmers and corporate organizations (small scale and commercial farms) engaged in poultry production is enormous. A conservative estimate suggest that the poultry industry in Nigeria is capitalized by as much as N2 trillion and employs no fewer than 30 million Nigerians on the whole as observed by Uweru (2006), Olukayode et.al. (2006). Most of the poultry farms where the outbreaks occurred folded up and sacked most of their workers. In addition, a number of feed millers, vaccine, drug sellers and other businesses associated with the industry also folded up. It is estimated that several million Nigerians lost their jobs as a result of the outbreaks, Uweru (2006), Obioha (2006).

The outbreak also adversely affected the West African sub-region since the Nigerian stock of chickens accounts for 45% of the original poultry population and will as in Nigeria seriously affect the livelihood of millions of people in the sub region, Bakoji et.al. (2006), Olukayode et.al. (2006). Local chicken sellers and indeed most rural and urban dwellers were seriously affected by the outbreaks since at least 70% of Nigerian homes eat chicken. Local people usually buy, keep and maintain small backyard poultry birds of exotic breeds not only as a source of meat, but also as a way of saving money for a rainy day. Out of fear of contacting this zoonotic disease, people no longer ate chicken meat and eggs and so did not patronize restaurants and roadside chicken sellers, Olukayode et.al. (2006), Obioha (2006). Nigerians like every other reasonable persons have a morbid fear for anything that has to do with death, they love life and will not only abscorn but completely abandon anything that has to do with death. When the disease struck in January, a lot of people including poultry farmers and buyers were caught unaware and since producers were unable to produce because what they produced was boycotted, consumers had to go for possible alternatives. Consequently, fish and other meat products (except chicken) became very expensive. The banks were also seriously affected by the disease outbreak because since the ban on imported poultry in 2004, many banks may have been giving loans amounting to several millions of naira for the expansion of the local poultry industry. Poultry production grew by 10.3% in 2004, easily surpassing the previous year's output of 0.3% above the anticipated 6.0%, CBN (2004). If the bird flu outbreak is not properly managed, most of the loans obtained by the poultry farmers especially through the Central Bank of Nigeria

(CBN) managed Agricultural Credit Guarantee Scheme, which has been in place for years now will not be fully recovered.

Control measures that were taken to reduce the outbreaks included the slaughtering of all clinically sick and in contact birds and burying them properly, quarantine of all poultry farms within a 3km radius of the point of outbreak, wearing of protective apparels (boots, mask, gloves and overall) and carrying out thorough sanitization and disinfection of all poultry equipment, cages and houses, in accordance with the WHO recommendations of 2006, WHO (2001-2006). These control measures have been and are still in place and it is strongly believed that if properly applied and adequately coordinated, the scourge of the avian influenza outbreaks will be drastically reduced. Lasting control measures will however rely on the production of effective vaccine to protect birds against the disease condition but the problem is, the copious mutation ability of the virus which makes vaccine production a bit difficult.

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